

TP-01446

TP-01446

NOAA FORM 76-35
(6-80)U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Map No.
TP-01446Edition No.
1stJob No.
CM-8603Map Classification
IIIType of Survey
SHORELINE

LOCALITY

State
MICHIGANGeneral Locality
LAKE HURONLocality
STRAITS OF MACKINAC

ST IGNACE

19 87 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> <td colspan="2" style="text-align: center;">SURVEY TP. <u>01446</u></td> </tr> <tr> <td>☒ ORIGINAL</td> <td></td> <td colspan="2">MAP EDITION NO. <u>(1)</u></td> </tr> <tr> <td>☐ RESURVEY</td> <td></td> <td colspan="2">MAP CLASS <u>III</u></td> </tr> <tr> <td>☐ REVISED</td> <td></td> <td colspan="2">JOB <u>PH-CM-8603</u></td> </tr> </table>		TYPE OF SURVEY		SURVEY TP. <u>01446</u>		☒ ORIGINAL		MAP EDITION NO. <u>(1)</u>		☐ RESURVEY		MAP CLASS <u>III</u>		☐ REVISED		JOB <u>PH-CM-8603</u>	
TYPE OF SURVEY		SURVEY TP. <u>01446</u>																	
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☐ REVISED		JOB <u>PH-CM-8603</u>																	
PHOTOGRAMMETRIC OFFICE Photogrammetry Branch Rockville, MD		<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>☐ ORIGINAL</td> <td>JOB PH. _____</td> </tr> <tr> <td>☐ RESURVEY</td> <td>MAP CLASS _____</td> </tr> <tr> <td>☐ REVISED</td> <td>SURVEY DATES: 19__ TO 19__</td> </tr> </table>		LAST PRECEDING MAP EDITION		TYPE OF SURVEY		☐ ORIGINAL	JOB PH. _____	☐ RESURVEY	MAP CLASS _____	☐ REVISED	SURVEY DATES: 19__ TO 19__						
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☐ ORIGINAL	JOB PH. _____																		
☐ RESURVEY	MAP CLASS _____																		
☐ REVISED	SURVEY DATES: 19__ TO 19__																		
OFFICER-IN-CHARGE Capt. A.Y. Bryson																			
I. INSTRUCTIONS DATED																			
1. OFFICE		2. FIELD																	
Aerotriangulation No instructions furnished Office July 26, 1988		Field May 6, 1987																	
II. DATUMS																			
1. HORIZONTAL: ☐ 1927 NORTH AMERICAN		OTHER (Specify) NAD 1983																	
2. VERTICAL: ☐ MEAN HIGH-WATER ☐ MEAN LOW-WATER ☐ MEAN LOWER LOW-WATER ☐ MEAN SEA LEVEL		OTHER (Specify) International Great Lakes Datum (1955)																	
3. MAP PROJECTION Lambert Conformal Conic Projection		4. GRID(S) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">STATE Michigan</td> <td style="width:50%;">ZONE Central</td> </tr> <tr> <td>STATE</td> <td>ZONE</td> </tr> </table>		STATE Michigan	ZONE Central	STATE	ZONE												
STATE Michigan	ZONE Central																		
STATE	ZONE																		
5. SCALE 1:10,000																			
III. HISTORY OF OFFICE OPERATIONS																			
OPERATIONS		NAME	DATE																
1. AEROTRIANGULATION BY METHOD: Analytical LANDMARKS AND AIDS BY		L. Harrod, Jr.	June 1988																
2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: Kongsberg Flatbed Plotter CHECKED BY		L. Harrod, Jr.	June 1988																
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY		D. Graham	Sept. 1988																
INSTRUMENT: Wild B-8 CONTOURS BY SCALE: 1:10,000 CHECKED BY		J. Schad	Sept. 1988																
4. MANUSCRIPT DELINEATION PLANIMETRY BY METHOD: Smooth Drafting CHECKED BY		D. Graham	Oct. 1988																
SCALE: 1:10,000 HYDRO SUPPORT DATA BY CHECKED BY		J. Schad	Oct. 1988																
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		N/A																	
6. APPLICATION OF FIELD EDIT DATA BY		N/A																	
7. COMPILATION SECTION REVIEW BY		N/A																	
8. FINAL REVIEW BY		J. Schad	Dec. 1988																
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		J. Schad	11-89																
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		P. Dempsey	Nov. 1989																
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		S. Dillon	Nov. 89																

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

COMPILATION SOURCES

TP-01446

1. COMPILATION PHOTOGRAPHY

CAMERA(S) Wild RC-8 (E) F/L 152.71		TYPES OF PHOTOGRAPHY LEGEND (C) COLOR (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE	
TIDE STAGE REFERENCE ☐ PREDICTED TIDES ☒ REFERENCE STATION RECORDS ☐ TIDE CONTROLLED PHOTOGRAPHY				ZONE Eastern	☒ STANDARD
				MERIDIAN 75 th	☐ DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
87 EC 1218-1220	5/25/87	11:32	1:30,000	The water level at the time of photography was 580.2 ft. based on gage at Mackinac City, Mich Michigan. (sta. #5080)	
87 EC 1559-1560	6/04/87	15:12	1:50,000		

