9586

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-10-3-75 (F.S. 14)

Office No. H-9586

LOCALITY

State OHIO

General Locality LAKE ERIE (SOUTH SHORE)

Locality VICINITY OF ASHTABULA HARBOR

1975

CHIEF OF PARTY
T. D. Kuchciak

LIBRARY & ARCHIVES

DATE August 22, 1978

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

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-9586

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 10-3-75

State Ohio

General locality ~~South Shore~~ Lake Erie (South Shore)

Locality ~~3 1/2 Miles West to 3 1/2 Miles East of~~ Vicinity of Ashtabula Harbor, ~~Ohio~~

Scale 1:10,000 ~~& 1:5,000 (Inset)~~ **Date of survey** JD 228 Aug. 16, - JD 239 ~~Sept. 5~~, 1975

Instructions dated June 1, 1975 **Project No.** OPR-300-LA-75

Vessel NOAA Launch LAIDLY (1264)

Chief of party T. D. Kuchciak

Surveyed by LSC Hydrographic Section Personnel

Soundings taken by echo sounder, hand lead, pole Digital Echo Sounder

Graphic record scaled by LSC Hydrographic Section Personnel

Graphic record checked by LSC Hydrographic Section Personnel

Protracted by N/A **Automated plot by** Calcomp-618(AMC) LSC DP-3 Complot Plotter

Verification by B.J. Stephenson (AMC)

Soundings in ~~fathoms~~ feet **at** ~~MLW~~ ~~MLLW~~ LWD ~~which for Lake Erie is~~ (568.6 ft., IGLD (1955)) (4)

REMARKS: All times are Greenwich time, unless otherwise noted as EST.

Misc. items were removed from the D.R and are filed in the cabier with the field records.

Applied to stds 10/26/78

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

☆ U.S. GPO: 1974-0-768-081/1207

Descriptive Report

To Accompany

Hydrographic Survey LA 10-3-75

Register Number: H-9586

Hydrographic Section

Chief of Party: T. D. Kuchciak

Scale 1:10,000 (1975)
~~1: 5,000 (1975) (Inset)~~

A. PROJECT

Project OPR-300-LA-75 (8 miles east of Fairport to 3 1/2 miles east of Ashtabula Harbor, Ohio) is a combined total of three surveys. The survey described herein (3rd of 3) was accomplished in accordance with Project Instructions, OPR-300-LA-75, dated June 1, 1975.

B. AREA SURVEYED

The survey was made in the inshore waters along the south shore of Lake Erie, extending from 3 1/2 miles west to 3 1/2 miles east of Ashtabula Harbor, Ohio. Also included on LA-10-3-75 sheet is an additional survey (inset) of Ashtabula Harbor at 1:5000. The inshore area surveyed extends from within the 6 foot depth contour to beyond the 40 foot depth contour and is bounded by Longitudes $80^{\circ}43'.4$ and $80^{\circ}51'.7$. The survey was started on August 16, 1975, and was completed on ~~September 5~~ Aug. 27, 1975. (See H-9767 LA 5-1-75 for Ashtabula Hbr.)

C. SOUNDING VESSEL

The NOAA Launch LAIDLY (1264) was used exclusively to accomplish the survey. Regular or deeper sounding operations performed by the LAIDLY involved position numbers 7534-9797, inclusive. Due to transmission breakdown, the close inshore or shoal water sounding areas, normally surveyed by the support skiff MONARK (1638) had to be sounded by the LAIDLY. Position fixes in these areas included numbers 4-547, inclusive.

D. SOUNDING EQUIPMENT

Sounding equipment used aboard the LAIDLY (1264) was the Raytheon 723-D Digital Depth Recorder, SN 2928. This Digital Depth Recorder operated very well during the entire period of the survey.

Soundings in the deeper waters were positioned by a conventional range-range positioning mode while the near-shore soundings were positioned by range-azimuth procedures.

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 LAIDLY (1264) by conventionally approved methods.

5. Settlement and squat tests were made on the launch LAIDLY (1264) on June 30, 1975. The tests were conducted inside the Fairport Harbor. The project depth of 25 feet was more than adequate for the tests and the harbor breakwalls provided protection from open lake sea swells. Test procedures were in accordance with recommendations in section 4.9.4 of the provisional Hydrographic Manual. A levelling instrument was set up on one of the harbor caissons and sightings taken on a level rod held on the LAIDLY with the LAIDLY traveling at the following speeds: 0 (dead), 550, 750, 1000, 1200, 1400, 1600, 1800, 2000 & 2200 RPM.

Squat Test June 30, 1975

RPM	Reading Level Rod Ft.	Corr.	TRA-Feet
0	5.82	0	2.5 (draft)
550	5.84	+.02	2.5
750	5.90	+.08	2.6
1000	5.99	+.17	2.7
1200	6.11	+.29	2.8
1400	6.10	+.28	2.8
1600	6.00	+.18	2.7
1800	5.82	0	2.5
2000	5.58	-.24	2.3
2200	5.30	-.52	2.0

E. HYDROGRAPHIC SHEETS ✓

Raw data master tapes were logged and data plotted on the boatsheet using the HYDROPLOT System aboard the LAIDLY (1264). Edited master and corrector tapes, velocity tape, and TC/TI tape were logged/generated by personnel of the LSC Hydrographic Section (CLS112) and forwarded to the Processing Division (CAM3), Atlantic Marine Center, for necessary smooth plotting. Final verification of the smooth plot will be accomplished by the Verification Branch (CAM31), AMC.

F. CONTROL STATIONS ✓

Monumented Second and Third-order control stations used in this survey and listed on the survey sheet are: ~~(035) Ashtabula LSC, 1974 (2nd order)~~; (032) Redbrook, (033) Decato, ~~(034) Abyss, (037) Gone Awry, (137) Ashtabula E BKW S.~~ End Lt., (038) Electric, (039) Bridge, ~~(045) Ashtabula Lt.~~, (123) COE 23 (3rd-order). These stations were established in 1974 by Lake Survey Center, Horizontal Control Section (CLS113) to specifications of National Geodetic Survey and in conformance with the Hydrographic Manual.

G. HYDROGRAPHIC POSITION CONTROL ✓

A Del Norte SHF electronic positioning system, operated in the range-range positioning mode, was used to control the LAIDLY (1264) during hydrographic data aquisition on sheet LA 10-3-75 H-9586 and on the included inset. Del Norte remotes with 87 degree directional antennas were set over Second and Third-order control stations as follows:

H-9586
JULIAN DAY 228 LA 10-3-75
Range 1 : B , (033) DECATO
Range 2 : D , (032) REDBROOK

DAY 230
Range 1 : B , (033) DECATO
Range 2 : D , (032) REDBROOK

DAY 231
Range 1 : A , (123) COE 23
Range 2 : D , (032) REDBROOK

DAY 231
Range 1 : B , (038) ELECTRIC
Range 2 : D , (032) REDBROOK

DAY 232
Range 1 : D , (039) BRIDGE
Range 2 : B , (038) ELECTRIC

DAY 233
Range 1 : D , (039) BRIDGE
Range 2 : B , (038) ELECTRIC

DAY 240 ~~INSET on LA 10-3-75~~
Range 1 : B , (038) ELECTRIC SEE H-9767 LA 5-1-75
Range 2 : D , (033) DECATO

DAY 241
Range 1 : B , (137) ASHTABULA E. BKW. S. END LT.
Range 2 : A , (035) ASHTABULA LSC

DAY 245
Range 1 : B , (123) COE 23
Range 2 : D , (033) DECATO

DAY 246
Range 1 : A , (035) ASHTABULA LSC
Range 2 : D , (037) GONE AWRY

DAY 247
Range 1 : A , (045) ASHTABULA LT.
Range 2 : B , (037) GONE AWRY

DAY 248
Range 1 : B , (034) ABYSS
Range 2 : A , (045) ASHTABULA LT.

