

9536

Diag. Cht. No. LS-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. LA-10-2-74
Office No..... H-9536

LOCALITY

State OHIO
General Locality ... LAKE ERIE (SOUTH SHORE)
Locality .. EASTLAKE TO MENTOR HEADLANDS

19 74

CHIEF OF PARTY
Teddy D. Kuchiak

LIBRARY & ARCHIVES

DATE January 22, 1979

9536

Area 7

Charts

14825 + Inset ✓

14820 April 17-22-81 GLS

14820M April 25-30 (A-8-82)

HYDROGRAPHIC TITLE SHEET

H-9536

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.

LA-10-2-74

State Ohio

General locality South Shore, Lake Erie (South Shore)

Locality Eastlake Headlands Chegarin River to Mentor Harbor

Scale 1:10,000 Date of survey July 17 - September 7, 1974

Instructions dated June 20, 1974 Project No. OPR-300-LA-74

Vessel NOAA Launch Laidly 1264 and Survey Boat 1638

Chief of party Teddy D. Kuchciak

Surveyed by Teddy D. Kuchciak and Ronald R. Bagalay

Soundings taken by echo sounder, hand lead, pole Raytheon 723-D

Graphic record scaled by J. O. Rolland & J. M. Nahas

Graphic record checked by J. M. Nahas and E. Martin

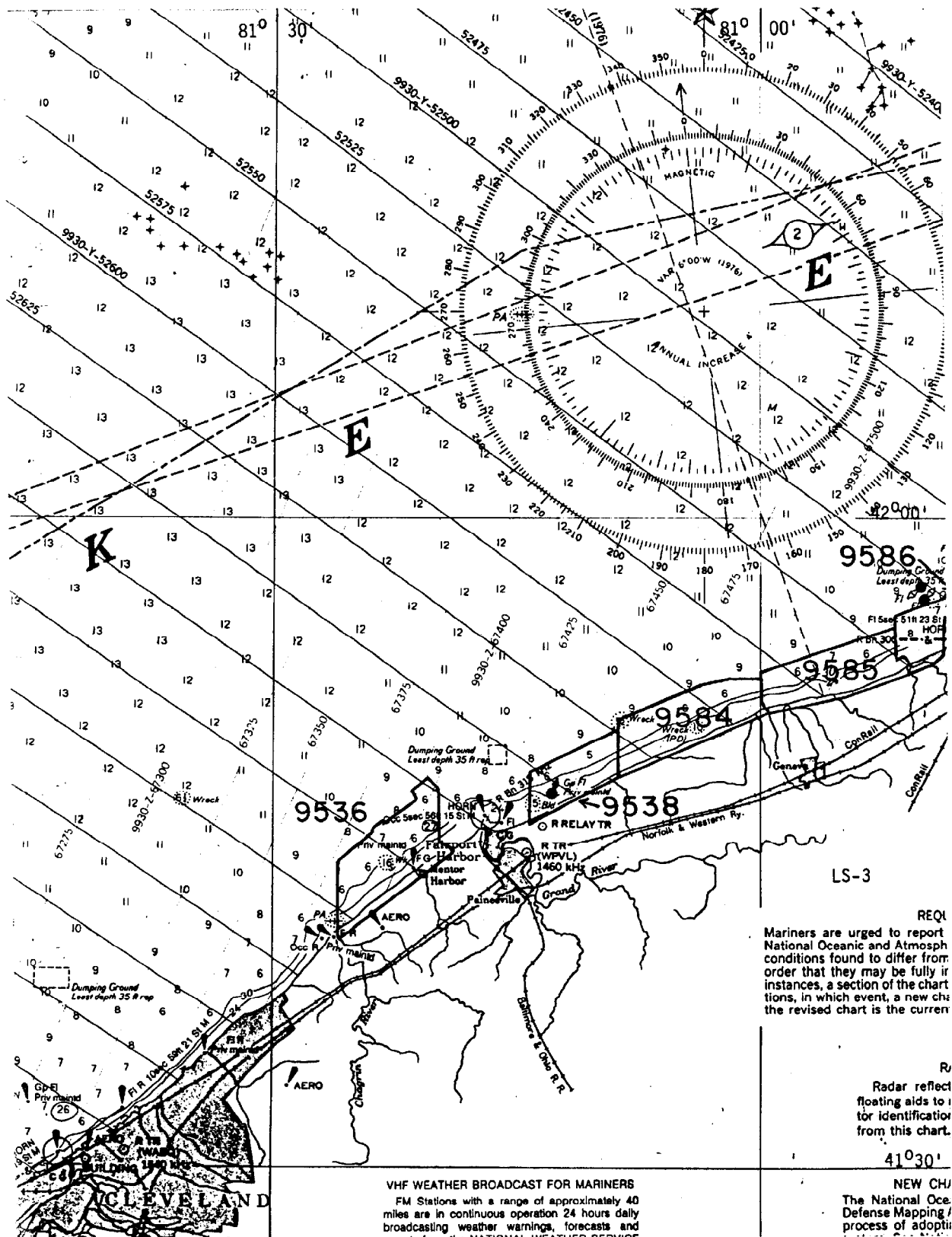
Protracted by _____ Automated plot by AMC Calcomp 618

Verification by AMC Verifications Branch JS Bradford 12-20-78

Soundings in ~~XXXXXX~~ feet at ~~MLW~~ ~~MLLW~~ LWD ~~xxxx~~ 568.6 feet IGLD (1955)

REMARKS: All times are Greenwich ^{Mean} Civil Time, unless otherwise noted as Eastern Standard Time.

Applied to state 5/24/79
CB



REQU
 Mariners are urged to report National Oceanic and Atmosph conditions found to differ from order that they may be fully in instances, a section of the chart tions, in which event, a new chz the revised chart is the curren

R
 Radar reflect floating aids to for identifier from this chart.

