H-10131

Diagram No. 1203-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. MI-10-3-84

Office No. H-10131

LOCALITY

State Maine

General Locality East Penobscot Bay

Locality Approaches to the Penobscot River

19 84

CHIEF OF PARTY
CAPT. J.W.Dropp

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DATE September 19, 1985

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H-10131

NOAA FORM 77-28
(11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO. H-10131

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. MI 10-3-84

State: Maine

General locality: East Penobscot Bay

Locality: Approaches to the Penobscot River

Scale: 1:10000 Date of survey: 21 April 1984 to 28 June 1984

Instructions dated: 20 March 1984 Project No.: OPR-A166-MI/HFP-84

Vessel: NOAA Ship MT MITCHELL, Launches 2221, 2224, 2223, 2225

Chief of party: CAPT J.W. Dropp

Surveyed by: J. Miller, G. Bass, W. Sites, R. Parsons, J. Paeth, K. Peters, D. Sorenson
G. Yates, D. Rice

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by: Ship's Personnel

Graphic record checked by: Ship's Personnel

~~Protracted by~~ Verification by: P. Niland Automated plot by: PMC Xynetics Plotter

~~Verified by~~ Evaluation by: C.R. Davies

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

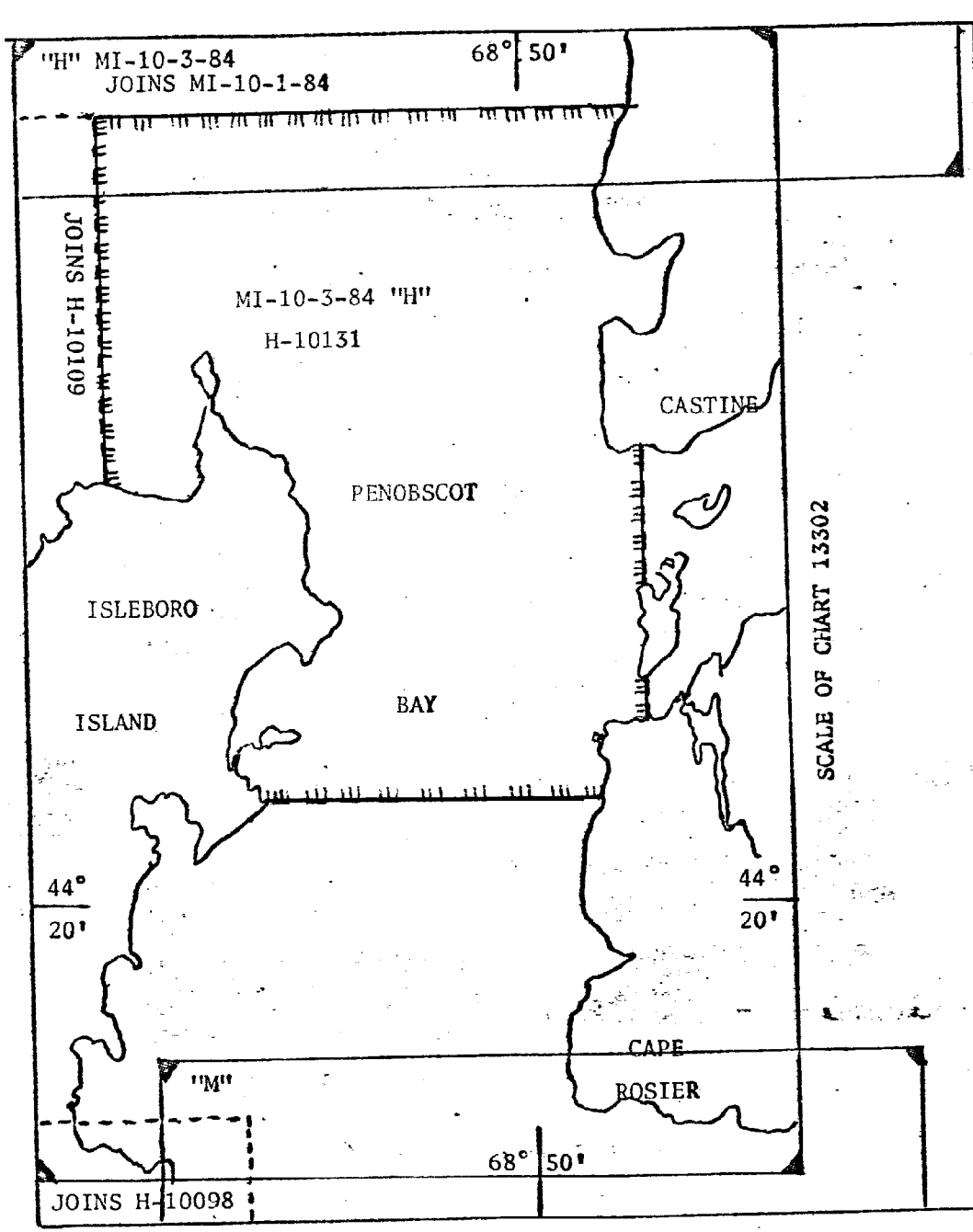
REMARKS: Marginal notes in black by Evaluator. Separates are filed with the hydrographic data.

SURF/NAVOIS ✓ 9/9/88 SJ

SC 4-16-97

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

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174



OPR-A166-MI- HFP-84
PENOBSCOT BAY, ME.
H-10131
HYDROGRAPHIC OPERATIONS
NOAA SHIP MT. MITCHELL S-222
JOSEPH W. DROPP, CAPT., NOAA
COMMANDING OFFICER

SKETCH SHOWING AREA OF
SURVEY

DESCRIPTIVE REPORT
TO ACCOMPANY SURVEY H-10131
FIELD NO. MI-10-3-84

EAST PENOBSCOT BAY AND APPROACHES TO THE PENOBSCOT RIVER

CAPT. JOSEPH W. DROPP, NOAA
COMMANDING OFFICER AND CHIEF OF PARTY

A. PROJECT ✓

This basic hydrographic survey was conducted in accordance with PROJECT INSTRUCTIONS OPR-A166-MI/HFP-84, Penobscot Bay and River, Maine, dated 20 March 1984. These instructions were amended by CHANGE No. 1, dated 14 May 1984.