A range-azimuth survey positioning mode was used to control the hydrography in shoal water and inside the "banana" area inherent in normal range-range positioning operations. One remote transponder with a directional antenna along with one transit were set over a Third-order control station as follows:

H-9586
LA 10-3-75

Julian Day 233
Range : D , (039) BRIDGE
Azimuth : Transit, (039) BRIDGE

DAY 233
Range : B , (038) ELECTRIC
Azimuth : Transit, (038) ELECTRIC

DAY 238
Range : B , (123) COE 23
Azimuth : Transit, (123) C of E 23

DAY 239
Range : B , (038) ELECTRIC
Azimuth : Transit, (038) ELECTRIC

DAY 239
Range : B , (123) COE 23
Azimuth : Transit, (123) C of E 23

DAY 245
Range : B , (123) COE 23
Azimuth : Transit, (123) C of E 23

~~INSET ON LA 10-3-75~~
SEE H-9767 LA 5-1-75

DAY 246
Range : B , (038) ELECTRIC
Azimuth : Transit, (038) ELECTRIC

Electronic control, sounding and associated HYDROPLOT equipment aboard the launch LAIDLY (1264).

Del Norte SHF Electronic Positioning System

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

HYDROPLOT System

DEC HYDROPLOT Controller	SN 76005941-0700004
DEC Computer PDP8-E (12K-Memory) (LAIDLY 1264)	SN PRO 308130
DEC Computer PDP8-E (12K-Memory) (Office Trailer)	SN PRO 3-09104
DEC High Speed Reader/Punch (LAIDLY 1264)	SN 0211123-0256239
DEC High Speed Reader/Punch (Office trailer)	SN TC04-02-14005

Left-Right Steering Indicator

Teletype ASR-33 (LAIDLY 1264)	SN 465065
Teletype ASR-33 (LAIDLY 1264)	SN 465202
Teletype ASR-33 (Office trailer)	SN 458267
Teletype ASR-33 (Office trailer)	SN 436575

Complot	DP-3/5 Plotter	SN 5279-1
Complot	DP-3/5 Plotter (Office trailer)	SN 5848-19

Sounding System

Raytheon 723D, Digital Depth Recorder SN 2928

Electronic control equipment comprising the shore stations.

Del Norte SHF Electronic Positioning System

Remote Transponder	A	SN 174
Remote Transponder	B	SN 244
Remote Transponder	C	SN 256
Remote Transponder	D	SN 264

Four Directional Antennas were marked A, B, C, and D and were used with corresponding remote transponders.

Calibration of the Del Norte SHF electronic positioning system was accomplished using Second and Third-order control stations as calibration points. Within the work area, calibration was accomplished by the use of two or more transits set up over horizontal control stations. On a given command from the launch via radio communications, true azimuth cuts or intersections were made on the master T/R transponder aboard the launch. All azimuths were radioed back to the launch for input into the PDP8-E using RK 562 calibration program. Four sets of calibrations were taken and the meaned correctors were entered into the HYDROPLOT Controller before starting hydrographic operations.

At the end of the day, four more sets of calibrations were taken and meaned. The means of the two series of calibration usually checked very closely. All series of calibrations from the same control network were meaned and applied to the corrector tape.

Performance of the Del Norte SHF electronic positioning system during the survey was excellent. No equipment malfunctions were experienced during this survey.

H. SHORELINE

Shoreline in the Ashtabula Harbor area has been provided by LSC's photogrammetry section and has been traced on the Ashtabula Harbor inset accompaning FS LA 10-3-75. H-9586 The stereo compilation of Ashtabula Harbor was produced by photogrammetric means on a Kelsh Plotter. A copy of the compilation will be enclosed with the smooth sheets.

* H-9586 Remaining shoreline on LA 10-3-75 was obtained from LSC 1970 and 1974 aerial photography with control accomplished by fitting to existing verified topographic features. Due to extensive beach erosion on the south shore of Lake Erie, it is intended to update these changes using aerial photography to be flown by NOS in 1978. (See Verifier's Report)

*See Recommendations

AREA OF PHOTOGRAPHY	YEAR FLOWN (scheduled)	YEAR COMPILED (scheduled)
Ashtabula Harbor	1974	1975
Vermillion to Fairport Harbor	1975	(1976)
Fairport to Dunkirk	(1978)	(1979)
Dunkirk to Niagara Falls	(1979)	(1980)

I. CROSSLINES ✓

Approximately 10% of the hydrographic data collected on sheet LA 10-3-75 (H-9586) resulted from crosslines. The crossline agreement with the main scheme hydro was very good at most crossings, agreeing within one foot. However, some of the other crossings agreed only to within two feet, directly attributable to the irregular lake bottom.

J. JUNCTIONS ✓

Junction with H-9585 LA 10-2-75, and F.S. 1-1870 (1948), scale 1:10,000, was very good and soundings agreed to the nearest foot.

K. COMPARISON WITH PRIOR SURVEYS

Prior Surveys in the area of the 1975 survey are:

Field Sheet No.	1-1709, 1937	Scale 1:40,000
Field Sheet No.	1-1880 (08), 1942	Scale 1: 5,000
Field Sheet No.	1-1867, 1948	Scale 1:10,000
Field Sheet No.	1-1870, 1948	Scale 1:10,000

The 1975 survey sounding line interval is 100 meters on LA 10-3-75 (H-9586) and 50 meters on the Ashtabula Harbor inset. The 1937 offshore line spacing is 800 meters. The 1942 Ashtabula Harbor Survey has a sounding line interval of 100 meters and the 1948 surveys have a sounding line interval of 175-250 meters.

The much greater density of sounding coverage in 1975 provides a more complex development of depth contour curves than do the prior surveys. However, a comparison of plotted depths in areas of common coverage shows that approximately 90% of the prior survey depths differ from the 1975 survey by no more than 0 to 2 feet.

Within the parameters of hydrographic survey H-9586 (LA 10-3-75), no uncharted buoys and obstructions were found. However, all navigational aids, obstructions and buoys were relocated at the time of the survey by conventionally approved methods. It was found that the positional accuracy of LA 10-3-75 (H-9586) survey matched reasonably well with prior survey results. It is intended that all Geographic Positions shown in this report supersede the prior positional data.

REPORT ON BUOYS AND OBSTRUCTIONS SHEET LA 10-3-75

OBJECT	DEPTH OVER	LATITUDE	LONGITUDE	DATE LOCATED
~~Southerly Crib~~	~~18~~	~~41 54 27.69~~	~~80 48 37.54~~	~~(245) 2 Sept.~~
~~Northwest Crib~~	~~19~~	~~41 54 29.91~~	~~80 48 38.66~~	~~(245) 2 Sept.~~
~~Northeast Crib~~	~~20~~	~~41 54 30.22~~	~~80 48 37.41~~	~~(245) 2 Sept.~~
~~(BC 1)~~	~~N/A~~	~~41 55 04.6~~	~~80 47 30.4~~	~~(248) 5 Sept.~~
~~(HB) 1 QK Fl G~~	~~N/A~~	~~41 54 56.9~~	~~80 47 33.8~~	~~(248) 5 Sept.~~
~~(B3) Fl G~~	~~N/A~~	~~41 54 54.4~~	~~80 47 19.0~~	~~(248) 5 Sept.~~
~~(RN 4)~~	~~N/A~~	~~41 54 48.7~~	~~80 47 24.5~~	~~(248) 5 Sept.~~
~~(BC 5)~~	~~N/A~~	~~41 54 52.3~~	~~80 46 57.6~~	~~(248) 5 Sept.~~
~~(BC 1) Junction Lighted Buoy~~	~~N/A~~	~~41 54 44.7~~	~~80 47 43.7~~	~~(248) 5 Sept.~~
~~(RN 2)~~	~~N/A~~	~~41 54 38.5~~	~~80 47 56.4~~	~~(248) 5 Sept.~~
~~South Water Intake~~	~~N/A~~	~~41 54 13.98~~	~~80 48 25.75~~	~~(230) 18 Aug.~~
~~North Water Intake~~	~~N/A~~	~~41 54 14.82~~	~~80 48 25.09~~	~~(230) 18 Aug.~~
✓Pvt Aid HBN Spar	N/A	41 53 13.4	80 51 26.4	(239) 27 Aug.
stet → ~~Union Carbide Intake Crib~~	~~23~~	~~41 55 20.67~~	~~80 45 53.58~~	~~(246) 3 Sept.~~

This crib was plotted on this survey using this G.P. even though it was located on H-9767(1975)

L. COMPARISON WITH THE CHART

Comparison with NOS Chart 14825, 18th Edition, December 1974, (formerly LS34), scale 1:80,000, and NOS Chart ~~14610~~ 14836, 21st Edition, June 1974, (formerly LS342), scale 1:5000, Ashtabula Harbor Inset. Depths agree throughout sheet LA 10-3-75. H-9586

JOB HISTORY OF ASHTABULA HARBOR

Ashtabula Harbor photo control was surveyed by CLS 113, Horizontal Control Section, June 20, 1975. All geographic positions for the Corps of Engineers channel limits for the full length of Ashtabula River were plotted for further verification of horizontal positioning. A few control points were also plotted from the U. S. Army Topographic Command, Geographic Positions computer listings.