VHF WEATHER BROADCAST FOR MARINERS
 FM Stations with a range of approximately 40 miles are in continuous operation 24 hours daily broadcasting weather warnings, forecasts and

NEW CHU
 The National Oce. Defense Mapping / process of adopti

DESCRIPTIVE REPORT
To Accompany
HYDROGRAPHIC SURVEY
H-9536, LA 10-2-74

Scale: 1:10,000

Year: 1974

Vessel: NOAA Launch 1264 and S/B 1638

Chief of Party: Teddy D. Kuchciak

A. PROJECT

Project OPR-300-LA-74 (Moss Point to 8 miles east of Fairport Harbor, Ohio) is a combined total of four surveys. The survey described herein (2nd of four) was accomplished in accordance with Project Instructions, OPR-300-LA-74, dated June 20, 1974.

B. AREA SURVEYED

The survey was made in the inshore waters along the south shore of Lake Erie, extending from Chagrin River to Mentor, Ohio. The area surveyed extends from within the 6-foot depth contour to beyond the 40-foot depth contour, and is bounded by Longitudes 81°26'0 and 81°20'0. The survey was started on July 17, 1974 and was completed September 7, 1974.

C. SOUNDING VESSEL

The NOAA Launch LAIDLAY (1264) and Survey Boat 1638 were used to accomplish the survey. Regular or deeper sounding performed by the LAIDLAY involved Position Numbers 1446-3933 inclusive. Remaining close inshore sounding operations performed by S/B 1638 involved Position Numbers 1-664 inclusive and Position Numbers 1-179 from the 206 day.

D. SOUNDING EQUIPMENT

Sounding equipment used aboard the LAIDLAY (1264) was the Raytheon 723-D, SN 1278, during the entire period of this survey. The digital depth recorder operated well for the entire survey.

Sounding equipment used aboard Survey Boat 1638 was the Raytheon 723-D, SN 2042, during the entire period of the survey. The Raytheon recorder and digitizer operated very well for the entire survey.

Corrections to Echo Soundings

1. Velocity of sound correctors were derived from the Direct Comparison Log, Column P, Corr. (C-N).

2. Deviations of the initial draft setting from the 0-foot line were noted on the fathogram during scanning and were taken into account when the sounding records were corrected.

3. Fathometer instrument error was determined from the Direct Comparison Log, Column Q, Instrument Error (J-P). Instrument error was applied to the analog record during scanning of the digital and analog records. Corrections to the master tape were applied via the corrector tape.

4. Direct Comparison of the Analog Record and the Digital Readings against true bar depths were made only under ideal conditions, at intervals of once or twice a day, and at random locations throughout the work area.

A static draft correction of 2.5 feet was determined for the LAIDLAY (1264) and 1.5 feet for SB 1638.

5. Settlement and squat tests were made on VESNO 1264 and 1638 on the 19th and 20th of June, 1974. Test procedures were in accordance with recommendations in Section 4.9.4 of the Provisional Hydrographic Manual. (See Page 46-48 for test results).

E. HYDROGRAPHIC SHEETS

DCU tapes containing depth and ranging data were generated by the data logger on board Survey Boat 1638. These data were plotted off line, using the Hydroplot System located in the field office trailer after DCU (row) tapes were merged with azimuth tapes producing range-azimuth master tapes. Corrector tapes, velocity tapes, and signal tapes were generated by Mr. Nahas.

Raw data master tapes from the LAIDLAY (VESNO 1264) were generated and data plotted on the boat sheet in real-time using the on-board HYDROPLOT System. Edited master and corrector tapes, velocity tapes, tide tapes (Water Level Data), and TC/TI tapes were generated at the HSB office by Mr. Nahas. Final verification of the smooth plot will be accomplished by the Verification Branch, (CAM31), AMC.

F. CONTROL STATIONS

Monumented 2nd-order horizontal control stations used for this survey is (020) Eastlake LSC, 1974.

Monumented 3rd Order Control Stations used in this survey are (005) SEMINOLE LSC, 1974; (006) MENTOR HBR Y.C. LSC, 1974; (008) CORDUROY LSC, 1974; (120) FALL IN LSC, 1974; (122) SALAD LSC, 1974; (123) SEAGULL LSC, 1974; (125) HEADLANDS LSC, 1974.

G. HYDROGRAPHIC POSITION CONTROL

A Del Norte SHF electronic positioning system was used in the Range/Range positioning mode to control limits of the survey for the launch LAIDLAY (1264) during hydrographic data acquisition on Sheet LA 10-2-74.

Survey Boat 1638 utilized Range/Azimuth positioning procedures and a DCU (Digital Control Unit) for logging input data. This boat operated in shallow water inside the "banana" area inherent in normal Range/Range positioning.

Electronic control, sounding associated HYDROPLOT equipment aboard the Launch LAIDLAY (1264).

Del Norte SHF Electronic Positioning System

T/R Master Transponder with Omni 360° x 30° Antenna	SN 246
DMU Trisponder 202A	SN 192
Parallel Buffer, 200-IPIA	SN 127

Hydroplot System

D.E.C. Hydroplot Controller	SN 76005941-0700004
D.E.C. Computer PDP8-E (8K-Memory)	SN PRO 308130
D.E.C. High Speed Reader/Punch	SN 0211123-0256239
Left-Right Steering Indicator	

Teletype ASR-33	SN 465065
Teletype ASR-33	SN 465202

Complot DP-3/5 Plotter	SN 5279
------------------------	---------

Sounding System

Raytheon 723D, Digital Depth Recorder SN 1278

Electronic control equipment comprising the shore stations.

Del Norte SHF Electronic Positioning System

Remote Transponder	A	SN 174
"	"	SN 244
"	"	SN 256
"	"	SN 264

Four directional antennas were marked A, B, C, and D and were used with corresponding remote transponders.

