

TP-01445

TP-01445

NOAA FORM 76-35 (6-80)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Map No. TP-01445	Edition No. 1st
Job No. CM-8603	
Map Classification III	
Type of Survey SHORELINE	
LOCALITY	
State MICHIGAN	
General Locality LAKE MICHIGAN and LAKE HURON	
Locality STRAITS of MACKINAC	
ST. IGNACE	
1987 TO 19	
REGISTERED IN ARCHIVES	
DATE	

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.											
DESCRIPTIVE REPORT - DATA RECORD		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">TYPE OF SURVEY</td> </tr> <tr> <td><input checked="" type="checkbox"/> ORIGINAL</td> <td></td> </tr> <tr> <td><input type="checkbox"/> RESURVEY</td> <td></td> </tr> <tr> <td><input type="checkbox"/> REVISED</td> <td></td> </tr> </table>		TYPE OF SURVEY		<input checked="" type="checkbox"/> ORIGINAL		<input type="checkbox"/> RESURVEY		<input type="checkbox"/> REVISED			
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PHOTOGRAMMETRIC OFFICE Photogrammetry Branch Rockville, MD.		SURVEY TP-01445 MAP EDITION NO. (1) MAP CLASS 111 JOB PH CM-8603											
OFFICER-IN-CHARGE Capt. A.Y. Bryson		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">LAST PRECEDING MAP EDITION</td> </tr> <tr> <td colspan="2" style="text-align: center;">TYPE OF SURVEY</td> </tr> <tr> <td><input type="checkbox"/> ORIGINAL</td> <td></td> </tr> <tr> <td><input type="checkbox"/> RESURVEY</td> <td></td> </tr> <tr> <td><input type="checkbox"/> REVISED</td> <td></td> </tr> </table>		LAST PRECEDING MAP EDITION		TYPE OF SURVEY		<input type="checkbox"/> ORIGINAL		<input type="checkbox"/> RESURVEY		<input type="checkbox"/> REVISED	
LAST PRECEDING MAP EDITION													
TYPE OF SURVEY													
<input type="checkbox"/> ORIGINAL													
<input type="checkbox"/> RESURVEY													
<input type="checkbox"/> REVISED													
I. INSTRUCTIONS DATED													
1. OFFICE		2. FIELD											
Aerotriangulation Office		No instructions furnished July 26, 1989											
Field		May 16, 1989											
II. DATUMS													
1. HORIZONTAL: <input type="checkbox"/> 1927 NORTH AMERICAN		OTHER (Specify) NAD 1983											
2. VERTICAL: <input type="checkbox"/> MEAN HIGH-WATER <input type="checkbox"/> MEAN LOW-WATER <input type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL		OTHER (Specify) International Great Lakes Datum (1955)											
3. MAP PROJECTION Lambert Conformal Conic Projection		4. GRID(S) STATE Michigan ZONE Central											
5. SCALE 1:20,000		STATE ZONE											
III. HISTORY OF OFFICE OPERATIONS													
OPERATIONS		NAME	DATE										
1. AEROTRIANGULATION BY METHOD: Analytical LANDMARKS AND AIDS BY		L. Harrod, Jr.	6/88										
2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: Kongsberg Flatbed Plotter CHECKED BY		L. Harrod, Jr.	6/88										
3. STEREOSCOPIC INSTRUMENT COMPILATION BY		D. Graham	9/88										
INSTRUMENT: Wild B-8 SCALE: 1:20,000		J. Schad	9/88										
4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY		D. Graham	10/88										
METHOD: Smooth Drafting SCALE: 1:20,000		J. Schad	10/88										
HYDRO SUPPORT DATA BY CHECKED BY		N/A											
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		N/A											
6. APPLICATION OF FIELD EDIT DATA BY		N/A											
7. COMPILATION SECTION REVIEW BY		J. Schad	12/88										
8. FINAL REVIEW BY		J. Schad	12/88										
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		J. Schad	11-89										
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		P. Dempsey	11-89										
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		J. Rikon	Nov. 89										

COMPILATION SOURCES

1. COMPILATION PHOTOGRAPHY

CAMERA(S) WILD RC8(E) F/L 152.71		TYPES OF PHOTOGRAPHY LEGEND <input checked="" type="checkbox"/> COLOR (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE	
TIDE STAGE REFERENCE <input type="checkbox"/> PREDICTED TIDES <input checked="" type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				ZONE Eastern MERIDIAN 75th	<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
87 EC 1559-1562	6/4/87	15:12	1:50,000	The water level at the time of photography was 580.2 ft. based on gage at Mackinaw City, Michigan. (Sta. 5080)	
87 EC 1570-1572	6/4/87	15:44	1:50,000		
87 EC 1574	6/4/87	15:45	1:50,000		

REMARKS Plane of reference (Low Water Datum) for Lake Huron is 576.8 ft. The shoreline datum is lake level at the time of photography.