B. AREA SURVEYED ✓

The survey area consists of the waters adjacent to northern Islesboro Island, Penobscot Bay, Maine, the approaches to the Penobscot River, and the waters east of Islesboro Island to Castine and Cape Rosier, Maine.

The survey is bound on the west by Longitude 68°~~53'55~~ 54'05"W, on the north by Latitude 44°25'10"N, and the east by Longitude 68°~~49'00~~ 48'42"W and on the south by Latitude 44°20'40"N.

The survey area was revised from the original area that was outlined in PROJECT INSTRUCTIONS OPR-A166-MI/HFP-84. This was in order to present a completed survey for the area of work that the MT. MITCHELL was able to survey in the time available.

It is recommended that an additional sheet be added between Latitude 44°20'40"N and the northern limit of "M" sheet, and that "I" sheet be moved to the west in order to cover the area not completed on "H" sheet. Additional work has been assigned, designated H-10173

The survey commenced on 21 April 1984 (Julian Day 112) and was completed on 28 June 1984 (Julian Day 180).

C. SOUNDING VESSEL ✓

Four vessels from NOAA Ship MT. MITCHELL were used in this survey. The vessel numbers and the Julian Days they were conducting operations follows:

VESNO	JULIAN DAY IN USE
2225 (JENSEN)	112 - 116 118 122 126 151 - 153 170 - 174 178
2224 (JENSEN)	170 - 172
2223 (JENSEN)	130 - 131 164 178 180
2221 (MONARK)	173 179 ~~180~~

The JENSEN launches are standard 28 foot aluminum survey boats. They were outfitted with propeller cages to prevent lobster pot buoy entanglements. No other modifications were made to the JENSENs.

The MONARK is a 17 foot aluminum open boat fitted with a portable fathometer with a side mounted transducer and positioning equipment for range-azimuth work.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS✓

The following sounding equipment was utilized during this survey:

VESNO	JULIAN DAY	FATHOMETER	MODEL	SERIAL NUMBER
2225	112 - 178	RAYTHEON	DSF 6000N	A110N
2224	170 - 172	RAYTHEON	DSF 6000N	A106N
2223	130 - 131	RAYTHEON	DSF 6000N	A108N
	164 - 180	RAYTHEON	DSF 6000N	B041N
2221	173 - 180	RAYTHEON	DE 719	9947

The DSF 6000N, a dual-beam echo sounder, is in the second year of operations on MT. MITCHELL. During daily scanning and verification processing a close check between the digital and analog records were observed. Any sounding corrections made to the records apply to both the high and low frequency beams. The high frequency, narrow beam was used to collect digital data.

Leadline soundings were taken at some detached positions on shoals or rocks. Leadlines on each launch were measured against a steel tape on MT. MITCHELL and corrections determined. The corrections were

applied to the leadline soundings and recorded in the appropriate sounding volume.

All survey records were scanned by the officers of MT. MITCHELL and personnel from the Survey Department. Peaks and deeps considered significant that occurred between soundings were inserted on the corrector tapes. Digitizing errors were corrected to agree with the graphic record via the corrector tape.

Barchecks for the determination of errors in the fathometer were taken twice daily when conditions allowed. Generally, current conditions were such that the bar tended to stream out in the direction of the flow at a large angle. On other days strong winds would set the launch downwind with the result that the bar acted as a sea anchor. Several barcheck results were rejected due to the wind and current conditions. The accepted barcheck data compared favorably with Nansen cast data.

Refer to Appendix D for a complete Velocity Corrections Report.

The barcheck apparatus for VESNO 2221 (MONARK) consisted of a 2.5 foot diameter aluminum circular plate attached to a measured leadline. The plate has several holes drilled into it to faciliate the raising and lowering of the plate. Barcheck procedures for 2221 consisted of the same methods as those for the JENSEN launches.

An electronic depth simulator test was performed on each of the Raytheon DSF 6000N Fathometers each day that data was collected. This equipment is manufactured by Electronic Devices, Inc. (E.D.I.), Model 3A, Depth Sounder Test Set. This test supplemented the daily barchecks.

Transducer drafts were determined for all vessels by measuring the distance from each launch rail to the waterline and subtracting that distance from the known distance to the transducer. For each JENSEN a transducer draft of ~~2.1~~ 2.6 feet was determined. For the MONARK a draft of ~~1.1~~ 1.0 feet was determined. These drafts were applied to all corrector tapes. Draft correctors were changed at PMC. See attached letter dated 7 Nov., 1984. See Section I of Evac Report

A TC/TI tape was prepared from settlement and squat data obtained on 30 April 1984 and 25 May 1984 at Rockland Harbor, Maine, for the JENSEN launches. The JENSENs were outfitted with protective cages for the settlement and squat tests. Settlement and squat data for the MONARK was determined on 9 May 1983 at Rockland, Maine. The vessel configuration did not change from 1983 to 1984. A copy of the settlement and squat report is included in Appendix D.

Predicted tides were based on daily predictions for Rockland, Maine (station number 841-5490) and corrected by a tide gage installed at Belfast, Maine (station number 841-5191). Predicted tides were applied during the sounding operations and off-line processing. Smooth tides were requested from the CHIEF, TIDES AND WATER LEVELS BRANCH (N/OMS12) in a letter dated 2 July 1984 for the period of hydrography.