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

2. SOURCE OF MEAN HIGH-WATER LINE:

The photographs 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-01445	N/A	N/A	TP-01445

REMARKS

HISTORY OF FIELD OPERATIONS

TP-01446

I. ☒ FIELD INSPECTION OPERATION

☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	J.E. Dunford	May-June 87
2. HORIZONTAL CONTROL	RECOVERED BY J.E. Dunford	May 1987
	ESTABLISHED BY J.E. Dunford	May 1987
	PRE-MARKED OR IDENTIFIED BY J.E. Dunford	May 1987
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 ☐ COMPLETE ☐ SPECIFIC NAMES ONLY ☒ NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY N/A	
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 1218	HISER. 1965		
87 EC 1220	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 ☒ NONE

6. 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)

RECORD OF SURVEY USE

TP-01446

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. 1989	Dec. 1989

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. 1989	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 ☐ REVISED ☐ RESURVEY	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL	
THIRD EDITION	SURVEY NUMBER TP - _____ (3)	JOB NUMBER PH - _____	TYPE OF SURVEY ☐ REVISED ☐ RESURVEY	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL	
FOURTH EDITION	SURVEY NUMBER TP - _____ (4)	JOB NUMBER PH - _____	TYPE OF SURVEY ☐ REVISED ☐ RESURVEY	
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL	

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT
TP-01446

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-01446, 1:10,000 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 May 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-01446

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.

8

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 1927 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.