2. SOURCE OF MEAN HIGH-WATER LINE:

The photograph listed above

3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE:

N/A

4. CONTEMPORARY HYDROGRAPHIC SURVEYS (List only those surveys that are sources for photogrammetric survey information.)

SURVEY NUMBER	DATE(S)	SURVEY COPY USED	SURVEY NUMBER	DATE(S)	SURVEY COPY USED

5. FINAL JUNCTIONS

NORTH	EAST	SOUTH	WEST
TP-01441	TP-01442	N/A	Joins CM 8604 TP-01447

REMARKS

NOAA FORM 76-36C
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

HISTORY OF FIELD OPERATIONS

TP-01445

I. ☒ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J.E. Dunford	May- June 1987
2. HORIZONTAL CONTROL	RECOVERED BY J.E. Dunford	5/87
	ESTABLISHED BY J.E. Dunford	5/87
	PRE-MARKED OR IDENTIFIED BY J.E. Dunford	5/87
3. VERTICAL CONTROL	RECOVERED BY N/A	
	ESTABLISHED BY N/A	
	PRE-MARKED OR IDENTIFIED BY N/A	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY N/A	
	LOCATED (Field Methods) BY N/A	
	IDENTIFIED BY N/A	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION	
	<input type="checkbox"/> COMPLETE BY	
	<input type="checkbox"/> SPECIFIC NAMES ONLY	
	<input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	None
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	N/A

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

2. VERTICAL CONTROL IDENTIFIED

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
87 EC 15725	WHISER 1965		
87 EC 1559	GREEN (U.S.L.S.) 1954		

3. PHOTO NUMBERS (Clarification of details)

N/A

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

N/A

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: ☐ REPORT☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

N/A

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

One Field Work Brown Binder

RECORD OF SURVEY USE

TP-01445

I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Final Reviewed Class III Map	Dec. 1988	Chart Maintenance Print		
Final Reviewed Class III Map	Dec. 1988	Notes to Hydrographer Print	Dec. 1988	Dec. 1985

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

NUMBER	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
1. pg		Dec. 1985	Cartographic Feature of Charting Interest

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: _____3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: _____

III. FEDERAL RECORDS CENTER DATA

1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☐ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 SUBMITTED BY FIELD PARTIES.
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
ACCOUNT FOR EXCEPTIONS:

4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: _____

IV. SURVEY EDITIONS (This section shall be completed each time a new map edition is registered)

SECOND EDITION	SURVEY NUMBER TP - _____ (2)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
THIRD EDITION	SURVEY NUMBER TP - _____ (3)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
FOURTH EDITION	SURVEY NUMBER TP - _____ (4)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT
TP-01445

Project CM-8603 consisted of the production of Class III shoreline maps. Five 1:20,000-scale and one 1:10,000-scale maps were compiled. The area compiled extends from Beaver Tail Point to Gros Cap, Lake Huron, Michigan.

The purpose of this map, TP-01445, 1:20,000 scale, is to provide contemporary shoreline data for maintenance of the nautical charting program.

Field operations consisted of aerial photography and the recovery, establishment, and identification (premarking) of horizontal control necessary for aerotriangulation. Eight horizontal control stations were paneled for use in aerotriangulation. Field operations for project CM-8603 commenced in May 1987 and concluded in June 1987.

Natural color photographs 1:50,000 scale and 1:30,000 scale were taken in June 1987 with the Wild RC-8(E) camera.

Four strips of 1:50,000-scale color photographs and one strip of 1:30,000-scale color photographs were bridged and adjusted to the ground using the General Integrated Analytical Triangulation Program (GIANT).

Horizontal control stations used in the adjustment were premarked panels. Elevations from U.S.G.S. quadrangles were used as vertical control. The amount of aerotriangulated control proved adequate and meets National Standards of Map Accuracy.

Compilation was performed by the Special Project Unit, Rockville Office. This map delineation was based on office interpretation of the natural color photographs using the Wild B-8 stereoplotter and the ratio color photographs. All line work was smooth drafted.