CALIBRATION FOR LAUNCH 1264 AND SURVEY BOAT 1638

Calibration of the LAIDLAY (VESNO 1264) was accomplished by the use of the sextant method (using RK 561 to compute the Del Norte corrections). Generally, at least four sets of calibrations were taken in the morning and corrections entered into the HYDROPLOT CONTROLLER before starting hydro-operations. At the end of the day, four more sets of calibrations were taken and meaned. The mean of the two series of calibrations usually checked within + 2 meters. All series of calibrations from the same control network were meaned and applied to the Corrector Tape during the final field processing stage.

Calibration of the Del Norte SHF, electronic positioning system on board Survey Boat 1638 was accomplished within the work area of this survey by using 2nd and 3rd order control stations as calibration points.

The T/R would be placed over desired hydrographic control stations and values would be monitored (over a measured base line) and recorded in the hydrographic log (Form 275). These values would then be compared to the length of the base line or the inverse distance between control points used, and a + correction would be applied to the Del Norte Range via the corrector tape and was applied during the final field processing stage.

H. SHORELINE

Due to extensive beach erosion along the south shore of the Lake Erie, it is intended to photogrammetrically update the shoreline depiction in the near future. Shoreline will not be used on this survey, except for approximate shoreline that is from the U. S. Lake Survey Composite, (Blue line) labeled Field Sheet 9 and dated 1948, (See recommendations).

I. CROSSLINES

Approximately 11% of the hydrography data collected on LA 10-2-74 resulted from crosslines. The crossline agreement was very good and in most instances checked within one foot.

Survey Boat 1638 ran no crosslines on the RA portion of this survey. Although the regular lines acquired by Survey Boat 1638 junctioned with the main scheme lines run by the LAIDL. Consequently, excellent agreement was obtained with soundings checking one foot or less.

J. JUNCTIONS

Junction with contemporary survey LA-10-1-74, H-9535⁽¹⁹⁷⁴⁾ and LA-10-3-74, H-9537 accomplished during the 1974 field season is very good.

K. COMPARISON WITH PRIOR SURVEYS

Comparison with U. S. Lake Survey, Field Sheet 9, composite of prior surveys (Blue line) dated 1948 shows good agreement above the twenty-foot contour with differences generally two feet or less. Depths shoaler than 24 feet had erratic comparisons. This was especially observable on the southwest portion of the field sheet - where depths varied 3 - 6 feet.

The inconsistency in the shoaler water is very possibly attributable to the extensive erosion of the Lake Erie shoreline.

The much greater density of sounding coverage in the 1974 surveys provide a more detailed development of depth contour than do the prior surveys.

L. COMPARISON WITH THE CHART

Comparison with NOS Chart 14825 (formerly LS 34, dated November 5, 1971, scale 1:80,000) shows very good agreement. Depths are generally within two feet. Investigation and development are listed below. Comparison also made with 18th ED. Dec. 7/74.

1. On 207 day, (Position #~~1333-1334~~²⁰³³⁻²⁰³⁴) located wreck of Tug North Carolina. Made contact with wreck again (Position #~~1468-1469~~ at 2257 GMT) Lat. $41^{\circ}43'48.246''$, Long. $81^{\circ}22'53.837''$. Least depth found by 723-D fathometer was 19 feet reduced to LWD IGLD (1955). The positioning mode used was R/R; LEFT (006 Mentor Hbr Y.C. LSC) 2345 meters, RIGHT (005 Seminole LSC) 2639 meters. The wreck (PD) with ten feet least depth over wreck is shown on current edition of the chart, at Lat. $41^{\circ}44'18''$, Long. $81^{\circ}22'54''$.

(Chart 34, dated Nov. 5, 1971)

2. On 214 day, (Position #2240) found shoaler depth over North Carolina wreck. Least depth found by 723-D fathometer was 17 feet reduced to LWD. The positioning mode used was R/R; LEFT (Mentor Hbr Y.C. LSC) 2368 meters and RIGHT (Seminole LSC) 2653 meters. Set temp buoy over the wreck per request U.S. Coast Guard.

3. On 218 day, searched for shoaler depth over North Carolina wreck. Shoalest depth found was 16.73 feet reduced to LWD. Divers verified the wreck to be the tug North Carolina and the least depth over the pilot house bulkhead to be 16.73 feet. See page 10 for recommendation.

See Quality Critique

See Quality Critique

4. On 224 day, (Position #3909-3933) a development of a 27 foot shoal located at approximate Lat. $41^{\circ}45'37''$ and Long. $81^{\circ}20'07''$ was plotted on a larger scale of 1:5,000 submitted with this report. The shoal is not shown on the current edition of Chart 14825 dated November 5, 1971. The above observations are shown on the 18th Ed. Dec. 7/74.

CONCUR

See Quality Critique

M. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys for charting.

N. AIDS TO NAVIGATION

There were no floating aids to navigation within the area of this survey during the time of the survey.

O. STATISTICS

(S/V LAIDL Y, VESNO 1264)

Number of positions	2488
Nautical miles of sounding line	290
Square nautical miles	16.5
Nautical miles of crosslines	31
Number of bottom samples	38

(SURVEY BOAT 1638)

Number of positions	843
Nautical miles of sounding lines	53
Square nautical miles	4.4
Nautical miles of crosslines	0
Number of bottom samples	0

TOTALS OF BOTH VESSELS

Positions	3331
Miles of sounding lines	343
Square miles	20.9
Miles of crosslines	31
Number of bottom samples	38

P. MISCELLANEOUS

1. LA 10-2-74 (H-9536) may at times be improperly referred to as "F.S.9" or "1-2339." This is due to the transition of the U.S. Lake Survey filing system into the NOS system.

2. Close inshore hydro was run approximately to the four-foot contour rather than the 0 foot contour.

3. Position numbers assigned to the hydrography run by the LAIDL Y started at pos. #1446 rather than pos. #1.

4. On the 207 day, LAIDL Y position numbers 1229-1470 are in actuality 1929-2170. *Changed to correct pos. Nr.*

5. Survey Boat 1638 position numbers on the 206 Day (#1-179) are duplicated with position numbers run on the 198 Day (1-199). *Day 198 Pos Nr. changed to 1001-1199*

6. In the vicinity of MENTOR HBR, the line spacing was reduced to 50 meters in order to better delineate the sounding area of the MENTOR HBR inset shown on Chart 14825.