Two (2) stereo models were compiled at a scale of 1:6000 from NOS color photography dated 20MAY74, frames Z9821 thru Z9823. This manuscript was sized and photographically enlarged to 1:5000 scale, the desired chart scale. This is a reverse from the usual procedure of reducing stereo compiled models but since control was very limited and such a small enlargement, 10 centimeters, it was felt that acceptable accuracy was maintained.

No geographic limits were plotted so that the Compilation Section in Rockville, Md. could make the determination according to the required hydrographic information.

Compilation started in Photogrammetry 7-24-75

Compilation completed 10-24-75

PROJECT LIMIT TURNING POINTS

ASHTABULA HARBOR

L

001 440 7 41 54 19258 080 47 53205 011 0000 000000

002 441 7 41 54 19245 080 47 55321 011 0000 000000

003 469 7 41 54 32091 080 47 55431 011 0000 000000

004 399 7 41 54 38470 080 47 56465 011 0000 000000

005 403 7 41 54 42534 080 48 02134 011 0000 000000

006 402 7 41 55 03804 080 47 45631 011 0000 000000

007 415 7 41 55 10786 080 47 41749 011 0000 000000

008 408 7 41 55 10679 080 47 33232 011 0000 000000

009 420 7 41 55 08383 080 47 30580 011 0000 000000

010 485 7 41 55 04496 080 47 30581 011 0000 000000

011 479 7 41 54 54479 080 47 19015 011 0000 000000

012 480 7 41 54 54475 080 46 59912 011 0000 000000

013 481 7 41 54 52665 080 46 57415 011 0000 000000

014 482 7 41 54 42618 080 46 57420 011 0000 000000

015 483 7 41 54 42623 080 47 17553 011 0000 000000

016 495 7 41 54 48757 080 47 24634 011 0000 000000

017 419 7 41 54 44640 080 47 26620 011 0000 000000

018 428 7 41 54 44758 080 47 39527 011 0000 000000

019 426 7 41 54 46540 080 47 42210 011 0000 000000

020 423 7 41 54 44795 080 47 43564 011 0000 000000

021 406 7 41 54 42203 080 47 39661 011 0000 000000

022 404 7 41 54 41273 080 47 36540 011 0000 000000

023 436 7 41 54 41257 080 47 34813 011 0000 000000

024 416 7 41 54 37372 080 47 34815 011 0000 000000

025 418 7 41 54 41156 080 47 46674 011 0000 000000

026 432 7 41 54 39330 080 47 53377 011 0000 000000

*

LOCAL COORDINATES → GL GRID (I) → G.P.
PROJECT LIMITS INSIDE ASHTABULA HARBOR

CONVERSION OF LOCAL GRID TO STATE GRID

Description of job: Ashtabula Harbor--conversion of local harbor coordinates to Great Lakes Zone 1

TRANSFER POINT: Pt 28: Inner Breakwater Light
Local coordinates: X= 5489.960, Y= 11032.060
State coordinates: X= 1302002.553, Y= 87529.921

Scale factor: .304800000
Rotation angle: -1.930000000 degrees

	Local coordinates X	Local coordinates Y	GL GRID (I) [redacted] coordinates X	GL GRID (I) [redacted] coordinates Y
496	4405.560	9760.590	1301659.163	87153.728
e	.000	.000	1300216.916	84225.612
E	4327.260	10406.190	1301641.938	87351.199
403	3898.590	10817.540	1301515.576	87480.908
402	5145.920	12970.630	1301917.648	88123.993
415	5439.270	13677.390	1302014.266	88336.280
408	6083.150	13666.670	1302210.299	88326.405
420	6283.680	13434.290	1302269.000	88253.557
485	6283.680	13040.880	1302264.962	88133.714
479	7158.360	12027.240	1302521.008	87815.953
480	8602.600	12027.240	1302960.963	87801.127
481	8791.490	11844.110	1303016.624	87743.402
482	8791.490	10827.240	1303006.185	87433.636
483	7269.260	10827.240	1302542.473	87449.262
495	6733.680	11447.910	1302385.692	87643.833
419	6583.680	11031.180	1302335.720	87518.425
428	5607.780	11042.960	1302038.556	87532.031
426	5404.900	11223.280	1301978.604	87589.044
423	5302.580	11046.650	1301945.621	87536.289
406	5597.720	10784.320	1302032.836	87453.346
404	5833.760	10690.210	1302103.774	87422.255
436	5964.260	10688.630	1302143.512	87420.434
416	5964.260	10295.390	1302139.475	87300.642
418	5067.540	10678.210	1301870.240	87426.464
432	4560.740	10493.260	1301713.956	87375.326

CONVERSION OF LOCAL GRID TO STATE GRID

Description of job: Ashtabula Harbor, conversion of local harbor coordinates to State coordinates

TRANSFER POINT: Pt. 28: Inner Breakwater Light
Local coordinates: X= 5489.960, Y= 11032.060
State coordinates: X= 1302002.553, Y= 87529.921

Scale factor: .304800000
Rotation angle: -1.930000000 degrees

	Local coordinates		G.L. GRID (I) State coordinates	
	X	Y	X	Y
440	4574.120	8461.680	1301697.177	86756.314
441	4414.120	8460.530	1301648.425	86757.607

CONVERSION OF GREAT LAKES GRID SYSTEM TO GEODETIC COORDINATES PROJECT LIMITS INSIDE ASHTABULA HARBOR

Zone 1: Lakes Erie and Ontario, St. Lawrence River

Name of station	Great Lakes Grid System X	Y	Latitude	Longitude	Scale factor	Convergence angle
469	1301659.163	87153.728	41°54'32".0912	80°47'55".4311	.9999409	-1°55'14".3
E	1301641.938	87351.199	41°54'38".4697	80°47'56".4653	.9999406	-1°55'14".9
403	1301515.576	87480.908	41°54'42".5344	80°48'02".1341	.9999404	-1°55'18".7
402	1301917.648	88123.993	41°55'03".8043	80°47'45".6311	.9999399	-1°55'07".5
415	1302014.266	88336.280	41°55'10".7863	80°47'41".7488	.9999398	-1°55'04".8
408	1302210.299	88326.405	41°55'10".6790	80°47'33".2317	.9999399	-1°54'59".1
420	1302269.000	88253.557	41°55'08".3826	80°47'30".5799	.9999401	-1°54'57".3
485	1302264.962	88133.714	41°55'04".4958	80°47'30".5811	.9999402	-1°54'57".4
479	1302521.008	87815.953	41°54'54".4791	80°47'19".0151	.9999408	-1°54'49".6
480	1302960.963	87801.127	41°54'54".4746	80°46'59".9123	.9999411	-1°54'36".8
481	1303016.624	87743.402	41°54'52".6646	80°46'57".4147	.9999413	-1°54'35".1
482	1303006.185	87433.636	41°54'42".6182	80°46'57".4195	.9999416	-1°54'35".1
483	1302542.473	87449.262	41°54'42".6230	80°47'17".5528	.9999412	-1°54'48".7
495	1302385.692	87643.833	41°54'48".7566	80°47'24".6343	.9999409	-1°54'53".4
419	1302335.720	87518.425	41°54'44".6397	80°47'26".6198	.9999410	-1°54'54".8
428	1302038.556	87532.031	41°54'44".7584	80°47'39".5273	.9999407	-1°55'03".5
426	1301978.604	87589.044	41°54'46".5403	80°47'42".2102	.9999406	-1°55'05".3
423	1301945.621	87536.289	41°54'44".7955	80°47'43".5640	.9999406	-1°55'06".2
406	1302032.836	87453.346	41°54'42".2031	80°47'39".6611	.9999408	-1°55'03".6
404	1302103.774	87422.255	41°54'41".2729	80°47'36".5395	.9999409	-1°55'01".5
436	1302143.512	87420.434	41°54'41".2570	80°47'34".8134	.9999409	-1°55'00".3

[continued]

PROJECT LIMITS INSIDE ASHTABULA HARBOR.