E. HYDROGRAPHIC SHEETS✓

This survey was plotted on MYLAR field sheets prepared on MT. MITCHELL's HYDROPLOT SYSTEM.

NUMBER OF SHEETS	TYPE	SKEW
2	Mainscheme and developments	90, 21, 54
2	Crosslines, Detached Positions, Shorelines, Bottom Samples	90, 21, 54

Soundings on the smooth field sheets are corrected for draft, predicted tides, digitizing errors, and sound velocity as determined by NANSEN casts. These sheets are not corrected for smooth tides or settlement and squat; these corrections will be applied on the final smooth sheet prepared by the ~~ATLANTIC~~ Pacific MARINE CENTER, PROCESSING DIVISION (~~MOA232~~ MCPRII), ~~NORFOLK~~ SCATTLE, ~~VIRGINIA~~ WASHINGTON.

All field records and the following tapes have been forwarded to the ~~ATLANTIC~~ Pacific MARINE CENTER, PROCESSING DIVISION:

Range/Range Master Tapes
Range/Azimuth Master Tapes
Electronic Corrector Tapes
Velocity Corrector Tapes
Parameter Tapes
Signal Tape
TC/TI Tape

F. ELECTRONIC CONTROL STATIONS✓

The following electronic control stations were used for this survey:

STATION NO.	STATION NAME
~~40~~	Turner ~~1982~~
49	Dice Head Light House Ecc.
50	Dice Head Light House, 1862
60	Flag 1982~~3~~
62	Orrs Hill 1911
70	Turtle ~~1982~~
90	Bayside ~~1983~~
95	Steel Ledge Monument Light, 1911
101	Moose 1982~~3~~
110	Sears ~~1983~~
130	Squaw, 1982

Other stations used for calibration or range/azimuth initialling of the theodolite are:

Station No.	Station Name
92	E. Northport, Black ~~Water Tank 1934~~
~~112~~	~~Searsport Church Spire 1862~~
~~121~~	W. Stockton White Church Spire ~~1911~~
127	Searsport Radio Tower
132	Fort Point Ledge Beacon ~~1911~~ (Not used for control)

All stations are third-order, class I or better and were recovered by personnel from MT. MITCHELL.

A complete list of stations used in this survey and each respective geodetic position is included in Appendix F of this report.

G. HYDROGRAPHIC POSITION CONTROL✓

Each sounding in this survey was positioned by a short range microwave system manufactured by Del Norte Technologies, Inc. The system was utilized in both the range/range mode and the range/azimuth mode. The following equipment was used during this survey:

VESNO	JULIAN DATE	DMU SERIAL NO.	MASTER SERIAL NUMBER
2225	112 - 153	159	246
	153 - 173	1318	505
	174	162	1070
	178	182	159
2223	130 - 131	182	159
	178 - 180	122	278
2224	170	182	159
	170	505	1318
	171 - 172	182	159
2221	173	179	187
	179	432	1067

The following remote units were used in various positioning configurations for this survey:

CODE	SERIAL NO.
72	245
74	1059
74	1137
76	1320
78	220
82	221
84	220
86	249
88	1062

For range/azimuth work a WILD T-2 theodolite, serial number 17801 was used.

Each Del Norte DMU/Master pair was calibrated with the remote units over a measured baseline and two week intervals in accordance with AMC Operations Order No. 79. Twice daily calibrations of the equipment in use were taken in the following manner:

Prisms were mounted in an aluminum board and secured to the pipe holding the Del Norte master transponder and antenna. A Hewlett-Packard 3810 B Total Station E.D.M.I. (Serial Number 1929A00340) was leveled over a geodetic station, and an initial observation was taken to another geodetic station. A range and angle were then taken to the launch. At the same time the rates on the DMU were recorded. The H-P-Range/Azimuth Calibration Program for the H-P 9815 calculator was used to determine daily corrections. The final corrections as used on the corrector tapes were determined from the mean of the morning and afternoon calibrations.

On the days range/azimuth operations were performed, direct distance comparisons of the remote unit and the H-P 3810 B E.D.M.I. were observed.

Several calibrations were taken with sextants and calculated on the PDP-8 computer with program tape RK561, H/R Geodetic Calibration. The sextant calibrations served only as a system check and were superseeded when a range/azimuth calibration became available.

H. SHORELINE ✓

The shoreline encompassed by this survey is that of northern Islesboro Island from Marshall Point to Decker Point, and the eastern shore of Penobscot Bay from midway between Turner Point and Perkins Point to 0.5 mile south of Holbrook Island on Cape Rosier. Shoreline details were obtained from Class III Shoreline Manuscripts, Job CM-8101, and represented on manuscripts TP-01110, TP-01111. The scale of the manuscripts is 1:20,000. The following is a description of the shore as noted by the hydrographer in the field:

In general, most of the shoreline in this survey is composed of rocks of a granitic or metamorphic nature, interspersed with a few pebble and sand beaches in the major coves. The hard material of the shoreline allows for little erosion and does not promote the buildup of sand bars or other shoaling features that one finds in areas such as the mid-Atlantic coast of the U.S. Consequently, there has been little change in the shoreline since the times of the prior surveys in the nineteenth century.

Starting at Marshall Point on Islesboro Island and working eastward, the shore at mean low water consists of numerous rocks and boulders covered in seaweed and continues into the area known as Sprague's Beach in Turtle Head Cove. A detached position (no. 457) on a rock awash was taken at 44°22'50.3"N, 68°53'52.1"W. Another detached position (no. 493) was taken on a rock awash at 44°22'48.8"N, 68°54'01.4"W. A large boulder was seen at the west end of Sprague's

Position 493 was excessed and a rock with an elevation of 11 feet above mlw was transferred from H-10109(1983)

Beach above the high waterline. This rock is plotted on Shoreline Manuscript TP-01110. A boat was not able to maneuver close enough to it for a detached position. This rock was not plotted on the smooth sheet because it falls behind the MHWL.