Final review was performed by the Special Project Unit, Rockville office. This map complies with the project instructions and meets the requirement for the National Standard of Map Accuracy.

The Descriptive Report contains all the information pertinent to the completion of this map.

FIELD INSPECTION
TP-01445

There was no field inspection prior to compilation. Field work accomplished consisted of aerial photography and the recovery, establishment and identification (premarking) of horizontal control necessary for aerotriangulation.

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AEROTRIANGULATION REPORT
CM-8603
BEAVER TAIL POINT TO GROS CAP
LAKE HURON
MICHIGAN
JUNE, 1988

AREA COVERED

This report covers the shoreline and adjacent waterways from Beaver Tail Point to Gros Cap. The project consists of five 1:20,000 scale sheets; TP-01441 through TP-01445 and one 1:10,000 scale sheet; TP-01446, in the vicinity of St. Ignace.

METHOD

Four strips of 1:50,000 scale and one strip of 1:30,000 scale color photographs were bridged by analytical aerotriangulation methods and adjusted to ground using the General Integrated Analytical Triangulation Program(GIANT). The strips were measured using the WILD STK comparator. Horizontal control consists of pre-marked stations and office identified stations. Common points were transferred between strips to ensure adequate junctioning.

Ratio values were determined for the bridging photographs. A copy of these values and a sketch of the photo coverage are attached to this report.

Worksheets and final manuscripts were plotted on the Kongsberg Plotter. The sheets were plotted in the Michigan State Plane Coordinate System, Central Zone. This is a Lambert conformal conic projection. All positions are based on NAD 1983. In addition, 10 mm ticks depicting NAD 1927 projection intersections were plotted at twice the interval of the NAD 1983 projection intersections.

ADEQUACY OF CONTROL

The control meets the National Ocean Service requirements for manuscripts. A listing of closures to control is attached.

The control station, MORAN MICROWAVE TOWER, 1965, and its sub-point would not fit with the other control in the project. The aerotriangulation position is 83 feet west and 78 feet north of the published position. The 1964 USGS quad of the area shows the tower south of a building. The 1987 photos show the tower west of a building. The published position plots on the tower symbol on the quad. The tower has probably been moved.

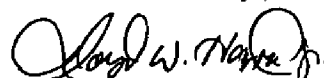
SUPPLEMENTAL DATA

USGS topographic quadrangles were used to obtain vertical control for bridging. NOS Nautical Charts were used to locate aids and landmarks.

PHOTOGRAPHY

The coverage, overlap, and quality of the color photographs were adequate of the job.

Submitted by,



Lloyd W. Harrod Jr.

Approved and Forwarded



Don O. Norman
Chief, Aerotriangulation Unit

RATIO VALUES -
CM-8603

<u>1:50,000 Bridging Photographs</u>	<u>Ratio Value</u>
87 E (C) 1089 - 1101	2.53
87 E (C) 1546 - 1552	2.56
87 E (C) 1559 - 1564	2.56
87 E (C) 1571 - 1576	2.56
 <u>1:30,000 Bridging Photographs</u>	
87 E (C) 1218 - 1220	3.03