	Name of station	Great Lakes Grid System X	Y	Latitude	Longitude	Scale factor	Convergence angle
416		1302139.475	87300.642	41°54'37".3718	80°47'34".8147	.9999411	-1°55'00".4
418		1301870.240	87426.464	41°54'41".1558	80°47'46".6736	.9999407	-1°55'08".3
432		1301713.956	87375.326	41°54'39".3295	80°47'53".3771	.9999406	-1°55'12".8

CONVERSION OF GREAT LAKES GRID SYSTEM TO GEODETIC COORDINATES

Zone 1: Lakes Erie and Ontario, St. Lawrence River

Name of station	Great Lakes Grid System X	Y	Latitude	Longitude	Scale factor	Convergence angle
440	1301697.177	86756.314	41°54'19".2579	80°47'53".2047	.9999414	-1°55'12".8
441	1301648.425	86757.607	41°54'19".2469	80°47'55".3207	.9999413	-1°55'14".3

M. ADEQUACY OF SURVEY

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

N. AIDS TO NAVIGATION

Within the limits of this survey there are eight floating aids-to-navigation maintained by U. S. Coast Guard which collectively adequately serve their intended purpose and are listed in the 1975 Great Lakes Light List.

O. STATISTICS

Vessel LAIDLY 1264

~~543~~ ~~Total number of inshore positions (RA).~~

~~2263~~ 1516 Total number of offshore positions (RR). (H-9586)

411 Statute miles of sounding line.

14 Square statute miles of sounding.

~~0~~ 84 Bottom samples were taken. (No bottom samples taken due to termination of 1975 field operations. Bottom samples will be taken in May, 1976 during the Hydrographic field season.)

DAY	STATUTE MILES	POSITION	POSITIONING SYSTEM	SCALE
(228) Aug 16, 75	52	7534-7727	RR	1:10,000
(230) Aug 18, 75	13	7728-7773	RR	1:10,000
(231) Aug 19, 75	103	7774-8193	RR	1:10,000
(232) Aug 20, 75	81	8194-8500	RR	1:10,000
233) Aug 21, 75	30	8501-8618	RR	1:10,000
		4-122	RA	
(238) Aug 26, 75	7	123-194	RA	1:10,000
(239) Aug 27, 75	12	195-370	RA	1:10,000
~~(240) Aug 28, 75~~	~~44~~	~~8619-9011~~	~~RR~~	~~1: 5,000~~
(241) Aug 29, 75	28	9012-9245	RR	1: 5,000
(245) Sep 2, 75	10	9278-9417	RR	1: 5,000
		371-417	RA	
(246) Sep 3, 75	13	9421-9499	RR	1: 5,000
		418-547	RA	
(247) Sep 4, 75	8	9500-9646	RR	1: 5,000
~~(248) Sep 5, 75~~	~~10~~	~~9647-9797~~	~~RR~~	~~1: 5,000~~

P. MISCELLANEOUS

No Input

Q. RECOMMENDATIONS

H-9586

It is recommended that survey LA-10-3-75, which includes large scale densified coverage of Ashtabula Harbor, be considered completed and acceptable for smooth plotting and verification. It should be noted that contemporary stereocompiled shoreline information within the reach of this survey as defined by the sheet parameters, with the exception of the Ashtabula Harbor inset, was not available. The shoreline depiction shown was obtained from print by print inspection of recent aerial photography with control obtained by a visual fit to existing verified charted topography and prominent landmark features. The shoreline in the area of the Ashtabula Harbor was obtained from controlled stereocompilation procedures. It is believed that the shoreline depiction throughout this survey satisfied prescribed allowable error accuracies at a scale of 1:10,000 and should supersede all prior shoreline depictions until new controlled stereocompiled surveys can be completed by NOS in the future.

R. AUTOMATED DATA PROCESSING

PROGRAM NAME	NUMBER	VERSION DATE
Range-Range Real Time	RK 111	8/7/74
Grid Lattice Plot	AM 201	11/10/72
Grid Signal & Lattice Plot	RK 201	2/19/75
Visual Station Plot	AM 202	
Range-Range Non Real Time	RK 211	8/16/74
Range Azimuth Pos. & Sndg. Plot	RK 216	2/14/75
Visual Station Table Marker	AM 301	8/12/74
Geodetic Inverse	AM 407	
Geodetic Inverse/Dir. Pos. Comp.	RK 407	8/15/74
Direct Geodetic Comp.	AM 408	
Geodetic Utility Package	RK 409	9/5/73
* H/R Geodetic Calibration	RK 562	2/19/75
Elinore Line Editor	AM 602	3/10/72
Tape Duplicator	RK 606	8/22/74
Binary Tape Duplicator	RK 610	9/19/73
Unscrambler	RK 337	8/8/74

S. REFERENCE TO REPORTS

None.

* H/R means HYPERBOLIC/RANGE-RANGE

CPR 300-LA-75

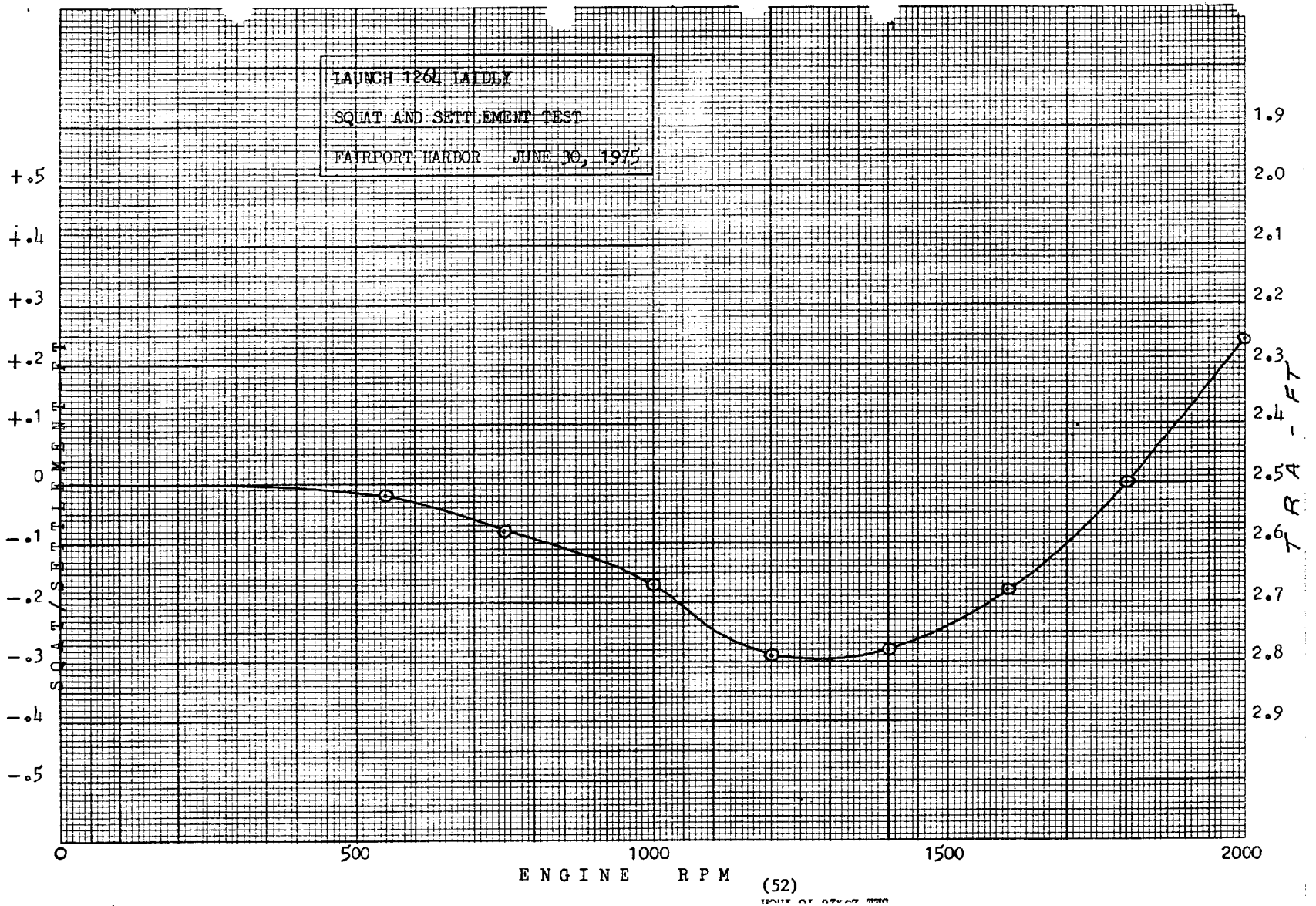
SOUNDING CORRECTION ABSTRACT

VESSEL LAIDLY 1264 (See Q.C. Report - item 3)