Q. RECOMMENDATIONS

1. It is recommended that shoreline be obtained from recently completed Vermilion to Fairport, Ohio Photogrammetric Survey. (See enclosure (2) ~~missing~~)

2. Additional hydro should be collected in some areas between the six foot contour and zero foot contour.

3. Chart 34 edition of December 7, 1974 shows least depths over charted crib positions should be determined by use of a lead line. The two crib locations are Lat. 41°43'18", Long. 81°21'57" with a charted least depth of five feet, and Lat. 41°43'21", Long. 81°22'05" with a charted least depth of fourteen feet. *See Quality Critique*

4. The wreck shown on Chart 14825, edition December 7, 1974 at Lat. 41°43'49", Long. 81°22'54" should retain the sixteen ft. least depth over the wreck as reported in Notice to Mariners in August 2, 1974 and to C321 in October 7, 1974. See enclosure (1) page 36-37. *✓ enclos
See Quality Critique*

R. AUTOMATED DATA PROCESSING

<u>Program Name</u>	<u>Number</u>	<u>Version</u>
Range-Range Real Time	RK 111	8/07/74
Grid Signal & Lattice Plot	RK 201	4/18/75
Range-Range Non-real Time	RK 211	1/15/76
Visual Station Table Load	RK 212	4/01/74
Range-Azimuth Non-real Time	RK 216	2/05/76
Utility Computations	RK 300	2/05/76
Reformat & Data Check	RK 330	5/04/76
Geodetic Inverse/Direct Comp.	RK 407	10/23/75
H/R Geodetic Calibration	RK 561	2/19/75
Elinore-line Editor	RK 606	5/20/75

S. REFERENCE TO REPORTS

None

Respectively submitted,

Robert Lewis
Per/JEROME M. NAHAS

WATER LEVEL NOTE
H-9536 (LA 10-2-74)

Field water level reductions of soundings are based on an average of hourly scaled water level elevations during the period the hydrography was collected; as computed from the Fairport Harbor gage. All times are EST, add five hours to get GMT.

Location - Fairport Harbor

Latitude - 41°45'36"
Longitude - 81°16'52"

Period

June 1, 1974 - September 11, 1974 102 days

Fairport Harbor

Stevens automatic gage (SN 39740-64) along with reference, zero electric tape gage (ZETG), was installed on June 1, 1974. Only 0.001 feet difference in three sets of common levels determined elevation of ZETG to be 578.901 feet (IGLD, 1955).

VELOCITY TABLE #1

OPR-300

H-9536

LA 10-2-74

VESNO 1264

000125 0 0000 0001 000 126400 100274
000227 0 0002
000395 0 0004
999999 0 0006

RL

VELOCITY TABLE # 2

OPR-300

H-9536

LA 10-2-74

VESNO 1638

000074 1 0002 0002 000 163800 100274
000149 0 0000 0002 000 163800 100274
999999 0 0002

VESNO 1638
 VELOCITY CORRECTION TO SOUNDINGS
 OPR-300, H-9536, LA 10-2-74
 TABLE # 2

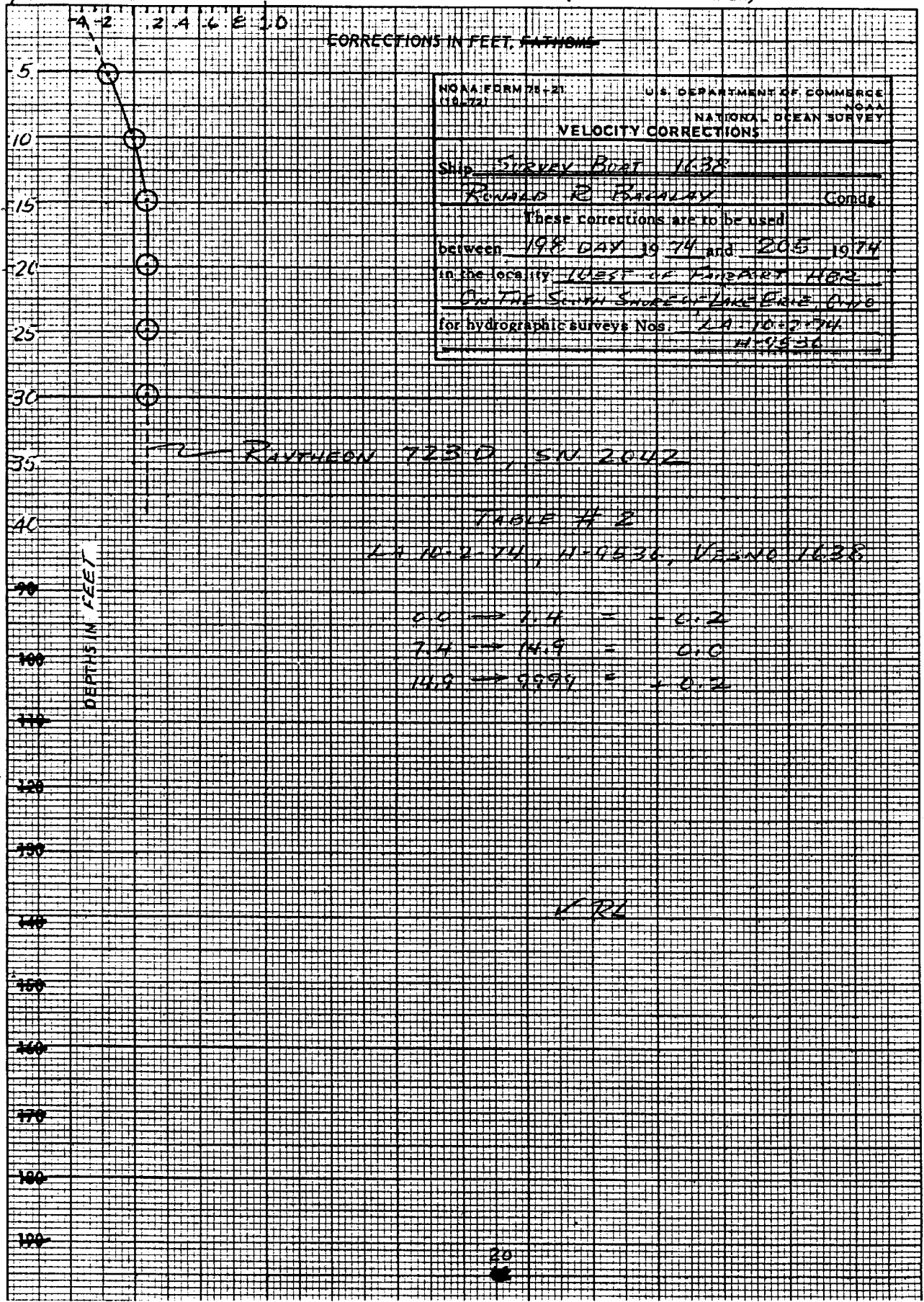
JULIAN DAY	5	10	15	20	25	30
198	-0.2	+0.1	+0.3	+0.3	+0.4	-
198	-0.2	0.0	+0.1	+0.1	+0.1	+0.2
205	-0.3	-0.1	-0.1	-0.1	-0.1	0.0
206	-0.1	-0.1	-0.1	-0.1	0.0	0.0
MEAN						
TABLE#2	-0.2	0.0	+0.1	+0.1	+0.1	+0.1

