

8031

Diag. Cht. No. 1202-2.

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ST-4153 Office No. H-8031

LOCALITY

State Maine

General locality Gulf of Maine

Locality Vicinity of Mt. Desert Rock

194 53

CHIEF OF PARTY

J. S. Morton, Cdr. USC&GS

LIBRARY & ARCHIVES

DATE February 4, 1955

B-1870-1 (1)

8031

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-8031

Field No. St-4153

State MAINE

General locality GULF OF MAINE

Locality VICINITY OF MT. DESERT ROCK

Scale 1:40,000 Date of survey 21 July thru 24 Sept. 1953

Instructions dated 4 February 1953

Vessel STIRNI

Chief of party J.S. MORTON

Surveyed by SHIP'S OFFICERS

Soundings taken by ~~13366 meters~~ graphic recorder, hand lead, etc

Fathograms scaled by SHIP PERSONNEL

Fathograms checked by SHIP PERSONNEL & NORFOLK PROCESSING OFFICE

Protracted by MARY KEYTON

Soundings penciled by MARY KEYTON

Soundings in ~~13366~~ fathoms feet at MLW ~~MLLW~~ and are true depths

REMARKS: This survey was smooth plotted in the Hydrographic Section of the Norfolk Processing Office.

A PROJECT:

CS-265 (1953), Supplemental Instructions dated 4 February 1953, and Director's Letter dated 6 February 1954. ✓

B SURVEY LIMITS AND DATES:

This survey was conducted offshore from the vicinity of Isle Au Haut, Maine, to south of Mt. Desert Island, Maine. Hydrography was begun 21 July 1953 and completed 24 September 1953. Junction was made with the southerly limits of prior surveys H-7153 (1:20,000-1946) and H-7058 (1:20,000-1945) and extended south to latitude $43^{\circ} 53'$. The survey extended eastward to longitude $68^{\circ} 01'$ with a section from latitude $44^{\circ} 06'$ to latitude $44^{\circ} 12'$ extending eastward to longitude $57^{\circ} 59'$. The work on this sheet progressed satisfactorily although priority was given to the launch work which was conducted simultaneously. ✓

C VESSEL AND EQUIPMENT:

The Coast Survey ship STIRNI was used in this survey while basing at Southwest Harbor, Maine. The fathometers used over the entire area were 808 Portable Depth Recorders, numbers 145-SP, 151-SPX, 155-SPX. All soundings were recorded in fathoms and tenths, but are shown on the boat sheet in feet. A metal check bar, with accurately calibrated lines, was used to obtain Bar Checks. ✓

D TIDE AND CURRENT STATIONS:

Predicted tides at Southwest Harbor, Maine, were used to reduce all soundings on the boat sheet. A portable automatic gage was in operation at Southwest Harbor during this survey and tide records from this gage were used for the correction of soundings without time of height difference. ✓

T.G. not on this survey

No current stations were occupied.

E SMOOTH SHEET:

The smooth sheet will be plotted by the Norfolk Processing Office. ✓

F CONTROL STATIONS:

Shoran control was used for all the hydrography on this sheet. Shoran stations SHOR (1953) and RAN (1953) were located photogrammetrically to within 0.5 mm on 1:10,000 scale planimetric manuscripts T-8647 N/2 and RS-459. This error is barely plottable on 1:40,000 scale and provided adequate control for the hydrography. Three triangulation stations were used to provide 3-point sextant fixes to calibrate the shoran. ✓

GREAT DUCK ISLAND LIGHTHOUSE, 1902, r. 1934 (KGC)
HORSESHOE LEDGE BEACON, 1934 (KGS) r. 1944 (FLP)
SCRAG ISLAND, 1875 (JWD) r. 1934 (KGC)

G SHORELINE AND TOPOGRAPHY:

Since the sheet was offshore, shoreline and topography were not needed and served only to orient the sheet. Shoreline was transferred to the boat sheet by means of projector images of Nautical charts 308 and 1202.