FIELD NO. LA 10-3-75

REGISTRY NO. H- 9586

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.	Stage Corr.	~~TRA~~ Corr. ft/~~fms~~	Remarks
228	2017	2035	-	2.5	-	0	-3.7	-1.2	
230	2035	2055	-	2.5	-	0	-3.7	-1.2	
231	0100	0125	-	2.5	-	0	-3.6	-1.1	
232	2350	0010	-	2.5	-	0	-3.6	-1.1	
238	1330	1345	-	2.5	-	0	-3.6	-0.9	
239	2320	2340	-	2.5	-	0	-3.8	-1.0	
~~246~~	~~1545~~	~~1600~~	~~-~~	~~2.5~~	~~-~~	~~0~~	~~-4.0~~	~~1.2~~	SEE H-9767
~~248~~	~~1835~~	~~1850~~	~~-~~	~~2.5~~	~~-~~	~~0~~	~~3.9~~	~~-1.1~~	"


LAUNCH 1264 LAIDLY
SQUAT AND SETTLEMENT TEST
FAIRPORT HARBOR JUNE 30, 1975
+.5
+.4
+.3
+.2
+.1
0
-.1
-.2
-.3
-.4
-.5
SQUAT & SETTLEMENT - FEET
0
500
1000
1500
2000
ENGINE RPM
1.9
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
TRIM - FT

LIST OF SIGNALS

001	001	7	41	54	27692	080	48	37545	108	0000	000000	SOUTHERLY CRIB
002	002	7	41	54	29907	080	48	38662	108	0000	000000	NORTHWEST CRIB
003	003	7	41	54	30215	080	48	37410	108	0000	000000	NORTHEAST CRIB
004	011	7	41	55	04620	080	47	30410	256	0000	000000	(BC 1)
005	552	7	41	54	56880	080	47	33800	216	0000	000000	(HB) 1 QK FL G
006	553	7	41	54	54440	080	47	19010	258	0000	000000	(B3) FL G
007	004	7	41	54	48690	080	47	24490	255	0000	000000	(RN 4)
008	005	7	41	54	52310	080	46	57640	256	0000	000000	(BC 5)
009	111	7	41	54	44690	080	47	43690	256	0000	000000	(BC 1)JUNCTION LIGHTED BUOY
010	002	7	41	54	38470	080	47	56420	255	0000	000000	(RN 2)
011	004	7	41	54	14825	080	48	25092	235	0000	000000	NORTH WATER INTAKE
012	005	7	41	54	13983	080	48	25746	235	0000	000000	SOUTH WATER INTAKE
013	548	7	41	54	50548	080	46	12518	070	0005	000000	POWERHOUSE BKW LIGHT
014	032	7	41	53	04449	080	51	20561	250	0000	000000	REDBROOK LSC, 1974
015	033	7	41	53	38863	080	49	38923	250	0000	000000	DECATO LSC, 1974
016	034	7	41	54	41181	080	48	04698	250	0000	000000	ABYSS LSC, 1974
017	035	7	41	55	06550	080	47	45211	250	0016	000000	ASHTABULA LSC, 1974
018	036	7	41	55	11403	080	47	41648	139	0000	000000	E COE 11
019	137	7	41	54	47817	080	46	47869	250	0000	000000	ASHTABULA E BKW SOUTH END LIGHT
020	037	7	41	54	47741	080	46	47835	250	0000	000000	GONE AWRY LSC, 1974
021	038	7	41	54	45320	080	46	11500	250	0000	000000	ELECTRIC LSC, 1974
022	039	7	41	55	19090	080	42	49448	250	0000	000000	BRIDGE LSC, 1974
023	045	7	41	55	06587	080	47	45258	250	0016	000000	ASHTABULA LIGHT
024	123	7	41	54	09546	080	48	29195	250	0000	000000	COE 23
025	555	7	41	54	32928	080	47	56587	139	0011	000000	ASHTABULA WEST PIER LIGHT FR
026	554	7	41	54	44650	080	47	41085	139	0007	000000	ASHTABULA INNER BREAKWATER LT.
027	551	7	41	55	11469	080	47	32661	139	0014	000000	ASHTABULA EAST BKW LT. FL G
028	550	7	41	55	11633	080	47	41586	139	0014	000000	ASHTABULA WEST PIERHEAD LT. FR
029	102	7	41	53	13432	080	51	26413	212	0000	000000	PVT AID HBN SPAR
030	104	7	41	55	20673	080	45	53579	108	0000	000000	UNION CARBIDE INTAKE CRIB

*

8. LANDMARKS FOR CHARTS

Within the coastal reach of hydrographic survey H-9586 no suitable navigation landmarks, other than those currently charted, were observed.

APPROVAL SHEET TO ACCOMPANY
HYDROGRAPHIC SURVEY H-9586

The acquisition of hydrographic data represented on sheet LA 10-3-75 (and inset) was entirely accomplished under my supervision in the field. The Descriptive Report was prepared by Jerome M. Nahas.

About 20% of the subsequent data processing accomplished at the Lake Survey Center was also supervised by me. The remaining 80% of the data processing was accomplished by the Hydrographic Section personnel under the direct supervision of Jerome M. Nahas.

The hydrographic survey is considered to be complete and adequate to supersede previous surveys in the same area.

Approved and Forwarded,

Teddy D. Kuchciak
Chief, Hydrographic Section

TC/TI GRAPHIC OBSERVATIONS S/B 1264 (LAIDLY)

P + N = True depth (Ft.)

N = Digital Instrument Mean + Draft

P = Digital Instrument Corrector

BAR CHECK DATA

TRUE DEPTH	P	N
5	-	-
10	0.0	10.0
15	+0.1	14.9
20	+0.2	19.8
25	+0.3	24.7
30	+0.4	29.6
35	+0.5	34.5
40	+0.7	39.3
45	+0.9	44.1
50	+0.9	49.1
55	+0.9	54.1

VELOCITY ABSTRACT (Scaled off graph)

DEPTH	CORRECTION
0.0 - 5.6	-0.2
5.7 - 14.3	0.0
14.4 - 23.1	+0.2
23.2 - 31.8	+0.4
31.9 - 40.6	+0.6
40.7 - 49.3	+0.8
49.4 - 9999	+1.0

VELOCITY TABLE 1 LA10-3-75 (FS - 14)

000056 1 0002 001 000 126400 009586
000143 0 0000
000231 0 0002
000318 0 0004
000406 0 0006
000493 0 0008
999999 0 0010

TC/TI TAPE TABLE 1

154218 0 0000 0001 228 1264 001975

*All measurements and corrections are in feet.

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

WATER LEVEL NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center: CAM-3

Hourly heights are approved for

Water Level Station Used: Ashtabula, Ohio (906-3048)

Period: August 16, 1975 to September 5, 1975

HYDROGRAPHIC SHEET: H-9586

OPR- 300

Locality: Lake Erie

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

Remarks:

Philip C. Morris 7-19-78
Chief, Water Level Section

Don M. Callum
Chief, Tides & Water Levels Branch

NOAA Form 77-11 (11-72) U.S. GOVERNMENT PRINTING OFFICE: 1974-665-372/1044 Region 6