TRUE DEPTH	-	(P)	=	N
5	-	(-0.2)	=	5.2
10	-	(0.0)	=	10.0
15	-	(+0.1)	=	14.9
20	-	(+0.1)	=	19.9
25	-	(+0.1)	=	24.9
30	-	(+0.1)	=	29.9

✓RL

N

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



(For deep water add a 0 to these figures)

DEPTH IN FEET

SETTLEMENT & SQUAT
Launch 1264 & SB 1638

Settlement and squat tests were made on the Launch LAIDLAY (1264) and Survey Boat 1638, on June 19 and 20, 1974. The tests were conducted inside the Fairport Harbor. The project depth of twenty-five feet was more than adequate for the tests and the harbor breakwalls provided protection from open lake swells. Test procedures were in accordance with recommendations in section 4.9.4 of the provisional Hydrographic Manual. A leveling instrument was set up on one of the harbor piers and sightings taken on a level rod held on the LAIDLAY at the following speeds: 0, 1000, 1400, 1800, and 2000 rpm and on Survey Boat 1638 at the following speeds: 0, 500, 1000, 1500, 2000, 2500, and 2650 rpm.

LAIDLAY SQUAT TEST, JUNE 19, 1974
(Conditions not ideal)

RPM	Level Rod Reading, Ft.	Corr. Ft.	TRA-ft.
0	5.45	0	2.5 (draft)
1000	5.45	0	2.5
1500	5.60	+0.15	2.6
1800	5.35	+0.10	2.4
2000	5.05	-0.40	2.1

(Conditions ideal) Squat Test, June 20, 1974

0	5.35	0	2.5 (draft)
1000	5.50	+0.15	2.6
1400	5.57	+0.22	2.7
1800	5.27	-0.08	2.4
2000	4.95	-0.40	2.1

Squat Test - See SB 1638 Settlement & Squat Test Graph

SIGNAL LISTING

*Account
Hydro section*

*
005 7 41 42 24859 081 23 21912 250 0000 000000 Seminole LSC, 1974 .
*
006 7 41 43 39901 081 21 11985 250 0000 000000 Mentor Hbr. Y.C. LSC, 1974 .
**
007 7 41 46 04178 081 16 52705 243 0000 000000 Fairport Hbr. West Bkw. Lt. 1974
*
008 7 41 44 44439 081 18 47238 250 0000 000000 Corduroy LSC, 1974 .
"*"
020 7 41 40 27127 081 26 50747 250 0000 000000 Eastlake LSC, 1974 .
**
105 7 41 38 51453 081 28 06606 243 0000 000000 Tilted Slab LSC, 1974 .
**
106 7 41 39 13139 081 27 42409 243 0000 000000 Caisson LSC, 1974
**
117 7 41 40 48740 081 25 54505 243 0000 000000 Beach LSC, 1974 .
*
120 7 41 41 33929 081 24 43038 250 0000 000000 Fall In LSC, 1974 .
*
122 7 41 42 53533 081 22 29415 139 0000 000000 Salad LSC, 1974 .
*
123 7 41 44 01104 081 20 18838 250 0000 000000 Seagull LSC, 1974 .
*
125 7 41 45 16893 081 17 41703 250 0000 000000 Headlands LSC, 1974 .
**
126 7 41 43 41294 081 21 09786 254 0000 000000 E. Pier N. lt. 1974

* 3rd Order, Class II EODM Traverse Station (Quad 41 081 1)

"*" 2nd Order Traverse Station (Quad 41 081 1)

** Nonrecoverable Hydro Stations (3rd Order) Set by Hydro Section

APPROVAL SHEET


SURVEY H-9536 (LA-10-2-74)

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

No direct supervision was given by me during field work.