No large scale topographic survey of Mt. Desert Rock was known to exist, so an aerial photograph of the rock was field inspected by the photogrammetric party. A 1:5,000 scale compilation was made on vinylite and was submitted to the Division of Nautical Charts as a chart letter. (L. 72, 1954) *Review, P 1*

H SOUNDINGS:

All soundings were taken with 808 type portable depth recorders. Velocity corrections were determined from a combination of bar checks and serial temperatures. Considerable difficulty was experienced with the governors on the fathometers and frequently soundings had to be rejected because the speed was in error. On two days (Pos. 173-183 P day and Pos. 170-176, 222-275 Y day) the error in speed was not discovered until a considerable area had been sounded, and most of the soundings were saved by applying a correction for the error in speed. The correction was applied as a percentage correction and the percentage was determined by comparing actual travel of the graph per unit of time against correct travel of graph paper. These corrections are entered in the sounding volumes as "speed" or "special" corrections.

I CONTROL OF HYDROGRAPHY:

Shoran was used for control throughout the survey. Shoran corrections were determined by comparing positions determined from sextant fixes plotted on a metal mounted topo sheet against simultaneous shoran fixes. The calibration was checked 14 times during the season, and the final corrections were meaned—two periods of time were used for mean corrections because a change was made in the method of setting the shore station sets at the end of C day.

J ADEQUACY OF SURVEY:

The junction with modern surveys on the north appears satisfactory though the bottom is very irregular along most of this junction. This survey is considered adequate for charting of the area covered. *Review, P 4*

The depth curves were not inked on the boat sheet because the considerable differences in the phase corrections of the several fathometers used were not known when the soundings were put on the boat sheet, and it was not believed that the considerable amount of work involved in correcting the soundings on the boat sheet, in order to ink depth curves, was justified.

M COMPARISON WITH CHART: *Review, #6*

The area covered by this survey falls within the limits of Chart 1202. The chart used for comparison was printed 10/20/52 and corrected to 3/16/53. The soundings on the chart are quite widely spaced and much new information was found on this survey. However, the agreement was generally good. The reported 54 ft. sounding at Lat. $44^{\circ} 08'$, Long. $68^{\circ} 00'$ was searched for but no indication found. It is recommended that it be removed from the chart, } 54 deleted from chart
on Columbia Ledge, just south of Mt. Desert Rock, a minimum sounding of 20' 18" (p. 5. 79 R) ft. was found—against a charted 24 ft. This shoal is covered with kelp, as can be seen on the fathogram, so we felt over it with lead line to obtain proof on what was kelp and what bottom. (18 now charted)

U STATISTICS:

Totals for Sheet.

No. of Pos. - 282¹⁷, Stat. Mi. of Sdgs. - 2186.2, Wire Sdgs. 2, Area, Sq. Stat. Mi. - 377.1

V TIDE NOTE:

The portable automatic tide gage located in Southwest Harbor, Lat. $44^{\circ} 16.49'$, Long. $68^{\circ} 18.30'$, furnished tidal data used in reducing soundings for the entire sheet. Mean low water falls at 3.5 feet on the Southwest Harbor tide staff. No correction for time or height was applied to the Southwest Harbor readings. Hourly heights were scaled by ship personnel, and the plane of reference was furnished by the Washington Office.

W ABSTRACT OF VELOCITY CORRECTIONS:

Velocity corrections were applied using one set of corrections through 4 September 1953, and a different set after 4 September 1953, for the remainder of the season.

Phase corrections are as follows:

Fathometer No.	A to B Fms.	A to C Fms.	A to D Fms.
SP-145	+1.2	+2.2	+2.8
151-SPX	-0.4	-3.1	-5.4
155-SPX	-1.6	-2.2	-4.2

Velocity corrections and phase corrections were combined under the cho correction column of the sounding volume.