Spragues Beach consists of pebbles and some sand, curving north and ending in a rising, steep rocky bluff that continues to and around Turtle Head. This area of shore consists of many boulders too numerous to take individual detached positions on, except for one (no. 568) on a rocky spit at 44°23'08.7"N, 68°52'58.3"W. NOAA Chart 13309, Penobscot River, and TP-01110 adequately depict the shoreline in Turtle Head Cove. This area is delineated by a dash line labeled foul with rocks on the smooth sheet. Position 568 is shown as a rock awash 5 feet above MLW.

A note to the hydrographer on TP-01110 asks for an investigation of a charted islet and a submerged rock in Turtle Head Cove. Both items are in an area of shoaling north and east of Marshall Point. The islet was observed to be a rock awash at mean low water. This rock is covered at tides other than mean low water. A detached position (no. 195) was taken on the rock which was 0.5 foot bare at that time. The rock's position is 44°22'57.32"N, 68°53'36.8"W. The charted islet symbol on the NOAA Chart 13309 should be removed and a rock awash symbol with a dotted circle around it (indicating a danger to navigation) should be plotted at the co-ordinates listed above.

From the end of Turtle Head the shoreline south and east to Point Comfort is adequate as charted. There are boulders and rocks too numerous to position individually, with none of the rocks having a character that makes them outstanding from others. The shoreline continues to be composed of rocks and boulders with seaweed extending from the high water line out into deeper water. North of Coombs Point, at the end of a dirt road extending east from the community named Pripet, lie the ruins of a stone pier that is grass covered on top and thus not positively identifiable on aerial photographs. TP-01110 depicts correctly the shape and size of the pier. A detached position (position ~~2134~~ 2431) was taken on the end of the pier. Chart according to Smooth Sheet. Latitude 44° 22' 11.30" N. Longitude 68° 51' 54.84" W

Approximately 50 yards north of this stone pier is the terminus of a phone cable from the mainland at Wadsworth Cove. The cable is still in place although no longer used. No other evidence of cables were found along the shore of Islesboro or that of the mainland. A further discussion of the charted cable areas will follow in section L.

From Point Comfort to Decker Point the shoreline in Parker Cove as depicted on Chart 13309 and TP-01110 is adequate. However, a rock immediately south of Hutchins Island was not observed in the field. This rock was noted on TP-01110. No particular developments were run in search of this rock. This area was observed at low water and it is recommended that, since the hydrographer saw no indication of a rock which would offer a threat to navigation, the area remain as charted. Concur

The depiction of the exposed mud-flat areas and the bare ledges in Parker Cove are accurate as depicted on TP-01110 and Chart 13309. Concur

The shoreline north of Wadsworth Cove consists of rocky ledges as depicted on Chart 13309. A detached position (no. 1103) was taken on a prominent ~~rock awash~~ Islet (3) at 44°24'32.54"N, 68°49'21.28"W. A detached

62 3

(10)

position (no. 1295) was taken on a rock ~~awash~~ at 44°24'43.56"N, 68°49'17.~~24~~"W. Another detached position (no. 1120) was taken on a rock ~~awash~~ at 44°24'23.4~~7~~"N, 68°49'19.~~91~~"W. Retain as charted

See Evac Report Section 7

(11)

Inside Wadsworth Cove the remains of a stone pier on the north shore of the cove were barely discernible. Only a few stones piled in a line remain. No detached positions were possible on the remains. The pier ruins are depicted on Chart 13309 and should remain so.

concur

A line of rocks that extends west from the shore inside Wadsworth Cove was delineated by detached position numbers 9134 through 9138. These rocks are awash at approximately an hour before and after mean low water, Chart according to Smooth Sheet

The depiction of these rocks are more accurate on TP-01111 then on Chart 13309 (individual rock peaks were noted, rather than large rock masses).

concur

The line of rocks along the beach area in Wadsworth Cove were observed by the hydrographer. A boat was not able to reach them. Only the rock noted "significant" (on TP-01111) should be charted. This is a very large light-colored boulder. Retain as charted

A small drain that is connected to the feature known as the British Canal was observed by the hydrographer, but a boat was not able to reach it. Location was not provided by hydrographer

No evidence of cables were observed in Wadsworth Cove; however, due to interviews with local utility companies, the cable designations should remain charted.

concur

From Blockhouse Point south to Dice Head the shore consists of steep, rocky bluffs. On TP-01111 a note to the hydrographer states that a local source provided information on a dangerous submerged rock, immediately west of Blockhouse Point, in about 20 feet of water. This rock was found on the last day of the survey (d.p. 8374, J.D. 180) with the help of a local inhabitant of the area. Divers were sent down and obtained a tide corrected leadline depth of 1.3 feet. The position of this rock is 44°23'40.~~71~~"N, 68°49'23.~~79~~"W. The rock is approximately 20 feet in circumference. On Chart 13309 this rock plots on top of the 5 foot sounding immediately west of Blockhouse Point. This report recommends that the 5 foot sounding be removed and the appropriate dangerous submerged rock symbol be charted instead. Chart rock awash (2) at MLW

(12)

A detached position (no. 1294) was taken on a prominent rock south of Blockhouse Point at 44°23'35.~~40~~"N, 68°49'20.~~38~~"W. No evidence of cables were observed on the rocky bluffs near Dice Head. Several waste water or sewage pipes from homes on top of the bluffs were observed near Dice Head, but these end above the mean low water line and could not be mistaken for cables. The designated cable areas should remain charted. According to the local utility companies they are still in existence.

concur

The abandoned light house is a prominent feature at Dice Head. Below the abandoned tower on the rocks near the high water line is a new navigational light. This was positioned by personnel from MT. MITCHELL to third-order, class I standards. This light is discussed further in section N.