DIGITAL INSTRUMENT CORRECTION

Vessel No 1264
F.S. No 14

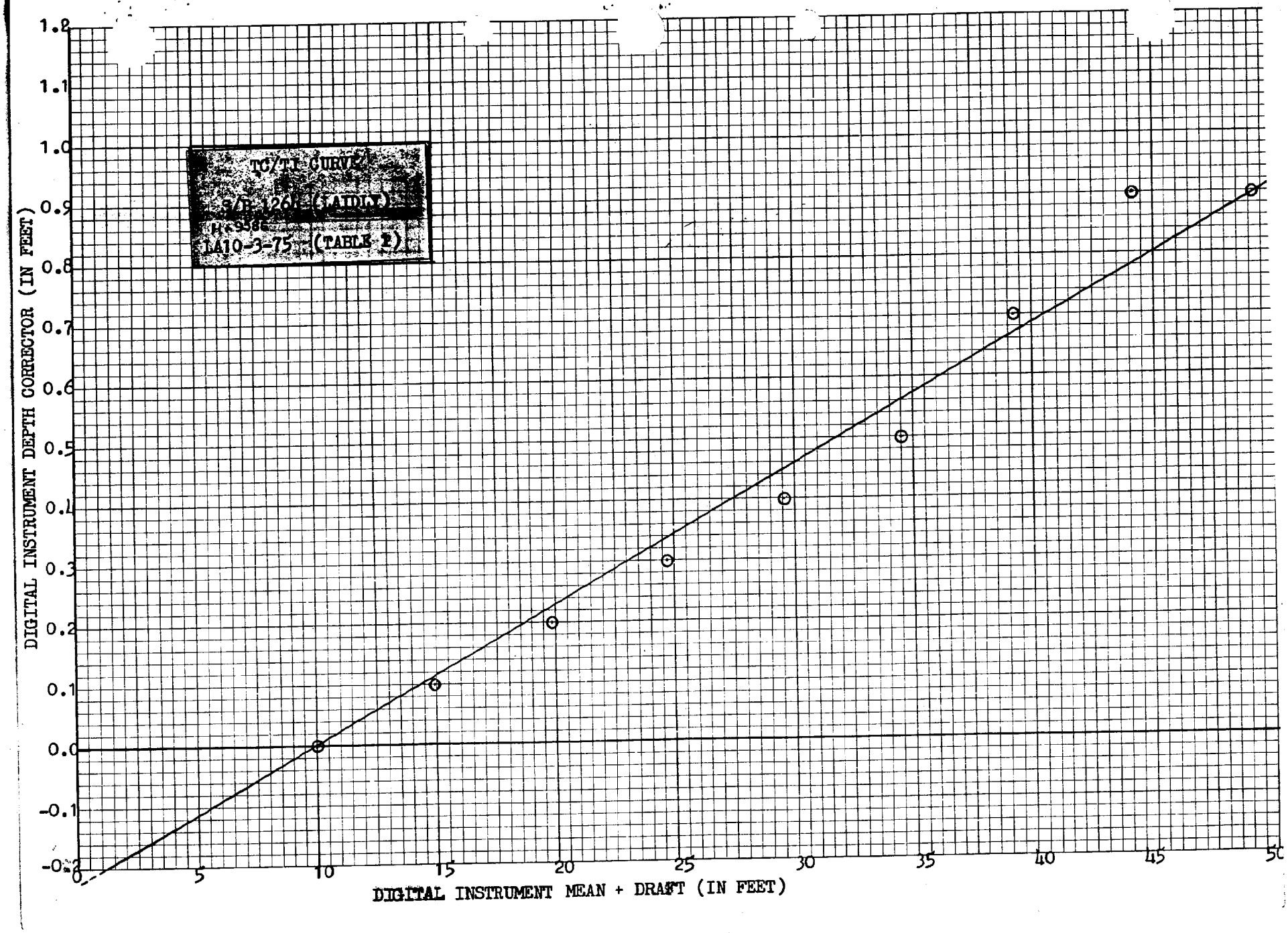
Scale 1:10,000
Type of Survey RA/RA
Ashtabula, Harbor

True Depth	Day No 228	Day No 230	Day No 231	Day No 232	Day No 238	Day No 239	Day No 246	Day No 248	
5.0 ft.	—	—	—	—	—	—	—	—	
10.0 ft.	0.0	-0.1	+0.1	-0.1	0.0	+0.1	+0.1	+0.1	
15.0 ft.	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.1	+0.2	
20.0 ft.	+0.3	+0.1	+0.3	+0.1	+0.1	+0.3	+0.3	+0.3	
25.0 ft.	+0.4	+0.3	+0.3	+0.3	+0.3	+0.3	+0.3	+0.4	
30.0 ft.	+0.4	+0.5	+0.5	+0.4	+0.4	+0.4	+0.5	+0.5	
35.0 ft.	+0.7	+0.5	+0.5	+0.5	+0.5	+0.5	+0.5	+0.6	
40.0 ft.	+0.7	+0.7	+0.7	+0.7	+0.7	+0.7	+0.7	+0.7	
45.0 ft.	+0.9	+0.7	+0.7	+0.9	+0.9	+0.8	+0.7	+0.8	
50.0 ft.	+0.9	+0.9	+0.9	+0.9	+0.9	+0.9	+0.9	+0.9	
55.0 ft.				+0.9	+0.9	+1.0	+0.9	+1.0	

True Depth	Day No	Day No	Day No	Day No	Day No	Day No	Day No	Day No	
5.0 ft.									
10.0 ft.									
15.0 ft.									
[illegible] ft.									
[illegible] ft.									
30.0 ft.									
35.0 ft.									
40.0 ft.									
45.0 ft.									
50.0 ft.									

Means	5.0 ft.	10.0 ft.	15.0 ft.	20.0 ft.	25.0 ft.	30.0 ft.	35.0 ft.	40.0 ft.	45.0ft.
	-	0.0	+0.1	+0.3	+0.4	+0.4	+0.7	+0.7	+0.9
		-0.1	+0.1	+0.1	+0.3	+0.5	+0.5	+0.7	+0.7
		+0.1	+0.1	+0.3	+0.3	+0.5	+0.5	+0.7	+0.9
		-0.1	+0.1	+0.1	+0.3	+0.4	+0.5	+0.7	+0.9
		0.0	+0.1	+0.1	+0.3	+0.4	+0.5	+0.7	+0.9
		+0.1	+0.1	+0.3	+0.3	+0.4	+0.5	+0.7	+0.9
		+0.1	+0.1	+0.3	+0.3	+0.3	+0.5	+0.7	+0.9
		+0.1	+0.2	+0.3	+0.4	+0.4	+0.6	+0.7	+0.9
Σ		+0.2	+0.9	+1.8	+2.6	+3.3	+4.3	+5.6	+7.0
Mean=		0.0	+0.1 ✓	+0.2 ✓	+0.3 ✓	+0.4 ✓	+0.5 ✓	+0.7 ✓	+0.9 ✓
	50.0 ft.				55.0 ft.				
	.09	.09	Σ=7.2			0.9	Σ=4.7		
	.09	.09	Mean=0.9			1.0	Mean=~~+0~~	+0.9	
	.09	.09				0.9			
	.09	.09			0.9	1.0			

Computed by [illegible]
Checked by R. Bazeli


TC/TI CURVE
SAP 126 (LAIDLY)
LA10-3-75 (TABLE 2)
DIGITAL INSTRUMENT DEPTH CORRECTOR (IN FEET)
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
0
5
10
15
20
25
30
35
40
45
50
DIGITAL INSTRUMENT MEAN + DRAFT (IN FEET)

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

C3421/W

May 11, 1977

TO: Robert C. Munson, RADM, NOAA
Director, Atlantic Marine Center, CAM

FROM: Richard H. Houlder
Associate Director
Office of Marine Surveys and Maps, C3

SUBJECT: Letter Dated April 21, 1977, "Disposition of 1974-1976 Lake Survey Surveys"

Coastal mapping project CM-7510, now in progress, will be completed by the end of calendar year 1977. T-sheet manuscripts compiled from 1975 aerial photography will make shoreline information available for the first three (3) H-sheets listed in the subject letter.

The compilation scale is 1:10,000 except for Fairport Harbor which is 1:5,000. These six (6) T-sheets will be adequate for hydrographic manuscript shorelines.

No other coastal mapping projects are scheduled covering the subject areas at this time.

Atlantic Marine Center

File No: D7-1
Ser. No: 77-38

April 21, 1977

CAM3/RAT

TO: CAPT Richard H. Houlder
Associate Director, Marine Surveys and Maps, C3

FROM: Robert C. Munson, RADM, NOAA
Director, Atlantic Marine Center, CAM

SUBJECT: Disposition of 1974-1976 Lake Survey Surveys

There are no shoreline manuscripts available for the following surveys:

H-9535	HSB-10-1-74
H-9536	HSB-10-2-74
H-9537	HSB-10-3-74
H-9538	LA-10-4-74*
H-9584	LA-10-1-75*
H-9585	LA-10-2-75*
H-9586	LA-10-3-75*
H-9654	HSB-10-1-76*
H-9655	HSB-10-2-76
H-9657	HSB-5-1-76
H-9658	HSB-5-2-76

Shoreline is not anticipated for some time. All surveys are in Lake Erie and more will be completed this season without shoreline. Therefore, I have instructed CAM3 to consider these surveys complete and process accordingly. Brown shoreline derived from the nautical chart will be applied where appropriate.