VELOCITY CORRECTIONS THRU 4 SEPTEMBER 1953 - SHIP STIRNI

FATH. 151-SPX			FATH. 155-SPX ^A ^{2.1.6}			FATH. 145-SP		
From	To	Corr.	From	To	Corr.	From	To	Corr.
0 Fm.	6 Fm.	0.0 Fm.	0 Fm.	8 Fm.	0.0 Fm.	0 Fm.	11.5 Fm.	0.0 Fm.
6	13	-0.2	8	23	-0.2	11.5	26	-0.2
13	29.5	-0.4	23	42.5	-0.4	26	45	-0.4
29.5	47	-0.6	42.5	61.5	-0.6 ^{-2.2}	45	64	-0.6
47	65	-0.8	61.5	81	-0.8 ^{-2.4}	64	83	-0.8
65	82.5	-1.0	81	100	-1.0 ^{-2.6}	83	102	-1.0
82.5	100	-1.2	100	119.5	-1.2 ^{-2.8}	102	121	-1.2
100	118	-1.4	119.5	138.5	-1.4 ^{-3.0}	121	139.5	-1.4
118	135.5	-1.6	138.5	158	-1.6 ^{-3.2}			

VELOCITY CORRECTIONS AFTER 4 SEPTEMBER 1953 - SHIP STIRNI

FATH. 151-SPX			FATH. 155-SPX			FATH. 145-SP		
From	To	Corr.	From	To	Corr.	From	To	Corr.
0 Fm.	6 Fm.	0.0 Fm.	0 Fm.	8 Fm.	0.0 Fm.	0 Fm.	11.5 Fm.	0.0 Fm.
6	14.5	-0.2	8	38.5	-0.2	11.5	44	-0.2
14.5	62	-0.4	38.5	87.5	-0.4	44	94	-0.4
62	113.5	-0.6	87.5	137	-0.6	94	144	-0.6
113.5	164	-0.8	137	187	-0.8	144	—	-0.8

X ABSTRACT OF SHORAN CORRECTIONS:

Day Letter	SHOR	RAN
A - C	+0.036	-0.012
D - BA	-0.017	-0.003

Respectfully submitted,

J. S. Morton
J. S. Morton

Approved and forwarded,

J. S. Morton
J. S. Morton

STATISTICS
H-8031

<u>VOL. NO.</u>	<u>DAY LTR.</u>	<u>DATE</u>	<u>NO. POS.</u>	<u>LL SDGS.</u>	<u>STA. MI. SDGS.</u>
1	A	7-21-53	28	0	22.4
1	B	7-27-53	8	0	6.7
1	C	7-28-53	56	0	48.3
1&2	D	7-30-53	118	0	92.2
2&3	E	8- 3-53	97	0	90.5
3	F	8- 4-53	81	0	72.4
3&4	G	8- 6-53	83	0	78.2
4	H	8- 7-53	30	0	26.4
4	J	8-11-53	90	0	65.7
4&5	K	8-12-53	95	0	81.4
5	L	8-13-53	54	0	36.8
5&6	M	8-17-53	110	0	96.4
6	N	8-19-53	114	0	89.2
7&8	P	8-20-53	219	0	186.8
8&9	Q	8-21-53	229	0	188.0
9	R	8-24-53	98	7	61.5
10	S	8-25-53	86	0	61.7
10	T	8-29-53	100	0	72.5
11	U	8-31-53	118	0	92.5
11&12	V	9- 1-53	107	0	73.6
12	w	9-11-53	104	0	78.7
12,13&14	X	9-16-53	230	0	164.2
14&15	Y	9-17-53	282	0	207.5
15&16	Z	9-22-53	106	0	74.5
16	AA	9-23-53	85	0	55.2
16	BA	9-24-53	89	0	61.9
TOTALS			2817	7	2185.2

AREA, SQUARE STATUTE MILES

377.1

FLOATING AIDS TO NAVIGATION
H-8031

<u>BUOY</u>	<u>LAT.</u>	<u>LONG.</u>	<u>DEPTH</u>	<u>POS. NO.</u>	<u>DATE</u>
The Drums Buoy 1	44-08. ⁵⁴ 27	68-18. ⁰⁵ 30	110'	4-5A	7-21-53

Position of buoy was estimated from sounding line.