The western shore of Holbrook Island fell within the limits of this survey. Both Chart 13309 and TP-01111 depict the shoreline accurately. A rock at the southern tip of Holbrook Island which was plotted on TP-01111 was observed in the field and a detached position (no. 2415) positioned it. Position 2415 was rejected in the field This rock was transferred from TP-01111 at latitude 44°21'13.5"N, longitude 68°48'57.0"W

On the northwest point of Cape Rosier a stone pier with a float extends out from shore in a northeasterly direction for approximately 50 yards. A detached position (no. ~~2413~~) positioned the end of the pier, at latitude 44°21'10.49"N, longitude 68°49'11.92"W. 2064

On TP-01111 a note to hydrographer states that a rock lying directly south along the shore from the above mentioned pier on Cape Rosier was not observed on the aerial photographs of the shore. This rock is plotted on Chart 13309 at 44°21'03"N, 68°49'23"W. This rock was searched for at low tide but not observed. In addition, the shoreline hydrography failed to show evidence of it. No evidence of this rock is on any prior survey. It is recommended that the rock symbol on Chart 13309 at this location be removed. concur

Continuing south along the shore, at the southern point of a small cove, the ruins of a stone pier were observed. A detached position (no. 2430) was taken on the ruins, at latitude 44°20'37.45"N, longitude 68°49'22.61"W

It should be noted that the survey parties took detached positions on rocks that seemed significant. Shoreline Manuscripts TP-01110 and TP-01111 have been annotated to show these rocks. These rocks may differ from those that were observed on the aerial photography.

I. CROSSLINES ✓

A total of 15.3 miles of crosslines were surveyed. This represents 8% of the total mainscheme miles. Crosslines were run between 45° and 90° to the mainscheme orientation.

Crossline and mainscheme hydrography were in excellent agreement based on criterion stated in Section 1.1.2, Part B.II.1 of the Hydrographic Manual.

J. JUNCTIONS ✓

This survey junctions with the following surveys:

Area of Junction	Field No.	Reg. No.	Scale	Date
Northern Limit	MI-10-1-84	H-10130	1:10000	1984
Western Limit	MI-10-6-83	H-10109	1:10000	1983
Adjoins to the South		H-10173	1:10000	1985

See Final Report Section 5

A comparison of the soundings on H-10130 resulted in ±1 foot agreement for 95% of the soundings.

A comparison of the soundings on H-10109 showed similar results; 95% of the soundings were ±1 foot.

K. COMPARISON WITH PRIOR SURVEYS ✓

Comparisons were made with the following prior surveys:

Survey	Scale	Year
H-1143	1:20000	1871
H-1258	1:20000	1872
H-1259	1:10000	1873

Numerous soundings were compared from all three prior surveys. In Turtle Head Cove the comparisons were excellent, with more than 90% of the results falling no greater than ±2 feet.

On prior survey H-1258 a 9½ foot sounding is plotted at 48°23'06"N, 68°53'51"W. This survey found 8 foot soundings at 44°23'08"N, 68°53'48"W. These soundings are in close proximity and are probably on the same shoal. It is recommended that the soundings from this survey take precedence over that of H-1258 in this area. concur

See EVAL Report Section 6

On H-1258 a 3 foot sounding, charted at 48°23'00"N, 68°53'42"W, is in very close proximity to that of a ~~4.4~~ foot ~~leadline~~ sounding taken on this survey. These soundings are on the same shoal. A further discussion of this comparison and a recommendation follow in section L.

On prior survey H-1143 the 10 foot and 16 foot shoal soundings to the northeast of Parker Cove were not found on this survey, despite extensive 10 meter developmental spacing in the area (pos 8313 - 8373). The bottom was nearly flat in the area of the 10 foot sounding, with no indication of rocks or pinnacles. There was no indication of an extension of the shoal that surrounds the bare ledges at the mouth of Parker Cove that might connect to the 16 foot shoal sounding. Since the development of this area did not reveal any shoal sounding and only served to verify the existing mainscheme soundings, the development has been designated as Do Not Smooth Plot to avoid clutter on the final field sheet. These soundings will be plotted by PAMC on their smooth sheet. These two shoal soundings in Turtle Head Cove will be discussed further in section L., COMPARISON WITH THE CHART.

See EVAL Report Section 6

On Islesboro Ledge divers found a least depth of 8.4 feet, which is in exact agreement with the prior survey. This was PSR Item No. 03010 and will be discussed further in section L. The ledge was conventionally developed using a scheme of 50m spaced lines. To avoid clutter on the final field sheet, only those soundings having the shoalest soundings and best depicting the feature were plotted. All other soundings are designated as Do Not Smooth Plot and will be plotted by PAMC on their smooth sheet. Chart according to Smoothsheet

The shallow soundings on both sides of the bay (inshore) compare favorably all along the shoreline and within the coves except where noted above. The deeper soundings (greater than 100 feet) on the prior surveys showed greater discrepancies when compared to this survey. The majority of comparisons fell within ±5 feet. The greatest depths found on H-1143 are only to 264 feet, while on this survey depths to 335 feet were found. The trend of the bottom contours of this survey showed good agreement with that of the prior surveys. concur

L. COMPARISON WITH THE CHART ✓

This survey was compared to NOAA Chart 13309, Penobscot River, 23rd Ed., dated 24 March 1984.