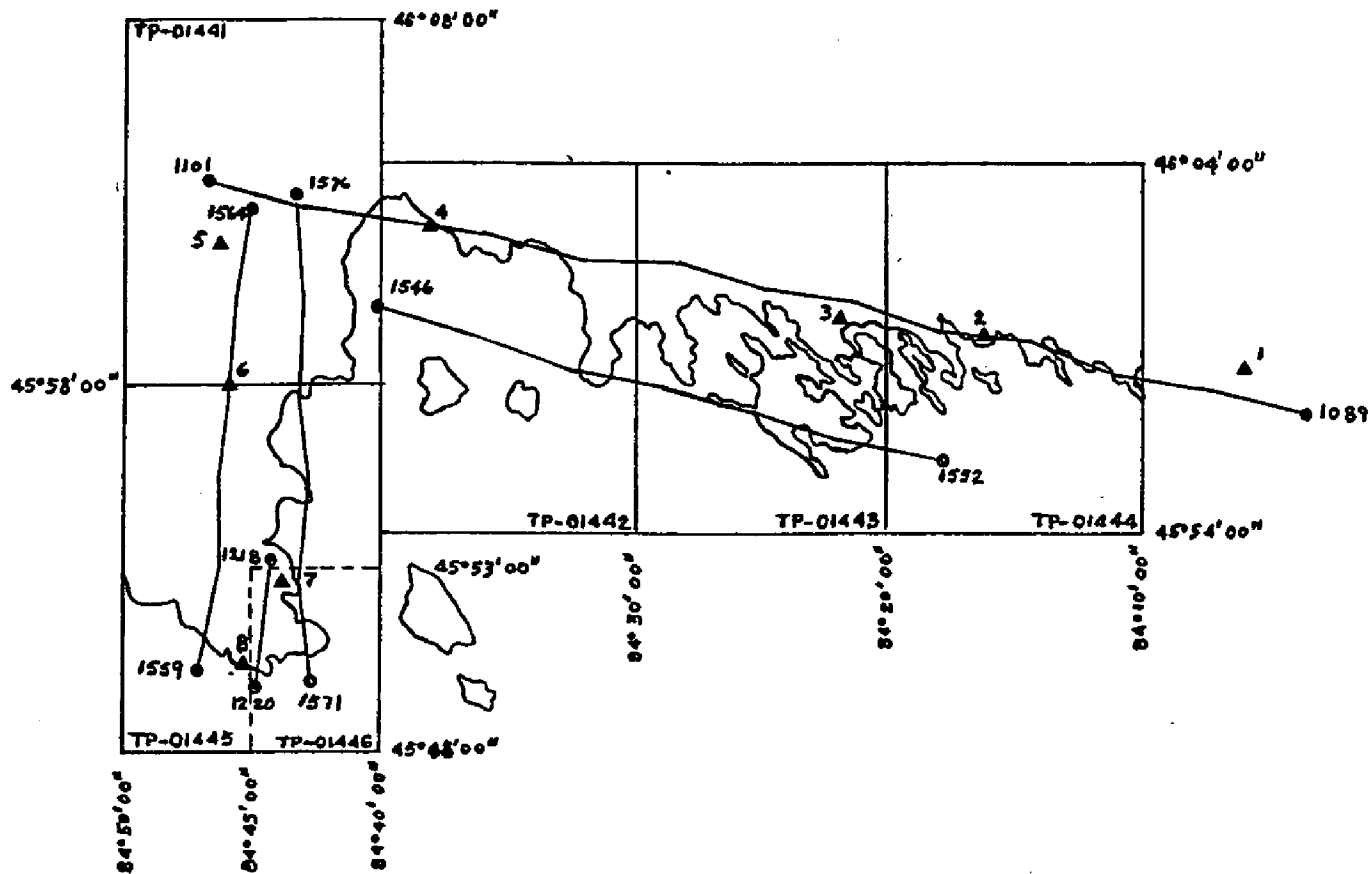
FIT TO CONTROL

<u>STATION NAMES</u>	<u>POINT NO.</u>	<u>VALUES IN FEET</u>	
		<u>X</u>	<u>Y</u>
▲ 1. ALBANY BAY Panel #1 Direct	(089100)	1.1	-0.9
▲ 2. MCKAY Panel #2 Direct	(093100)	-1.3	1.5
▲ 3. CEDAR Panel #3 Direct	(094100)	-0.2	-0.2
▲ 4. JAMIESON Sub pt. Panel #4	(099101)	0.2	-0.6
▲ 5. FLAT Sub pt. Panel #5	(101101)	0.4	-0.0
6. MORAN MICROWAVE TOWER Sub pt. Panel #6	(562101)	-86.6	77.0
▲ 7. HISER Sub Pt. Panel #7	(572101)	-0.4	1.2
▲ 8. GREEN Sub Pt. Panel #8	(571101)	0.3	-1.0
9. MORAN MICROWAVE TOWER	(562100)	-83.0	78.5