LIST OF SIGNALS
H-8031

TRIANGULATION STATIONS

DUCK GREAT DUCK ISLAND LIGHTHOUSE, 1902-34
HORSE HORSESHOE LEDGE BEACON, 1934
SCRAG SCRAG ISLAND, 1875-1934

TOPOGRAPHIC STATIONS

SHOR . SHOR, 1953 (T-11350)

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8031 (Field No. St-4153)

GENERAL

This appears to be an excellent basic survey. Soundings at crossings checked very well considering the extremely irregular bottom. Time corrections were entered in several instances to bring the soundings into agreement. ✓

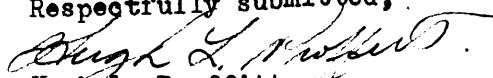
SHORELINE

Shoreline at mt. Desert Rock to be entered by Washington Office.

(See paragraph G).

Review, #1

Respectfully submitted,



Hugh L. Proffitt
Cartographer.

Norfolk, Va.
27 September 1954

GEOGRAPHIC NAMES

Survey No. H-8031

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
Maine												1
Gulf of Maine												2
Great Duck Island												3
Long Island												4
Mt. Desert Rock												5
Columbia ledge												6
Isle Au Haut												7
												8
												9
												10
												11
Southwest Harbor												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25
												26
												27

} apply names as on chart 1202 after inking of sheet

Names approved
7-4-55. L. Heck

(tide station)

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8031...

Records accompanying survey:

Boat sheets ..1..; sounding vols. ...16; wire drag vols.;
 bomb vols.; graphic recorder rolls 4 Env.;
 special reports, etc. 1 Descriptive Report; 1 Smooth Sheet; 7 Film Bromoils;

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

Number of positions on sheet		2817
Number of positions checked		8
Number of positions revised		6
Number of soundings revised (refers to depth only)		0
Number of soundings erroneously spaced		12
" " " " added (photogram re-scanned)		5
Number of signals erroneously plotted or transferred		0
Topographic details	Time	0
Junctions	Time	60
Verification of soundings from graphic record	Time	112 + Curves
Verification by <i>R. F. Elkins</i> 60 hrs -		
<i>O. Svendsen</i> 620 hrs	Total time	680
	Date	Aug. 2 '57
Reviewed by <i>J. A. Dinsmore</i>	Time	56
	Date	15 Nov. 1957

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8031

FIELD NO. ST-4153

Me., Gulf of Maine, Vicinity of Mt. Desert Rock

Surveyed: July - Sept. 1953

Scale 1:40,000

PROJECT NO. CS-265

Soundings: 808 Depth Recorder

Control: Shoran

Chief of Party - J. S. Morton

Surveyed by - J. S. Morton & R. C. Darling

Protracted by - M. Keyton

Soundings plotted by - M. Keyton

Verified and inked by - O. Svendsen

Reviewed by - T. A. Dinsmore

Date: 15 Nov. 1957

Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline of Mount Desert Rock originates with a 1:5000 air-photographic compilation filed as Chart Letter 72 of 1954. The remaining shoreline outlined on the smooth sheet for orientation purposes for this offshore survey was transferred from reviewed air-photographic surveys T-8570, T-8571 and T-8572 of 1946.

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement considering the irregularities in the bottom.

3. Depth Curves and Submarine Relief

The usual depth curves are adequately delineated. Supplemental 10-fm. interval curves between 50 and 100 fms. have been inked to conform with curve interval on Chart 1106.

Columbia Ledge rises abruptly from 200-ft. depths to within 18 ft. of the surface about a half mile south of Mt. Desert Rock. Among the more prominent features in the area are the large sea valleys which trend southward on both the east and west of Mt. Desert Rock. The 800-ft. deep in lat. $43^{\circ}54'$, long. $68^{\circ}13'$, is the most conspicuous of many depressions throughout the area. These, together with numerous mounds and ridges contribute to the general irregularities in the bottom.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7153 (1946) and H-7774 (1949-50) on the north and with H-7058 (1945) on the northwest. That portion of the present survey which extends northward between Long Island and Great Duck Island overlaps and supplements the survey coverage on H-7153 and H-7774. Depths in the overlap area should be charted from the larger-scale surveys.

No other contemporary surveys adjoining this area are registered at the present time.