*Presently in the AMC processing system

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-9586

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	
ASHTABULA										1
LAKE ERIE										2
										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
						APPROVED				17
						Chas. E. Harrington				18
						CHIEF GEOGRAPHER			C3x8	19
						25 Sept. 1978				20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

* U.S. G.P.O. 1972-769-565/516 REG.#6

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

HYDROGRAPHIC SURVEY STATISTICS

H-9586

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

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

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

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	AMOUNTS: VERIFICATION	AMOUNTS: TOTALS
POSITIONS ON SHEET			1516
POSITIONS CHECKED		150	
POSITIONS REVISED		8	
SOUNDINGS REVISED		38	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	8		
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS		45	
VERIFICATION OF SOUNDINGS		58	
COMPILATION OF SMOOTH SHEET		13	
APPLICATION OF TOPOGRAPHY		2	
APPLICATION OF PHOTOBATHYMETRY		NA	
JUNCTIONS		3	
COMPARISON WITH PRIOR SURVEYS & CHARTS		3	
VERIFIER'S REPORT		3	
OTHER			
TOTALS	8	127	135

Pre-Verification by F. L. Saunders	*Beginning Date* 06/17/76	*Ending Date* 06/17/76
Verification by K. R. Ainsley, B. J. Stephenson	*Beginning Date* 05/15/77	*Ending Date* 07/14/78
Verification Check by G. F. TRefethen	*Time (Hours)* 4	*Date* 07/17/78
Marine Center Inspection by Hydrographic Inspection Team (AMC)	*Time (Hours)* 6	*Date* 07/18/78
Quality Control Inspection by K.W. Wellman	*Time (Hours)* 4.5	*Date* 9-25-78
Requirements Evaluation by D.J. Hill	*Time (Hours)* 2	*Date* 10/19/78

Survey: JG Myers 10/11/78 Ltr

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-9586

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 12-6-82 TIME REQUIRED_____ INITIALS JAC

REMARKS:

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9586 FIELD NO. LA-10-3-75

Ohio, South Shore of Lake Erie, Three and one-half miles west to Three and one-half miles east of Ashtabula Harbor

SURVEYED: August 16 through August 27, 1975

SCALE: 1:10,000 PROJECT NO.: OPR-300

SOUNDINGS: Raytheon 723D CONTROL: Del-Norte (Range-Range) (Range-Azimuth)

Chief of Party ..... T. D. Kuchciak
Surveyed by ..... T. D. Kuchciak
Automated Plot by ..... CALCOMP-618 Plotter (AMC)
Verified and Inked by ..... B. J. Stephenson
July 18, 1978

1. Introduction

a. Ashtabula Harbor, a 1:5,000 inset which was originally part of this survey, was assigned registry number H-9767 (LA-5-1-75) and the records separated.

b. The projection parameter was revised and notes added in red to the Descriptive Report during the verification.

c. The bottom samples were taken in 1976 and made part of this survey.

2. Control and Shoreline

a. The control is adequately described in Sections F and G of the Descriptive Report; however, the Verification Branch was unable to obtain Form 76-39 to document third order triangulation stations as required in Section 3.1.1.3 of the Hydrographic Manual. The only information available to the verifier is contained in Section F and the list of signals in the Descriptive Report. (See Q.C. Report-item 1)

b. The shoreline was transferred to the smooth sheet in brown from charts 14825 and 14836 for orientation purposes only. (See approval letter in Descriptive Report.) (See Q.C. Report-item 2)

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 better delineate the bottom configuration and conform with chart 14825.

c. The development of the bottom configuration and the investigation of least depths is considered adequate except as follows:

(1) The 2-foot sounding charted at 41° 55' 03.00", 80° 45' 47.85" should have been verified or disproved.

(2) The rock awash charted at 41° 53' 50.24", 80° 49' 16.07" should have been verified or disproved.

(3) Since the support skiff Monark (1638) was not available for the close inshore work during this survey, the Marine Charts Division, C32, may consider retaining some of the soundings on the chart originating with the prior surveys. It is the opinion of the verifier that they would not improve the chart, so the soundings were not brought forward to the smooth sheet.

4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records, and reports are adequate and conform to the requirements of the Hydrographic Manual except as noted below:

a. Sounding volumes were not submitted with the present survey as per Section 4.8.3.1 of the Hydrographic Manual.

b. In order to comply with the required sheet size, (Section 1.2.4 of the Hydrographic Manual) the 1:5,000 inset of Ashtabula Harbor was assigned registry number H-9767 (1975) LA-5-1-75 and made a separate survey.

c. (See Q.C. Report-item 3)

5. Junctions

Adequate junctions were effected with the following surveys:

H-9654 (1976) to the east (See Q.C. Report-item 4)
H-9585 (1975) to the west

The junction between ~~with~~ H-9586 (1975) and H-9767 (1975) will be effected at the time of verification of H-9767 (1975).

6. Comparison With Prior Surveys

1-1709	(1937)	1:40,000	← 1-1711 (1937) 1:10,000; 1-1791 (1940) 1:20,000; 1-1808 (1942) 1:5,000
1-1867	(1948)	1:10,000	
1-1870	(1948)	1:10,000	(See Q.C. Report-item 7)
1-2037	(1960)	1:80,000	

These surveys cover the area of the present survey. A comparison reveals a variable pattern of depth differences of ± 1 to 3 feet, with scattered indications of stable areas. These differences are attributed to survey methods and natural changes. Except for the following additions from 1-1867 (1948) and 1-1870 (1948), the present survey is adequate to supersede the prior surveys in the common areas.

Prior Survey	Addition	Approximate Location
1-1867	Rock awash	41°53'50.24"N 80°49'16.07"W
1-1870	2-foot sounding	41°55'03.00"N 80°45'47.85"W

7. Comparison With Chart 14825 (18th Edition, December 7, 1974)

a. Hydrography

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

Attention is directed to the following:

(1) The crib charted at 41° 55' ~~09~~ 22" N, 80° 45' 5~~4~~ 6" W was located at 41° 55' 20.67" N, 80° 45' 53.58" W, which is approximately ~~150~~ 100 meters SSE of the charted location. The chart should be revised accordingly. If the crib was relocated the Marine Chart Division, C32, should be concerned about the disposition of the remains of the old crib. Source not available at the Atlantic Marine Center. (See Q.C. Report-item 8)

(2) The least depth of 35 feet at the dumping ground located at 41° 56.5' N, 80° 46.0' W should be revised to 41 feet. (See Q.C. Report-item 9)

(3) and (4) (See Q.C. Report-item 10)

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

b. Aids to Navigation

There is only one private aid located on the present survey and it adequately serves the purpose intended. The majority of the aids will appear on H-9767 (1975).

8. Compliance With Instructions

This survey complies with the project instructions.

9. Additional Field Work

This is an adequate basic survey. Additional field work is not recommended.

Inspection Report
H-9586

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

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

ABSENT
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/KWW

September 25, 1978

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

THRU: Chief, Quality Control Branch

FROM: K. W. Wellman
Quality Evaluator

SUBJECT: Quality Control Report for H-9586 (1975), Ohio, Lake Erie (South Shore), Vicinity of Ashtabula Harbor

A quality control inspection of H-9586 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, sounding line crossings, smooth plotting, shoreline transfer, verifier's decisions and actions, and cartographic presentation of data.

In general, the present survey was found to conform to National Ocean Survey standards and requirements except as discussed in the Verifier's Report, the HIT Report, and as follows:

1. Section 2 of the Verifier's Report is supplemented by the following:

. . . in the Descriptive Report. Such signals have nevertheless been symbolized as triangulation stations on the smooth sheet. Formal documentation of acceptance of these stations by the National Geodetic Survey is not presently available to the verifier. It is assumed, however, that the necessary records and computations will eventually be submitted to the National Geodetic Survey. Ultimately, therefore, it is expected that the triangulation station status of the control stations will be validated.