▲ Points held in the adjustment

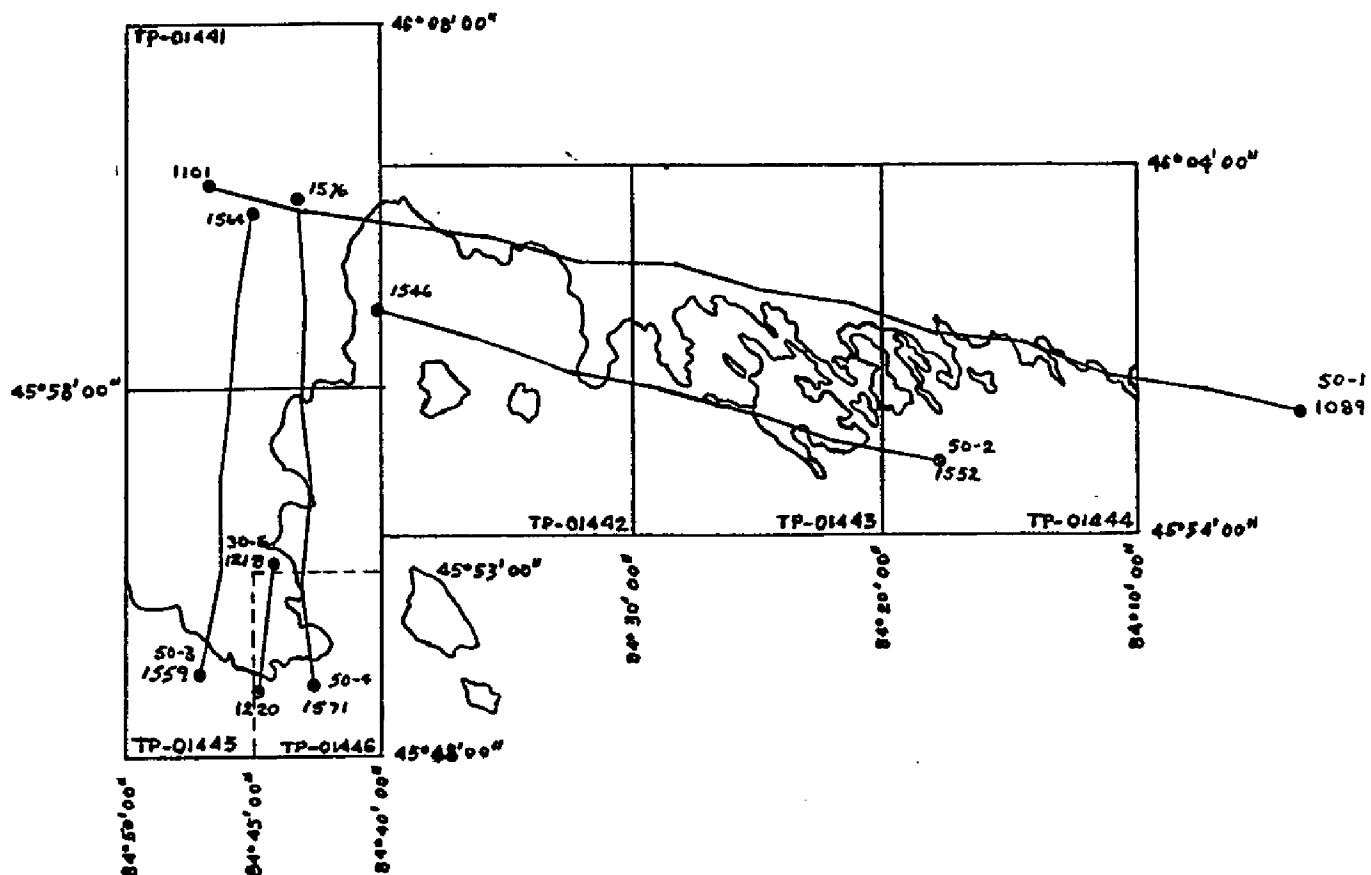
Station numbers keyed to horizontal control sketch