5. Comparison with Prior Surveys

H-1074 (1870) 1:20,000
H-1372 (1877) 1:40,000

H-2697 (1904) 1:40,000

These prior surveys cover the northern portion of the present survey. The southern portion of the area had not been previously surveyed. A comparison of the prior and present surveys reveals no changes in bottom. However, the widely-spaced old sounding lines failed to reveal much critical information disclosed by the closer development on the present survey.

With the retention of numerous bottom characteristics, the present survey is adequate to supersede the prior surveys within the common area.

6. Comparison with Chart 308 (Drwg. No. 15, 1957)
1202 (Latest print date 7/1/57)

A. Hydrography

Charted hydrography originates principally with the present survey prior to verification and review. No discrepancies of importance are noted. However, the following uncharted soundings revealing bottom features from the present survey are listed for the consideration of the Chart-Compilation Section:

<u>Latitude</u>	<u>Longitude</u>	<u>Survey Depth</u>
44°07.6'	68°17.4'	97✓
06.8	15.5	102✓
05.7	16.1	174
05.1	17.3	155✓
04.5	17.9	144✓
03.6	18.6	139-138 on Survey
00.9	07.5	133✓
43°57.4	19.4	287 - off 308
56.1	26.4	290
56.0	14.0	323
56.3	12.7	328
56.1	11.2	413
54.3	26.3	303
54.4	19.0	302
54.8	15.3	335
53.1	20.5	299

B. Aids to Navigation

The survey and charted positions of the buoy in lat. 44°08.5', long. 68°18.6', are in agreement and adequately mark the feature intended. No other floating aids to navigation are charted in the area.

7. Condition of Survey

- a. The sounding records are complete; the Descriptive Report covers all matters of importance.
- b. The smooth plotting was accurately done.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is an excellent basic survey and no additional field work is required.

Examined and Approved:

Max G. Ricketts
Max G. Ricketts
Chief, Nautical Chart Branch

Charles A. Schanck
Charles A. Schanck
Chief, Division of Charts

Karl B. Jeffers
Karl B. Jeffers ^{12/14/57}
Chief, Hydrography Branch

Samuel B. Grenell
Samuel B. Grenell
Chief, Division of Coastal Surveys

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

12 October 1954

Division of Charts: R. H. Carstens

Plane of reference approved in
16 volumes of sounding records for

HYDROGRAPHIC SHEET

8031

Locality Mt. Desert Island, Maine

Chief of Party: J. S. Morton in 1953
Plane of reference is mean low water, reading
3.5 ft. on tide staff at Southwest Harbor
17.9 ft. below B. M. 2 (1879)

Height of mean high water above plane of reference is 10.2 feet.

Condition of records satisfactory except as noted below:

E. C. McKay

Tides Branch

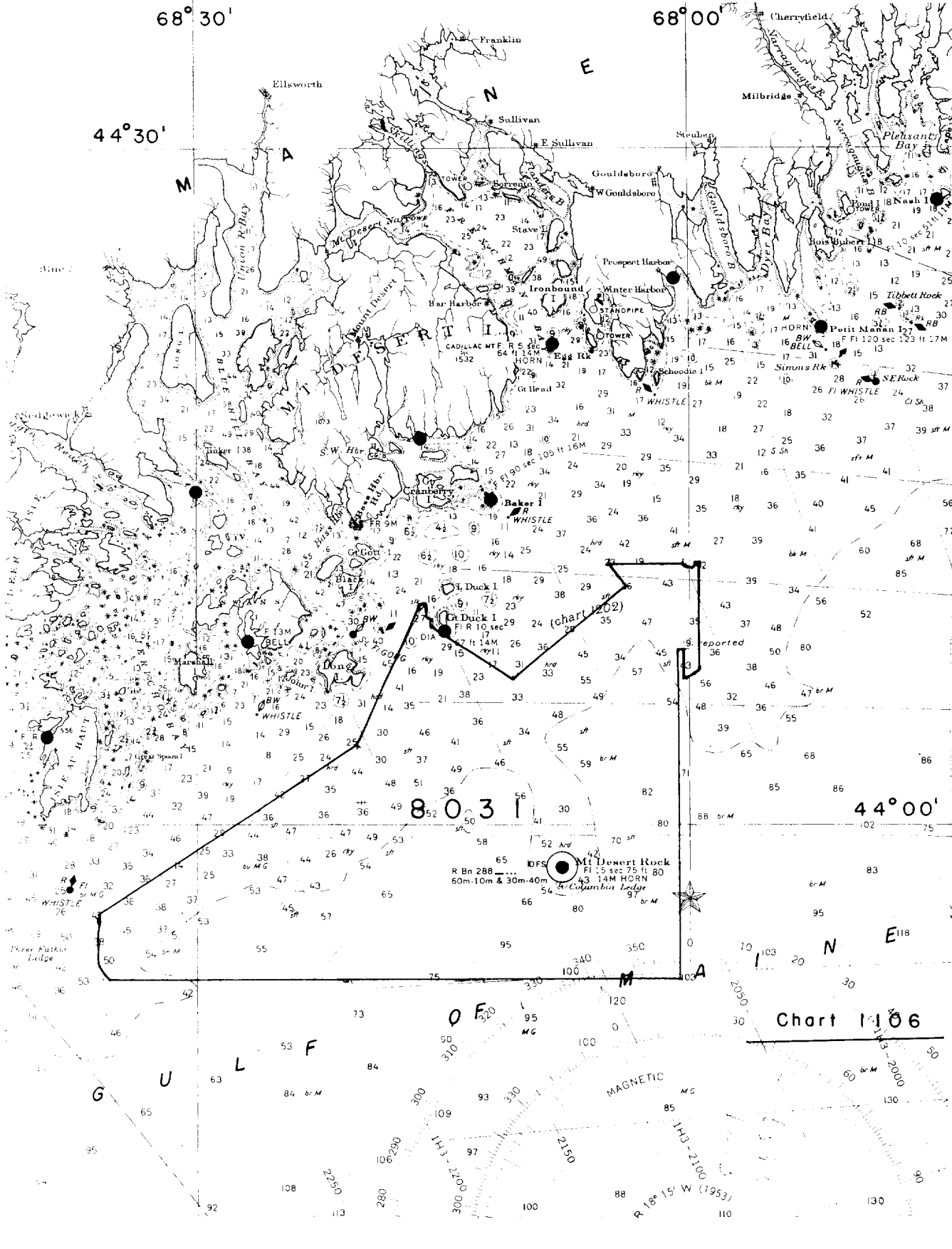
Chief, Division of Tides and Currents.

96

68° 30'

68° 00'

44° 30'



44° 00'

80 3 1

R Bn 288
 60m-10m & 30m-40m
Mt Desert Rock
 Fl 5 sec 75 ft 80
 43 14M HORN
 Columbia Lodge

Chart 1106

MAGNETIC

R 18° 15' W (1953)
 2050
 2150
 2250
 2300

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8031

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
11-1-54	^{Buff} 1202	CB Samuel	Before After Verification and Review
1/12/55	1106	J.A.M.	Before After Verification and Review
2/1/55	208 Reconst.	JKE	Before After Verification and Review <small>application verified by gpd 4/17/57 after partial verification - all soundings in keel</small>
4-6-55	71	J.H. Eaton	Part app'd. Before After Verification and Review
Aug 55	1000 1000L	Nichols	Before After Verification and Review Part appl. no corr.
Nov 58	1000	Nichols	Before After Verification and Review Complete appl.
4/6/62	306 Reconst.	Helm	Before After Verification and Review Fully app'd. Partly thru 308
3-9-66	308	G. Johnson	Before After Verification and Review Fully App'd
3-9-66	306	G. Johnson	Before After Verification and Review Added one sdg in overlap area thru cht 308.
7-30-66	1202 Reconst.	G. Johnson	Before After Verification and Review Fully App'd in part thru cht 308, drg # 21

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

Fish Havens, car bodies —

6 yrs - nothing but axels & blocks
sand blasting effect

10 yrs safety