In general, Chart 13309 is an accurate depiction of the northern Penobscot Bay area. The trend of the soundings and depth contours show good agreement with this survey. A few discrepancies have been noted and will be discussed further: concur

As mentioned in section H., SHORELINE, the charted islet at position 44°22'58"N, 68°53'36"W, in Turtle Head Cove, was not found. A rock awash, at position 44°22'57.32"N, 68°53'36.5"W (d.p. position no. 195) was observed at that location. It is recommended that a rock awash symbol with a dotted circle around it should be charted in place of the islet. Chart rock uncovers 1 foot MLW. concur

On Chart 13309 there is a rock awash in Turtle Head Cove plotted at 44°22'52"N, 68°53'31"W. This rock was searched for but not found, despite extensive developments in the area. It is recommended that this symbol be removed from the chart. concur

A detached position (no. 196) was taken on the shoal area immediately northwest of the aforementioned islet, in Turtle Head Cove. On Chart 13309 a 3 foot sounding is plotted. The leadline depth on this shoal was corrected to 4.4 feet, at position 44°22'58.48"N, 68°53'39.86"W. It is possible that the 3 foot sounding does exist, and should remain as charted. See Section 6 of Evaluation Report.

On the east side of Islesboro Island, near the community of Pripet, a small point of land juts out at the terminus of a dirt road. On the 22nd ED. of Chart 13309 a pier symbol is plotted on this point, but is left off of the 23rd ED. This ruined stone pier was observed in the field and a detached position was taken on its end (position 2431). The ruins are grass covered and should be charted, at latitude 44°22'11.33"N, longitude 68°51'54.84"W.

Also near this point is the terminus of a phone cable, which was discussed in section H. The cable area that is plotted on Chart 13309 from Wadsworth Cove to Islesboro Island at Pripet is accurate. The New England Telephone and Telegraph Company was contacted and they confirmed that a cable still exists there, although no longer used. No evidence was found of any cables running from Dice Head to Coombs Point. The Bangor Hydro-Electric Company was contacted and they confirmed that there still exists a cable as charted, although it is not in use. It is recommended that the cable areas, as charted, remain. concur

On TP-01110 there is a note asking the hydrographer to verify the shoreline between Islesboro Island and Hutchins Island, in Parker Cove. Chart 13309 is accurate in depicting the area baring at low water and covered at high water. The 22nd Edition was incorrect, having shown the area connected at high water.. concur

As stated in section K., COMPARISON WITH PRIOR SURVEYS, the 10 foot sounding and 16 foot sounding immediately east of Parker Cove were extensively seached for but not found. Inhabitants of the area had no knowledge of these soundings. It is recommended that these soundings be removed from the chart. concur

Developmental sounding lines were run over Islesboro Ledge, which is east of Hutchins Island. On JD 180 a dive took place on Islesboro Ledge to determine if evidence of a wreck could be found on the ledge. The divers found a rocky ledge with small pieces of timber and some metal parts interspersed amongst the rocks. This material is thought to be the only remains left of the vessel that struck the ledge. The divers found a least depth of 8.4 feet on the ledge (position 8375) at position ~~44°22'07.45"N, 68°52'32.02"W~~ 44°21'00.20"N, 68°51'27.48"W. This dive was in search of PSR Item No. 03010.

Since no wreck was found on Islesboro Ledge it is recommended that the wreck symbol be removed from the chart. Do not concur, retain as charted See Section 7 of Final Report

As stated in section H., SHORELINE, the area north of Perkins Point to Cape Rosier is accurately depicted except where noted. It is recommended that the submerged rock found by divers (J.D. 180, position 8374) off of Blockhouse Point be charted and that the rock off of the northwest point of Cape Rosier be removed. Position 8374 is located at latitude 44°23'40.64"N, longitude 68°49'23.70"W. Remove charted rock at latitude 44°21'02"N, longitude 68°49'22"W. concur

Forty-five soundings from Chart 13309 were compared to this survey. Good agreement was found in the comparison of depth curves, with the majority of comparisons ±5 feet. The only major difference in soundings is in the area between Parker Cove and Holbrook Island. A bottom configuration deeper than that shown on the chart was found. This feature has depths to 337 feet. The chart has a greatest depth in this area to only 276 feet. Due to the few sounding lines run in this area the feature was probably missed on the prior survey. concur

The spelling of geographic names on Chart 13309 was found to be accurate in all cases. No additional names or name changes are necessary on the chart. concur

M. ADEQUACY OF THE SURVEY ✓

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

N. AIDS TO NAVIGATION ✓

A total of four buoys and one light were positioned for this survey. The descriptions and positions follows:

Description of Aid	Position No.	Latitude	Longitude
Black Can, No. 1, Fl G 4 sec, Gong	130	44°25'04.~~79~~ 3"N	68°52'~~26.89~~ 27.00"W
Black Can, No. 9	5316	44°~~21 00.05~~ 20 59 84"N	68°51'24.0~~9~~ 2"W
Green Can, No. 1A	1767	44°22'41.~~54~~ 85"N	68°48'52.~~96~~ 73"W
Black and White Channel buoy, "CH", Bell	1768	44°22'~~28.99~~ 9.27"N	68°49'05.~~76~~ 50"W
Dice Head Light, Fl 6 sec, 27 feet, 12 miles	Positioned by geodetic party	44°22'53.375"N	68°49'11.391"W

The buoy that marks Otter Rock Shoal at the entrance to Castine Harbor is no longer a black can. It is now a green can. Chart 13309, 23rd Ed., has a black can at this location. It is recommended that this be changed. concur

The light at Dice Head is a new structure. It is a skeletal tower on a cement pad, located near the high water line on the rocks. This light replaces an older light at the same location.

All the above mentioned buoys serve their intended purpose. concur

O. STATISTICS ✓

Linear Nautical Miles of Mainscheme Hydrography	281.0
Linear Nautical Miles of Crosslines	15.3
Linear Nautical Miles of Developments	33.6
Total Miscellaneous Nautical Miles	119.9
Square Nautical Miles of Hydrography	12.6
Total Number of Positions	3~~276~~ 10
Nansen Casts	4
Bottom Samples	~~99~~ 105
Dive Investigations	2

P. MISCELLANEOUS ✓

Early in the field season a problem was found with the computer on launch 2226. This problem was such that all of the work from 2226 was rejected. This work was re-done by other launches. Launch 2226 was not used on this survey after the problem was identified.