2. Reference section 2 of the Verifier's Report:

It appears that the shoreline on the present smooth sheet originates with the boat sheet of the present survey rather than the chart as stated in the Verifier's Report. This may account for the shoreline discrepancy noted in item 4 below.

3. Section 4 of the Verifier's Report is supplemented by the following:

c. Reference the Sounding Correction Abstract included in the Descriptive Report:

The addition of the tide stage in the referenced abstract is considered inappropriate and is not used in determining the final TRA corrector. As a result, approved TRA correctors in the final sounding printout are at variance with those shown in the Sounding Correction Abstract.

4. Reference section 5 of the Verifier's Report:

All of the depth curves were not in coincidence in the junctional area between the present survey and H-9654 (1976) on the east. Further, a shoreline discrepancy of approximately 30 meters was noted in the overlap area. Despite the fact that the shoreline is shown for orientation purposes only, it should be in agreement on both smooth sheets. Since the shoreline is shown for orientation purposes only, no revisions were effected during quality control inspection.

5. The marked chart used during verification was not forwarded with the survey records. (See section 8.3 of the Hydrographic Manual - Fourth Edition.)

6. Geographic names should have been lettered "lightly in pencil" on the smooth sheet during verification. They were added to the smooth sheet during quality control inspection. (See section 7.3.12.3 of the Hydrographic Manual - Fourth Edition.)

7. Reference section 6 of the Verifier's Report:

Three additional prior surveys are not included in the referenced section of the Verifier's Report. These surveys should have been referenced as prior surveys in section K of the Descriptive Report, thereby indicating the necessity of effecting comparisons during the verification of the present survey. The referenced section of the Verifier's Report was annotated and appropriate comparisons accomplished during the quality control inspection. The comparisons revealed depth differences to be generally as described in the referenced section of the Verifier's Report.

8. Section 7 a (1) of the Verifier's Report is supplemented by the following:

The charted crib is considered to originate with prior survey 1-1870 (1948). The crib was transferred to the prior survey from a plant layout blueprint and may have been displaced during transfer. The present survey shows no indication of the crib or submerged ruins in the charted position. The chart should be revised to agree with the present survey.

9. Section 7 a (2) of the Verifier's Report is superseded by the following:

The dumping ground with an indicated least depth of 35 feet charted in the vicinity of latitude 41°56.50', longitude 80°46.00' originates with prior survey 1-1791 (1940). The present survey shows a least depth of 41 feet in the vicinity. The charted least depth is considered misleading since the source document only indicates that the area has been swept to a depth of 35 feet. The chart should be revised as considered appropriate.

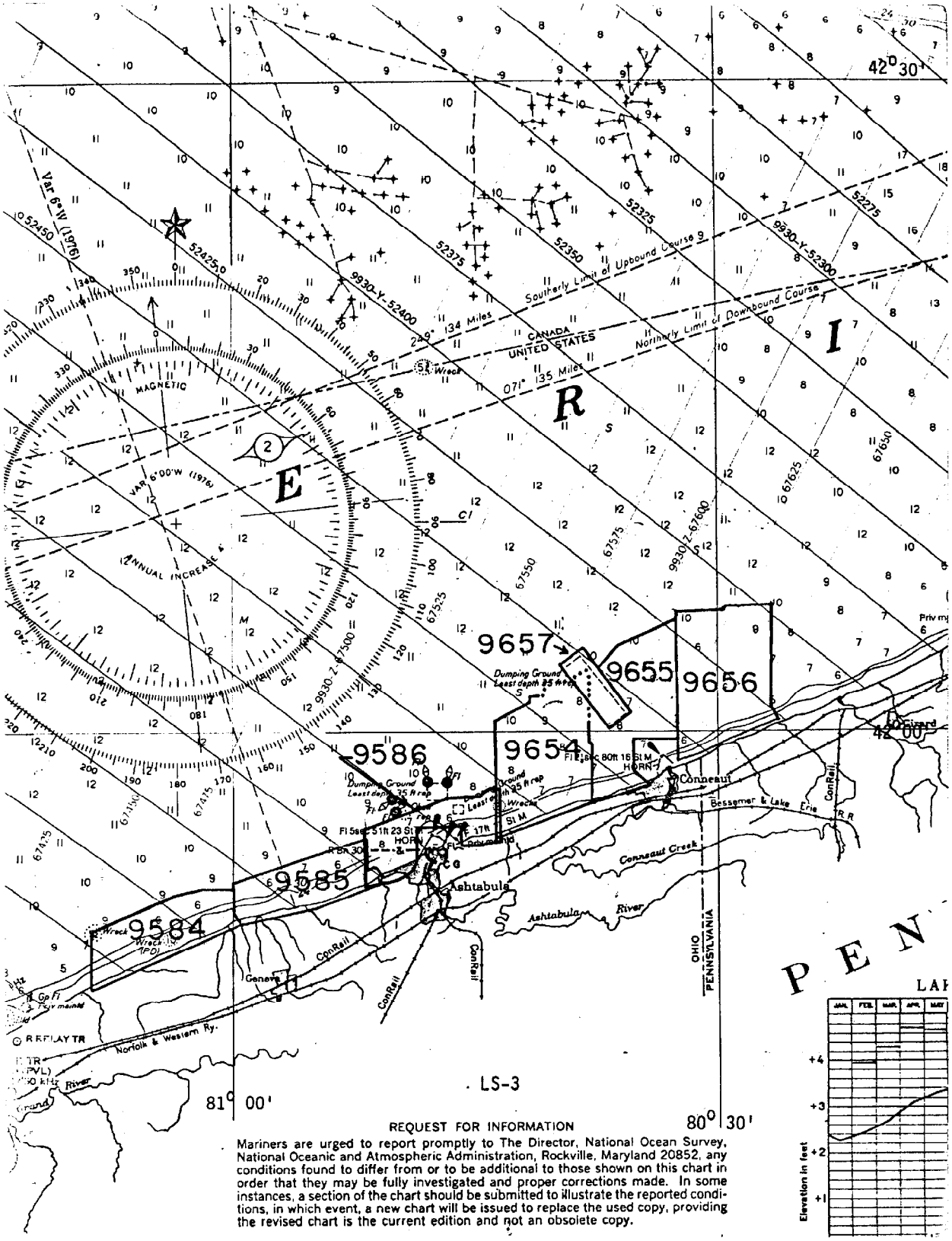
10. Section 7 a of the Verifier's Report is considered deficient in that it lacks any reference to the "Wrecks" note charted within the present survey area. This feature should have been addressed in the referenced section of the Verifier's Report.

Section 7 a of the Verifier's Report is supplemented by the following:

(3) The "Wrecks" note charted in the vicinity of latitude 41°56.50', longitude 80°43.50' originates with a not readily ascertainable source. It is not verified or disproved by the present survey and is referred to the compiler for source identification, evaluation, and appropriate action.

(4) Attention is directed to the rock awash charted in the vicinity of latitude 41°53.80', longitude 80°49.26'. The charted symbol does not conform to the standard rock awash symbol as shown in Chart No. 1 (Nautical Chart Symbols and Abbreviations). The charted symbol should be revised.

cc:
C35
C351



LS-3

REQUEST FOR INFORMATION

Mariners are urged to report promptly to The Director, National Ocean Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20852, any conditions found to differ from or to be additional to those shown on this chart in order that they may be fully investigated and proper corrections made. In some instances, a section of the chart should be submitted to illustrate the reported conditions, in which event, a new chart will be issued to replace the used copy, providing the revised chart is the current edition and not an obsolete copy.

(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9586

INSTRUCTIONS

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

CHART	DATE	CARTOGRAPHER	REMARKS
14820	11-30-78	E Clark	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. 3 EXAM FOR CRITICAL CORRECTIONS NONE APPLIED.
14836	3/2/79	M. J. Fries	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 2 Consider hydro fully appld in the common area
14825	1-24-80	Ralph B. Ross	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 2 app'd in full - part thru cht. 14836
14820	12-2981	B. Hammond	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 5 applied thru Chart 14825
~~14820M~~	~~4-13-82~~	~~Wayne B. Morris~~	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. ~~5 Posted 2 Sndgs & 10 m Curve~~
14828	11-7-79	R Ross	Full Part Before After Verification Review Inspection Signed Via
			Drawing No. New Chart
14820M	4-14-82	Wayne B. Morris	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 5 Appd in full thru #14828M
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

USCOMM-DC 8558-P63