HORIZONTAL CONTROL



JOB CM-8603
 BEAVER TAIL POINT TO GROS CAP
 LAKE HURON
 MICHIGAN
 SHORELINE MAPPING
 SCALE 1:20,000
 1:10,000

BRIDGING PHOTOGRAPHS



JOB CM-8603
 BEAVER TAIL POINT TO GROS CAP
 LAKE HURON
 MICHIGAN
 SHORELINE MAPPING
 SCALE 1:20,000
 1:10,000

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	JOB NO.	GEODETIC DATUM	ORIGINATING ACTIVITY	REMARKS
TP-01445	CM-8603	NAD 1983	Special Projects Unit	Rockville, MD
STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI-ANGULATION POINT NUMBER	COORDINATES IN FEET STATE N/A ZONE	GEOGRAPHIC POSITION φ LATITUDE λ LONGITUDE
HISER 1965	Quad 450844 Sta. 1081	13 18	X=	φ 45-52-49.839
			Y=	λ 84-44-22.602
GREEN (USLS) 1954	Quad 450844 sta. 1020	8	X=	φ 45-50-07.382
			Y=	λ 84-44-47.709
STRAITS OF MACKINAC BRIDGE NORTH TOWER 1956	Quad 450844 sta. 1063		X=	φ 45-49-13.818
			Y=	λ 84-43-38.383
STRAITS OF MACKINAC BRIDGE NW TOWER LIGHT 1965	Quad 450844 sta. 1063A		X=	φ 45-49-13.853
			Y=	λ 84-43-38.829
STRAITS OF MACKINAC BRIDGE SOUTH TOWER 1956	Quad 450844 sta. 1064		X=	φ 45-48-36.513
			Y=	λ 84-43-43.873
STRAITS OF MACKINAC BRIDGE SW TOWER LIGHT 1965	Quad 450844 sta. 1064A		X=	φ 45-48-36.534
			Y=	λ 84-43-44.382
STRAITS OF MACKINAC SCENIC OBS TOWER 1956	Quad 450844 sta. 1062		X=	φ 45-51-09.971
			Y=	λ 84-45-59.518
ST IGNACE RADIO STATION KQA 259 MAST 1965	Quad 450844 sta. 1082		X=	φ 45-52-43.301
			Y=	λ 84-43-44.937
St. Ignace Telephone Co. Mast, 1965	Quad 450844 sta. 1083		X=	φ 45-51-15.480
			Y=	λ 84-42-52.120
			X=	φ
			Y=	λ
COMPUTED BY		DATE	COMPUTATION CHECKED BY	DATE
LISTED BY D. Graham		DATE 11/2/88	LISTING CHECKED BY J. Schad	DATE 11/18/88
HAND PLOTTING BY		DATE	HAND PLOTTING CHECKED BY	DATE

SUPERSEDES NOAA FORM 76-41, 2-71 EDITION WHICH IS OBSOLETE.

COMPILATION REPORT
TP-01445

31. DELINEATION

Delineation of detail was accomplished using a Wild B-8 stereoplotter.

32. CONTROL

Horizontal control furnished by the Aerotriangulation Unit was adequate for controlling the stereomodels. Refer to the Aerotriangulation Report bound with this Descriptive Report for additional information.

Vertical Control was achieved by using a combination of elevations provided by the Aerotriangulation Unit, USGS quadrangles, and the land/water interface.

33. SUPPLEMENTAL DATA

None

34. CONTOURS AND DRAINAGE

The compilation of contours was not a requirement of this project. Drainage was compiled based on office interpretation of the bridging/compilation photographs.

35. SHORELINE AND ALONGSHORE DETAILS

The visible line of contact between land features and the water was compiled as the shoreline. Shoreline and alongshore delineation, with the exception of the southern two-thirds of the Mackinac Bridge, was compiled using the Wild-B8 stereoplotter. The southern two-thirds of the Mackinac Bridge was compiled graphically by plotting the north and south towers and aligning the bridge to fit the towers.

36. OFFSHORE DETAIL

Offshore detail was compiled by instrument methods as described in item 31 of this report.

37. LANDMARKS AND AIDS

Twelve landmarks and one aid to navigation were confirmed on this map. Refer to the Cartographic Features of Charting Interest page bound with this report.

The ST IGNACE TELEPHONE CO MAST, 1965, could not be verified through B-8 compilation. The analytical plotter was used to confirm that the mast was not verifiable with the NAD 1983 Coast and Geodetic Survey's position. For landmark purposes, a mast

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was established on the analytical plotter. This newly established mast is approximately thirty-five feet from the listed position of the ST IGNACE TELEPHONE CO MAST, 1965.

38. CONTROL FOR FUTURE SURVEYS

None

39. JUNCTIONS

Refer to item 5 of NOAA Form 76-36B, bound with this Descriptive Report for more information on map junctions.

40. HORIZONTAL AND VERTICAL ACCURACY

This map meets the National Standards of Map Accuracy. For additional information, refer to the Aerotriangulation Report bound with this Descriptive Report.

41. through 45. - Not applicable.