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

APPROVED AND FORWARDED,

For 
William R. Daniels
LCDR., NOAA
Chief, HSB

VELOCITY TABLE # 1 (RAYTHEON 723-D, SN 1278)

NOAA LAUNCH LAIDLY 1264

FIELD #'s LA 10-2-74 & LA 10-3-74
 REGISTRY #'s H-9536 & H-9537

DAY	10	15	20	25	30	35	40
207	+0.1	+0.1	+0.2	+0.3	+0.3	+0.3	+0.4
208	+0.1	+0.1	+0.3	+0.3	+0.3	+0.3	+0.3
208	+0.1	+0.1	+0.3	+0.3	+0.3	+0.3	+0.3
218	+0.1	+0.1	+0.1	+0.3	+0.4	+0.5	+0.5
219	0.0	+0.1	+0.2	+0.3	+0.3	+0.5	+0.5
220	-0.1	+0.1	+0.3	+0.3	+0.3	+0.5	+0.7
227	+0.1	+0.1	+0.3	+0.4	+0.4	+0.5	+0.5
228	+0.1	+0.3	+0.3	+0.3	+0.5	+0.7	+0.7
228	+0.2	+0.3	+0.3	+0.5	+0.5	+0.6	+0.8
Σ	+0.7	+1.3	+2.3	+3.0	+3.3	+4.2	+4.7
MEAN	+0.1	+0.1	+0.3	+0.3	+0.4	+0.5	+0.5

TRUE DEPTH - (P) = N

10	-	(+0.1) = 9.9
15	-	(+0.1) = 14.9
20	-	(+0.3) = 19.7
25	-	(+0.3) = 24.7
30	-	(+0.4) = 29.6
35	-	(+0.5) = 34.5
40	-	(+0.5) = 39.5

v RL

N

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

CORRECTIONS IN FEET

NOAA FORM 75-21 (10-74)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEAN SURVEY
VELOCITY CORRECTIONS	
Ship <u>NOAA LAUNCH LAIDLAY 1264</u>	
Tide <u>TEDDY KUENZIAR</u> Compd.	
These corrections are to be used	
between _____ 19____ and _____ 19____	
in the locality <u>South Shore of Lake Erie</u>	
<u>CHAGRIN RIVER TO FAIRPORT HBR., OHIO</u>	
for hydrographic surveys Nos. <u>LA 10-3-74, H-9536</u>	
<u>LA 10-3-74, H-9537</u>	

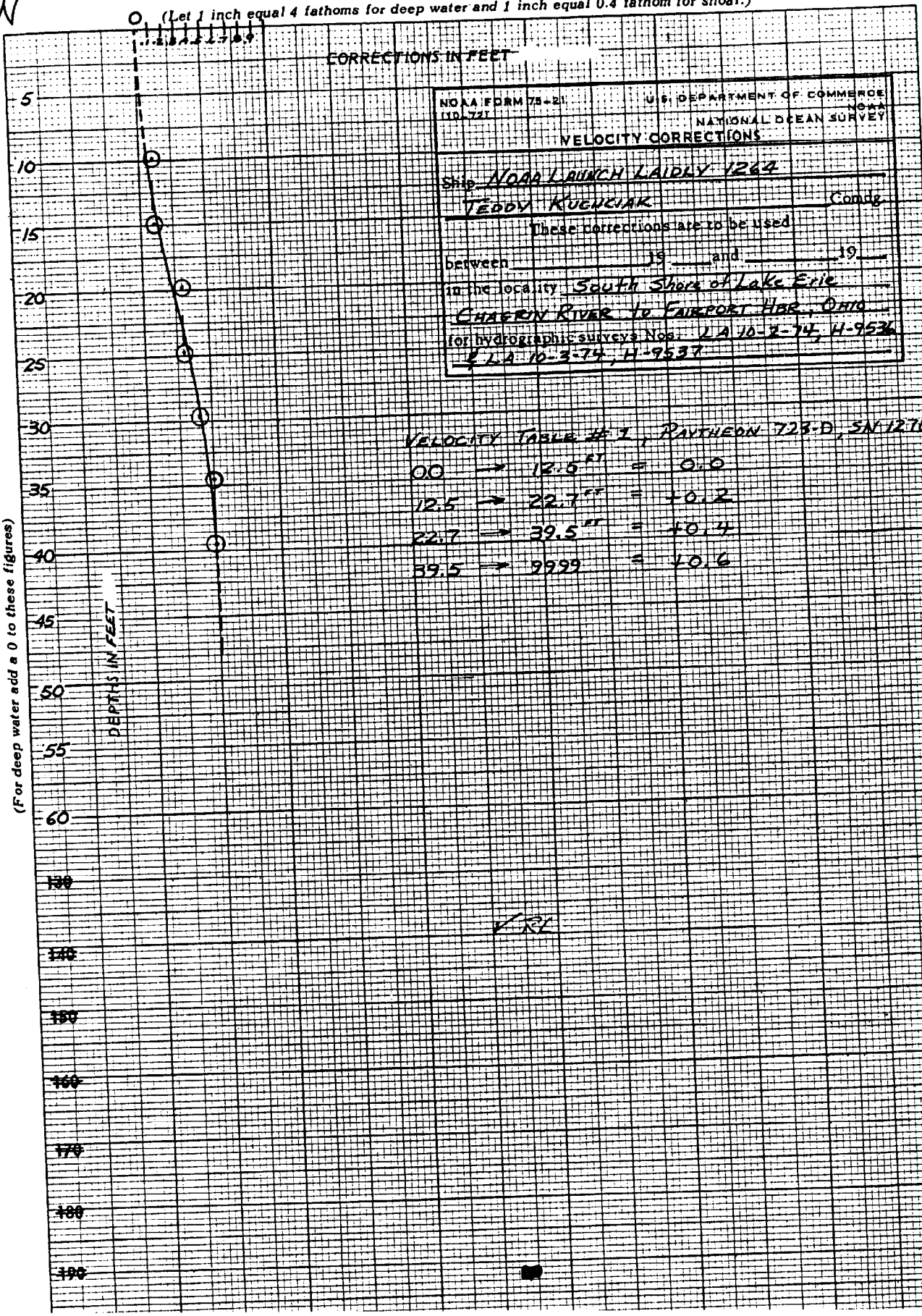
(For deep water add a 0 to these figures)

DEPTH IN FEET

VELOCITY TABLE # 1, RANTHEON 723-D, SN 1278

00	→	12.5 ^{RT}	=	0.0
12.5	→	22.7 ^{FF}	=	+0.2
22.7	→	39.5 ^{FF}	=	+0.4
39.5	→	9999	=	+0.6

V_{REL}



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

WATER LEVEL NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center: CAM3

Hourly heights are approved for

Water Level Station Used: Fairport Harbor, Ohio 906-3053

Period: June 1 - September 11, 1974

HYDROGRAPHIC SHEET: H-9536

OPR-300-LA-74

Locality: Lake Erie

Plane of reference: Low Water Datum (IGLD 1955 : 568.6 Feet)

Remarks:

Zoning not required.