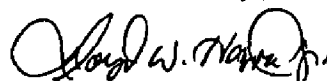
SUPPLEMENTAL DATA

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

1:50,000 Bridging Photographs

Ratio Value

87 E (C) 1089 - 1101
87 E (C) 1546 - 1552
87 E (C) 1559 - 1564
87 E (C) 1571 - 1576

2.53
2.56
2.56
2.56

1:30,000 Bridging Photographs

87 E (C) 1218 - 1220

3.03

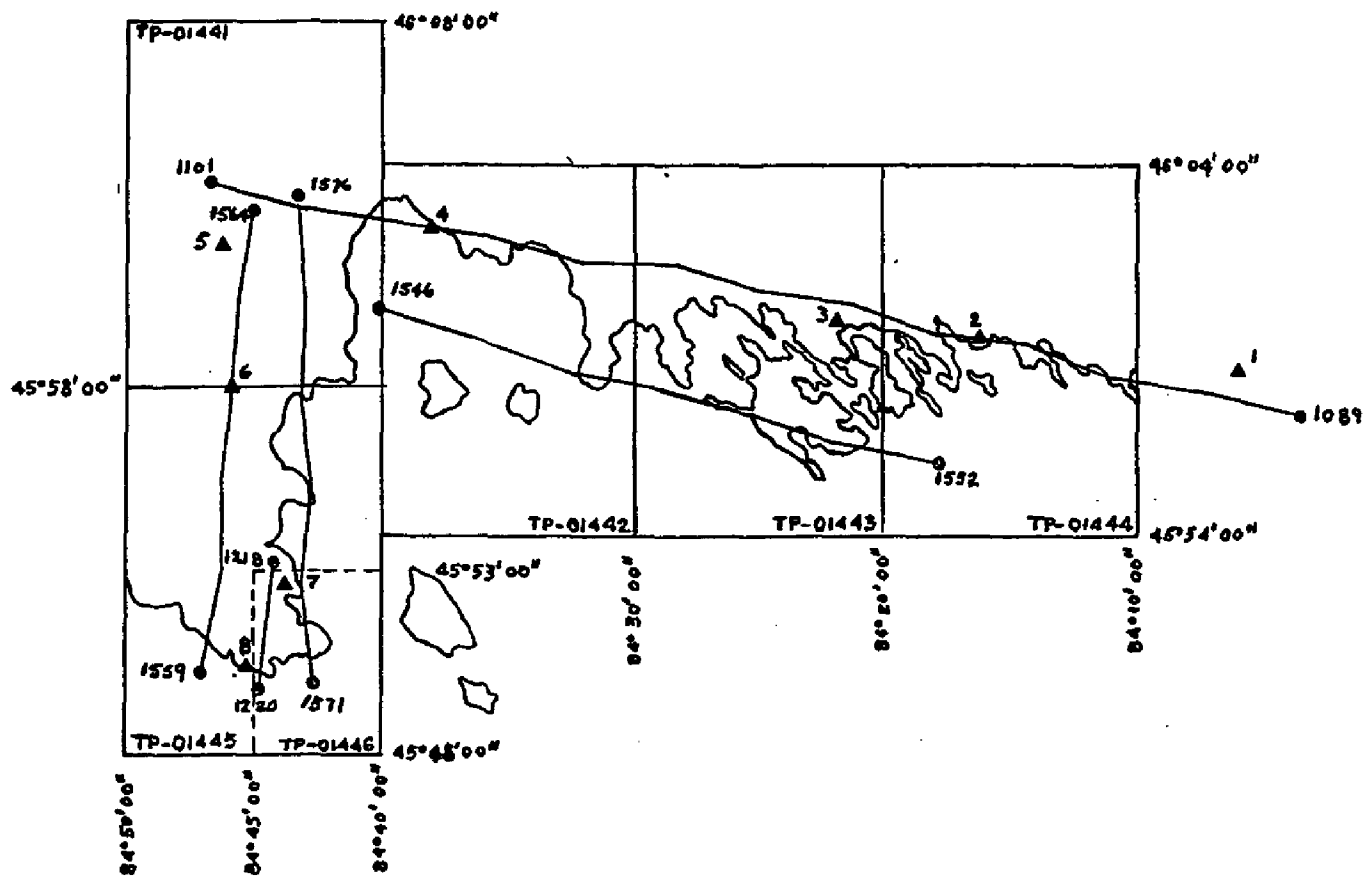
FIT TO CONTROL

<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
R15,000

BRIDGING PHOTOGRAPHS

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO. TP-01446	JOB NO. CM-8603	GERDET 1983	ORIGINATING AGENCY'S 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	REMARKS
HISER 1965	Quad 450844 Sta. 1081	18	X=	φ 45-52-49.839	
			Y=	λ 84-44-22.602	
GREEN (U.S.L.S.) 1954	Quad 450844 Sta. 1020	8	X=	φ 45-50-07.382	
			Y=	λ 84-44-57.709	
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 SOUTH TOWER 1956	Quad 450844 Sta. 1064		X=	φ 45-48-36.513	
			Y=	λ 84-43-43.873	
STRAITS OF MACKINAC BRIDGE NW TOWER LIGHT 65	Quad 450844 Sta. 1063A		X=	φ 45-49-13.853	
			Y=	λ 84-43-38.829	
STRAITS OF MACKINAC BRIDGE SW TOWER LIGHT 65	Quad 450844 Sta. 1064A		X=	φ 45-48-36.534	
			Y=	λ 84-43-44.382	
ST. IGNACE RADIO STATION KQA 259 MAST 1965	Quad 450844 Sta. 1082		X=	φ 45-52-43.301	R MAST REMOVED
			Y=	λ 84-43-44.937	
ST. IGNACE TELEPHONE CO. MAST: 1965	Quad 450844 Sta. 1083		X=	φ 45-51-15.480	R MAST REMOVED
			Y=	λ 84-42-52.120	
			X=	φ	
			Y=	λ	
			X=	φ	
			Y=	λ	
COMPUTED BY		DATE	COMPUTATION CHECKED BY		DATE
LISTED BY D. Graham		DATE 11/2/88	LISTING CHECKED BY J. Schab		DATE 11/28/88
HAND PLOTTING BY		DATE	HAND PLOTTING CHECKED BY		DATE

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

COMPILATION REPORT
TP-01446

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

Nine 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

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

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)

TM-01446

Chain Lake

East Moran Bay

Graham Point

Green Island

Huron, Lake

Mackinac, Straits of

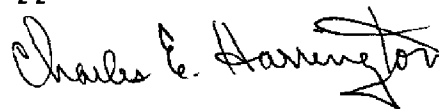
Mackinac Bridge

Michigan, Lake

Saint Ignace

Saint Ignace, Point

Approved:



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

14

FINAL REVIEW REPORT
TP-01446

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

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS - None

65. COMPARISON WITH NAUTICAL CHARTS

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

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,
L. S. D. A.

[REDACTED]

Unit Reviewer

Approved for forwarding:

John A. McLean
Chief, Special Projects Unit

Approved:

N/A
Chief, Photogrammetric Production Section

MC Brant
Chief, Photogrammetry Branch

CARTOGRAPHIC FEATURES OF CHARTING INTEREST

1 PAGE 1

PROJECT NUMBER: CM 8603

MAP NUMBER: TP-01446

LOCALITY, STATE: ST. IGNACE, MICHIGAN

SCALE: 1:10,000

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.		
R MAST	086	45-51-15.250	84-42-52.371	1 P.D	5/25/87
SPIRE	086	45-51-56.40	84-43-19.80	6	5/25/87
R MAST	086	45-52-43.301	84-43-44.937	1 P.D	5/25/87
TANK	993	45-51-41.971	84-44-08.053	1 P.D	5/25/87
TANK	993	45-51-42.313	84-43-52.067	1 P.D	5/25/87
R MAST	086	45-51-18.42	84-42-12.26	6	5/25/87
TV MAST	086	45-51-38.81	84-43-58.52	6	5/25/87
TOWER	086	45-49-13.818	84-43-38.383	1 P.D	6/04/87
TOWER	086	45-48-36.513	84-43-43.873	1 P.D	6/4/87
FI R LT	086	45-52-29.25	84-42-53.72	6	6/4/87

_end-

Listing approved by:

Jamés Schad
FINAL REVIEWER

11/28/88

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]