46. COMPARISON WITH EXISTING MAPS

Comparisons were made with the following 1:24,000 scale U.S. Geological Survey quadrangles:

Evergreen Shores, Michigan, 1964
St. Ignace, Michigan, 1964
McGulpin Point, Michigan, 1964
Moran, Michigan, 1964

47. COMPARISON WITH NAUTICAL CHARTS

A comparison was made with the following National Ocean Service nautical chart:

14881, 25th Edition (December 28, 1985), scale 1:80,000,
inset scale 1:15,000

Submitted by,

Douglas Graham
Douglas Graham
Cartographer

John A. Mooney
Approved and Forwarded:

John A. Mooney
Chief, Special Projects Unit

GEOGRAPHIC NAMES

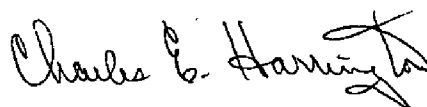
Final Name Sheet

CM-8603 (Beaver Tail Point to Gros Cap, MI)

TP-01445

Chain Lake
Cranberry Lake
East Moran Bay
Evergreen Shores (locale)
Foley Creek
Freschette Lake
Gamble Lake
Graham Point
Green Island
Gros Cap (locale)
Hay Lake
Hoban Creek
Horseshoe Bay
Huron, Lake
La Barbe, Point
Lant Lake
Mackinac, Straits of
Mackinac Bridge
Mackinac County Airport
Martin Lake
Massey Lake
Michigan, Lake
Moran River
Rabbit Back Creek
Rabbit Back Point
Saint Ignace
Saint Ignace, Point
Silver Lake
Summerby Creek
West Moran Bay

Approved:



Charles E. Harrington
Chief Geographer
Nautical Charting Division
Charting and Geodetic Services

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FINAL REVIEW REPORT
TP-01445

61. GENERAL STATEMENT

Refer to the Summary bound with this Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS - None

63. COMPARISON WITH MAPS OF OTHER AGENCIES

A comparison was made with the following 1:24,000 scale U.S. Geological Survey quadrangles:

Evergreen Shores, Michigan, 1964
St. Ignace, Michigan, 1964
McGulpin, Michigan, 1964
Moran, Michigan, 1964

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS - None

65. COMPARISON WITH NAUTICAL CHARTS

14881, Scale 1:80,000, 25th Edition, dated December 28, 1985,
inset scale 1:15,000

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

This map meets the National Standards of Map Accuracy and requirements specified in the Project Instructions.

Submitted by,

James E. Schad

James E. Schad
Unit Reviewer

Approved for forwarding:

John G. Mearns
Chief, Special Projects Unit

Approved:

N/A
Chief, Photogrammetric Production Section

MC [Signature]
Chief, Photogrammetry Branch

CARTOGRAPHIC FEATURES OF CHARTING INTEREST

1 PAGE 1

PROJECT NUMBER: CM-8603

MAP NUMBER: TP-01445

LOCALITY, STATE: St. Ignace, Michigan

SCALE: 1:20,000

DATUM: NAD 1983

The following charted landmarks, nonfloating aids to navigation and possible landmark value have been identified and measured during photogrammetric operations. Refer to Nautical Charting Division Standard Digital Data Exchange Format documentation for clarification of NCD Quality (Q.C.) and Cartographic (CARTO) Codes. Please note that cartographic code 993 is a photogrammetric source code for cartographic features of possible landmark value.

FEATURE DESCRIPTION	CARTO CODE	GEOGRAPHIC POSITION		NCD Q.C.	DATE OF LOCATION
		LAT.	LONG.		
CASTLE ROCK	086	45-54-38.18	84-44-29.23	6	6/4/87
TANK FR	086	45-54-11.262	84-44-19.496	13	6/4/87
R MAST	086	45-51-15.250	84-42-52.371	13	6/4/87
SPIRE	086	45-51-56.40	84-43-19.80	6	6/4/87
R MAST	086	45-52-43.301	84-43-44.937	13	6/4/87
TANK	086	45-51-41.971	84-44-08.053	13	6/4/87
TANK	086	45-51-42.13	84-43-52.067	13	6/4/87
OBS TR	086	45-51-09.971	84-45-59.518	13	6/4/87
R MAST	086	45-51-47.08	84-46-55.96	6	6/4/87
R MAST (WLOG)	086	45-51-44.43	84-46-55.29	6	6/4/87
TOWER	086	45-49-13.818	84-43-38.383	13	6/4/87
TOWER	086	45-48-36.513	84-43-43.873	13	6/4/87
FI R LT (Northwestern Dock Lt)	086	45-52-29.25	84-42-53.72	6	6/4/87

_end-

Listing approved by: James Schad

FINAL REVIEWER

12/15/88

DATE

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO.

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.

[illegible]