Philip C. Manis
Chief, Water Level Branch

GEOGRAPHIC NAMES

H-9536

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	GRAND McNALLY ATLAS	U.S. LIGHT LIST				
Mentor Harbor	X											1
Lake Erie	X											2
EASTLAKE ✓	/											3
MENTOR-ON-THE-LAKE	/											4
MENTOR HEADLANDS	/											5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

Chas. E. Hammett
Chief Geographer - C3 x 5

17 APRIL 1979

APPROVAL SHEET
FOR 5
SURVEY H- 9636

- 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:

4/4/79

Signed:



Title:

Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		2	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		2	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES	2					1 - misc. data
CAHIERS	1 - with printouts		1			
VOLUMES	0					
BOXES			1 - Smooth			

T-SHEET PRINTS (List)

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	VERIFICATION	TOTALS
POSITIONS ON SHEET			3369
POSITIONS CHECKED	360	410	
POSITIONS REVISED		6	
SOUNDINGS REVISED		70	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)			
VERIFICATION OF CONTROL	1		
VERIFICATION OF POSITIONS	1	32	
VERIFICATION OF SOUNDINGS	1	27	
COMPILATION OF SMOOTH SHEET		31	
APPLICATION OF TOPOGRAPHY		0	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		3	
COMPARISON WITH PRIOR SURVEYS & CHARTS		7	
VERIFIER'S REPORT		10	
OTHER		7	
TOTALS	3	117	120
Pre-Verification by Frank Lamison, Ed Martin	Beginning Date 05/08/78	Ending Date 11/15/78	
Verification by J. S. Bradford	Beginning Date 12/03/78	Ending Date 12/28/78	
Verification by R. Robinson	Time (Hours) 2	Date 12/29/78	
Marine Center Inspection by Hydrographic Inspection Team (AMC)	Time (Hours) 4	Date 01/02/79	
Quality Control Inspection by <i>S. K. Meyer</i>	Time (Hours) 48	Date 4-16-79	
Requirements Evaluation by <i>J. B. Cunningham</i>	Time (Hours) 4	Date 4-26-79	

REGISTRY NO. H-9536

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. _____

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 1-4-82 TIME REQUIRED _____ INITIALS R. Willy

REMARKS:

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9536

FIELD NO. LA-10-2-74

Ohio, South Shore Lake Erie, Chagrin River to Mentor Harbor

SURVEYED: 17 July through 7 September 1974

SCALE: 1:10,000

PROJECT NO.: OPR-300-
LA-74

SOUNDINGS: Raytheon DE-723 Fathometer

CONTROL: Del-Norte
Range/Range
Range/Azimuth

Chief of Party T. D. Kuchciak
Surveyed by T. D. Kuchciak
..... R. R. Bagalay
Automated Plot by CALCOMP-618 Plotter (AMC)
Verified and Inked by J. S. Bradford
December 29, 1978

1. Introduction

No unusual problems were encountered during verification. The red changes in the Descriptive Report were made by the verifier. The projection parameters have been revised and inserted in the Descriptive Report.

2. Control and Shoreline

a. The control is adequately described in Sections F. and G. of the Descriptive Report.

b. There are no contemporary shoreline manuscripts available; therefore, brown shoreline was transferred to H-9536 from prior surveys 1-1849 A and B for orientation only. ✓

See Quality Critique

3. Hydrography

a. Depths at crossings are in good agreement.

b. The standard depth curves are adequately delineated. The 24 foot supplemental curve was added to conform with chart 14825. A few brown depth curves and 36 foot curves were also added to show certain features. ✓

c. The development of the bottom configuration and investigation of the least depth is considered adequate with the follow exception:

In the investigation of the wreck "North Carolina", day 218 was omitted from the hydrographic records. The Descriptive Report states that divers were used to verify that the pilot house bulkhead was the shoalest part of the wreck; and after the sounding was reduced to LWD a depth of 16.7 was obtained. The error in this depth is that a -0.4 velocity correction was not applied; therefore, the least depth should be $\pm 7.1^{16.3}$ A leadline extended from the bulkhead to the surface would have been preferred.

See Quality Control Report

4. Condition of Survey

The sounding records, field sheet and accompanying overlays, hydrographic records, and the Descriptive Report are adequate and conforms to the requirements of the Hydrographic Manual; with the exception that it was not common practice for Lake Survey to maintain a hydrographic sounding volume in 1974.

5. Junctions

An adequate junction was effected with the following contemporary surveys:

H-9535	(1974)	1:10,000	to the west
H-9537	(1974)	1:10,000	to the east

No contemporary survey junctions with the present survey to the north; however, present depths are in general harmony with charted depths.

6. Comparison With Prior Surveys

1-1815		(1942)	1:80,000
1-1849	A&B	(1947)	1:10,000

These most recent prior surveys taken together cover the common area of the present survey. 1-1815 compares well with minor differences of 0-3 foot. Prior survey 1-1849 A and B reveals variable differences of up to 7 feet, but generally the present survey was 2 to 3 feet deeper, with isolated differences of up to 7 feet deeper. These differences are attributed mostly to shoreline erosion and severe winter storms.

A closer comparison of the inshore shoals reveals that since 1947 the shoals have shifted, changed shape and often changed least depth. An example would be a 6 foot shoal with a least depth of 5 feet located at latitude $41^{\circ}44.1'$, longitude $80^{\circ}20.5'$ originating with prior survey 1-1849. This disagrees with the present survey as much as 7 feet. Although, an indication of a shoal appears approximately 200 meters seaward with a least depth of 7 feet.

The present survey is adequate to supersede the above prior surveys within the common areas.

7. Comparison With Chart 14875 (18th Edition, December 7, 1974)

a. Hydrographic

The charted hydrography originates with the previously discussed prior surveys and requires no further consideration.

Attention is directed to the following:

Depth over Crib 5 ft. latitude $41^{\circ}43'18''$, longitude $81^{\circ}21'57''$ a least depth was not obtained by hydrographer; therefore, it is recommend this feature be retained as charted.

Depth over Crib 14 ft. latitude $41^{\circ}43'³21''$, longitude $81^{\circ}22'05''$ a least depth was not obtained by hydrographer; therefore, it is recommend this feature be retained as charted.

Wreck latitude $41^{\circ}41'³49''$, longitude $81^{\circ}22'54''$ this feature is adequately discussed in the Descriptive Report.

The present survey is adequate to supersede the charted hydrography within the common area.

b. Aids to Navigation

The aids to navigation located on the present survey are in substantial agreement with their charted positions and adequately serve the intended purpose.

8. Compliance With Instruction

This survey adequately complies with Project Instruction.


9. Additional Field Work

This is considered a good basic survey, and no additional work is recommended at this time.

Inspection Report
H-9536

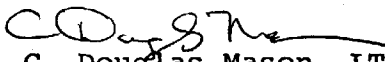
Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the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


Examined and Approved:
Hydrographic Inspection Team
Date:


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

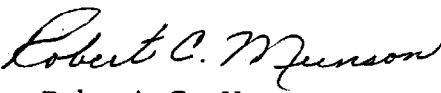
Absent
Charles H. Nixon, CAPT, NOAA
Chief, Operations Division

Absent
R. D. Sanocki
Technical Assistant
Processing Division


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


Billy G. Stephenson
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

OA/C352:GKM

April 16, 1979

A. J. Patrick
TO: A. J. Patrick
Chief, Hydrographic Surveys Division
G. K. Myers
FROM: G. K. Myers
Chief, Quality Control Branch

SUBJECT: Quality Control Report for H-9536 (1974), Ohio, Lake Erie
(South Shore), Eastlake to Mentor Headlands

A quality control inspection of H-9536 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

The shoreline originates with reviewed photogrammetric manuscripts TP-00945, TP-00946, and TP-00947 based on 1975 photography. These surveys, unavailable at the time of verification, were subsequently applied to the smooth sheet during quality evaluation. The mean high water line is shown for guidance only; the true position is shown on the topographic surveys mentioned above.

Soundings plotted between positions 650-652, 657-658, and 662-663 at times (GMT) 000200-000340, 000920-001000, and 001640-001712, respectively, on day 205, falling in an area above mean high water at the entrance to Mentor Harbor, depicted on TP-00946 from 1975 photography were rejected during quality control. The present survey in conjunction with the accompanying topographic sheet shows the condition of the channel as it appeared in 1975. Apparently this channel is maintained by dredging as stated in Chart Letter 867 of 1977.

Drastic differences in some areas between the charted shoreline from an early survey and that which appears on the smooth sheet are noted. The changes can be mainly attributed to different methods of surveying; however, deposition of sediment particularly in the area of Mentor Harbor is evident. The visible piles charted in the immediate vicinity of latitude 41°43.7', longitude 81°21' presently fall on shore. These features should be deleted from the chart.



The shoreline features charted in the immediate vicinity of latitude $41^{\circ}44.05'$, longitude $81^{\circ}20.33'$ shown on both the 1971 and 1974 editions of chart 14825 differ in configuration with groins identified in the same location on TP-00946. These features should be charted as they appear on the present survey.

The junction with H-9537 (1974) on the east was checked during the evaluation of that survey. The adequacy of the junction with H-9535 on the west will be evaluated at the time this survey is submitted to the Hydrographic Surveys Division.

In general, the survey 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. The hydrographer's portion of the Descriptive Report for this survey refers to chart 14825 (formerly LS-34), edition dates November 5, 1971, and December 7, 1974, for comparison purposes. The Verifier's Report addresses the latter edition of the chart under the heading, "Chart Comparison." However, the dates of this survey are August to October 1974. In order to complete a discussion pertaining to charted cribs on the 1974 edition, the following item is noted.

The crib with a depth of 13 feet charted at latitude $41^{\circ}44'03''$, longitude $81^{\circ}20'59''$ was not verified or disproved by the present survey and should be retained on the chart.

2. The ruins charted in the immediate vicinity of latitude $41^{\circ}43.75'$, longitude $81^{\circ}21.93'$ on the inset of chart 14825 dated December 7, 1974, was previously shown as a pier on the 1971 edition of the chart. This feature is not mentioned by the hydrographer and does not appear on TP-00946. These ruins should be retained on the chart.

3. The 27-foot sounding charted at latitude $41^{\circ}45.6'$, longitude $81^{\circ}20.1'$ originates with the survey records. This depth was scanned to 28 feet from the bottom trace on the fathogram during quality control and subsequently reduced to a corrected sounding of 26 feet. The 27 was revised to a 26 on the smooth sheet by the quality evaluator.

4. The submerged wreck covered by depth of 16 feet charted at latitude $41^{\circ}43.8'$, longitude $81^{\circ}22.9'$ was found by a fathometer investigation on day 214 and later identified by divers on day 218 during the survey. A 17 manually plotted on the smooth sheet at this position was changed to a 16-foot depth ascertained from the survey's records during quality control. A 19-foot machine plotted sounding originally at this position was exceeded in the sounding printout by the quality evaluator.

5. A comparison with prior survey 1-2034 (1960) at a scale of 1:80,000 is not discussed in the Verifier's Report. Inasmuch as many charted off-shore depths fall in the area common to H-9536 from this reconnaissance-type survey, it was considered during quality control. Sounding lines spaced about 1 1/2 miles apart preclude any detailed comparison with the present survey. However, a determination of changes in general depths reveals the bottom configuration to have essentially remained the same.

cc:
OA/C35
OA/C351