There were two cable areas just outside the limits of this survey that were confirmed as existing by Bangor Hydro-Electric Company and Central Maine Power. They are the cables crossing from Castine to Nautilus Island and from Holbrook Island to Goose Falls. These cables are reported to be still in use.

No unusual tidal currents were observed in the survey area.

Bottom samples were collected and sent to the Smithsonian as per the project instructions.

While at anchor and transiting the survey area, MT. MITCHELL obtained Loran-C data to be forwarded to the U.S. Coast Guard.

A Danger To Navigation letter was written and sent describing the dangerous submerged rock off of Blockhouse Point (see section H.).
See letter dated July 17, 1984

The January, 1984 edition of the U.S. Coast Pilot, No. 1, was carefully checked in the field. No changes are recommended.

Q. RECOMMENDATION ✓

It is recommended that this survey supercede all prior surveys. concur

R. AUTOMATED DATA PROCESSING ✓

The following HYDROPLOT programs were used to acquire and process the data:

Program	Program Name	Version
RK112	Hyperbolic R/R Hydroplot	10/12/83
RK116	Range/Azimuth Hydroplot	10/12/83
RK201	Grid, Signal and Lattice Plot	4/18/75
RK211	Range/Range Non-Real Time Plot	2/13/84
RK216	Range/Azimuth Non-Real Time Plot	2/24/84
RK300	Utility Computations	10/21/80
RK330	Data Reformat and Check	5/4/75
RK530	Layer Corrections for Velocity	5/10/76
RK561	H/R Geodetic Calibration	12/01/82
RK602	Extended Line Oriented Editor	12/08/82
PM360	Electronic Corrector Abstract	2/2/76
AM500	Predicted Tide Generator	11/10/72

In addition to the above programs, the H-P Geodetic Package Program (no. 811101) and the H-P 3810 Range/Azimuth Calibration Program (version 2/22/81) were used.

S. REFERENCE TO REPORTS

Coast Pilot Report
Horizontal Control Report
Loran-C Comparison Report
Danger to Navigation Letter

Respectively submitted,

Roger L. Parsons

for John A. Miller,
ENS., NOAA

...Oceanic and Atmospheric Administration
NOAA Ship MT MITCHELL S-222
439 West York Street
Norfolk, Virginia 23510

July 17, 1984

TO: Director, N/CG222
Charting and Geodetic Services

THRU: Director, MOA
Atlantic Marine Center

FROM: /s/ Commanding Officer
NOAA Ship MT MITCHELL S-222

SUBJECT: Danger to Navigation

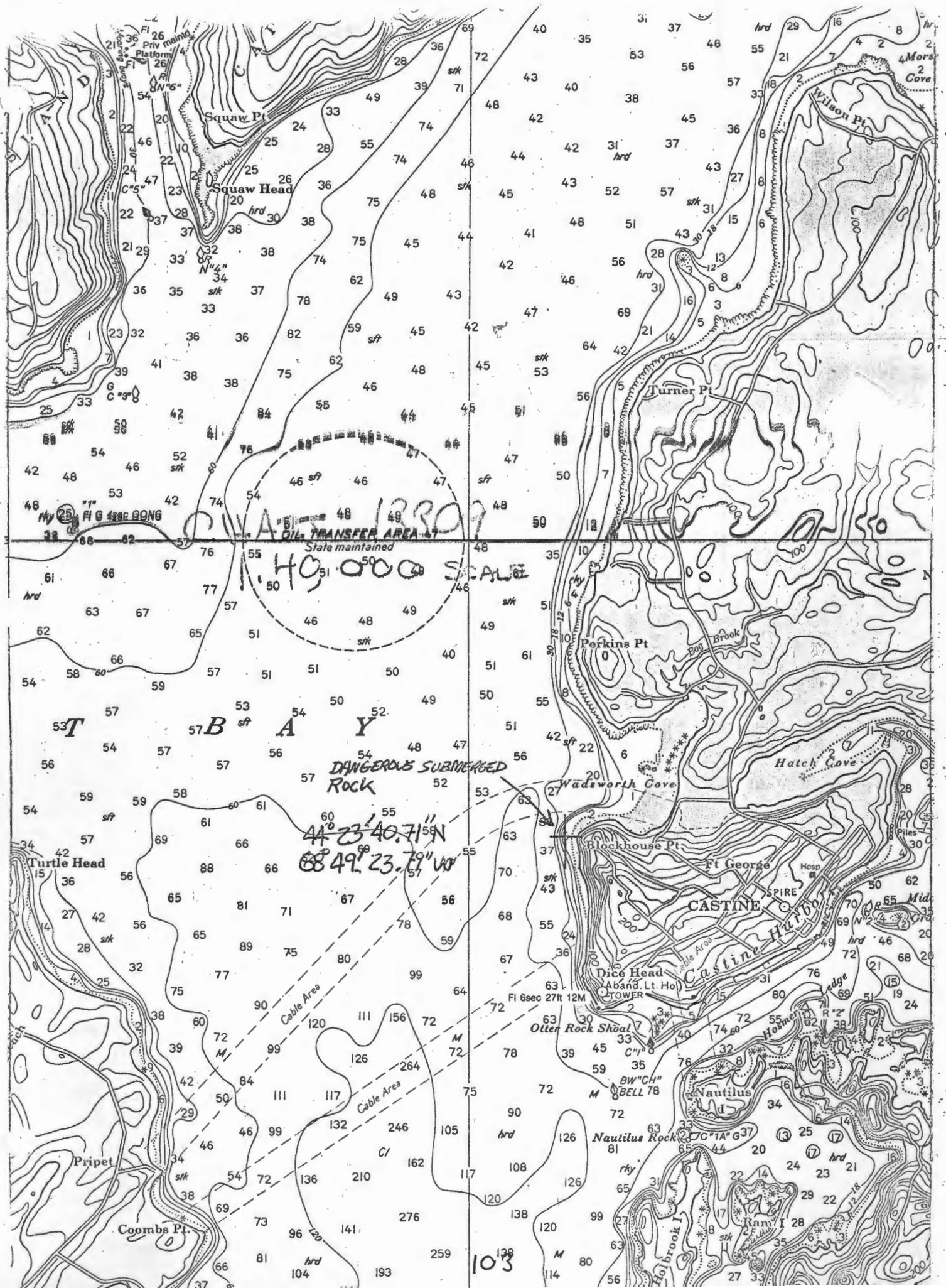
During hydrographic operations on OPR-A166-MI/HFP-84, Penobscot Bay, Maine, a dangerous submerged rock having a least depth of one (1) foot at low water was discovered off Blockhouse Point in twenty (20) feet of water. The following are the results of the investigation:

Least Depth	Latitude	Longitude	Charts Affected
1'0	44°23'40.7"	68°49'23.8"	13302, 13309

The above mentioned information should be included in the next Notice to Mariners.

Enclosed is a chartlet showing the location of the dangerous submerged rock.

enclosure


Squaw Pt
Squaw Head
Wilson Pt
Turner Pt
Perkins Pt
Bog Brook
Hatch Cove
Wadsworth Cove
Blockhouse Pt
Ft George
CASTINE
SPIRE
Castine Harbor
Dice Head
(Aband. Lt. Ho)
TOWER
Fl 6sec 27ft 12M
Otter Rock Shoal
Nautilus
Nautilus Rock
Ram I
Holbrook I
Turtle Head
Pripet
Coombs Pt.
Cable Area
Ledge
Hosmer
DANGEROUS SUBMERGED ROCK
44° 23' 40.71" N
68° 49' 23.79" W
OIL TRANSFER AREA
State maintained
CHART 1230?
H.O. 800 SCALE
103

National Oceanic and Atmospheric Administr
NATIONAL OCEAN SERVICE
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

September 20, 1984

Commander (OAN)
First Coast Guard District
150 Causeway Street
Boston, Massachusetts 02114

Dear Sir:

During preliminary office review of hydrographic survey H-10131, Approaches to the Penobscot River, E. Penobscot Bay, Maine, an uncharted rock was noted and was considered a danger to navigation. Questions concerning the survey may be directed to Lt. Cdr. David W. Yeager, Chief, Nautical Chart Branch, telephone (206) 526-6835.

The following statement is recommended for inclusion in the Local Notice to Mariners:

"An uncharted rock uncovered 1.7 ft. at MLW (based on predicted tides) is at latitude 44°24'02"N, longitude 68°48'58"W, in Wadsworth Cove (charts 13302 and 13309)."

Sincerely,

Robert L. Sandquist
Rear Admiral, NOAA
Director, Pacific Marine Center

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

Date : 7 November 1984

To : LCDR David MacFarland
Chief, Hydrographic Survey Branch

From : Gregory T. Bass LCOR, NOAA
for Commanding Officer
NOAA Ship Mt. Mitchell S-222

Subject : Survey Launch TRA Measurements

Following a remeasurement of the transducer drafts on VESNO's 2223, 2224, 2225 and 2226, a TRA of 1.8 feet (0.3 fathoms) was found to exist on all launches.

Previous work showing a TRA of 2.1 feet is incorrect and should be updated to reflect the 1.8 feet value.

cc:
MOA2x1
MOP2x1

APPROVAL SHEET

The field work on this Hydrographic Survey was under my daily supervision. The boat sheet and records have been reviewed and approved by me.

Joseph W. Dropp Captain, NOAA
Commanding Officer
NOAA SHIP MT. MITCHELL

MASTER SIGNAL G.P.'S
MAINE
MI-10-3-84 "H" EAST & WEST
H-10131

~~040~~	~~4~~	~~44~~	~~25~~	~~50915~~	~~068~~	~~48~~	~~33980~~	~~250~~	~~0003~~	~~000000~~ TURNER, ~~1982~~
049	4	44	22	57609	068	49	10350	139	0045	000000 DICE HEAD LIGHT HOUSE, ~~1984~~ ECC
050	4	44	22	57572	068	49	10300	139	0045	000000 DICE HEAD LIGHT HOUSE, ~~1862~~
060	4	44	21	33822	068	51	59750	139	0002	000000 FLAG, 1982~~3~~
062	4	44	20	02633	068	49	31947	139	0015	000000 ORRS HILL, 1911
070	4	44	23	34948	068	52	50527	250	0006	000000 TURTLE, ~~1982~~
090	4	44	22	50167	068	58	06405	250	0006	000000 BAYSIDE, ~~1983~~
*095	4	44	25	09192	068	58	22461	139	0006	000000 STEEL LEDGE MONUMENT LIGHT, 1911
101	4	44	25	41948	068	56	48096	139	0005	000000 MOOSE, 1982~~3~~
110	4	44	27	07156	068	55	30610	250	0002	000000 SEARS, ~~1983~~
~~112~~	~~4~~	44	27	34920	068	55	32110	~~139~~	~~0000~~	~~000000~~ ~~SEARSPORT CHURCH SPIRE, 1862~~
~~121~~	~~4~~	~~44~~	~~28~~	~~27855~~	~~068~~	~~53~~	~~15911~~	~~139~~	~~0000~~	~~000000~~ ~~WEST STOCKTON WHITE CH SPIRE,~~ 1911
127	4	44	25	49679	068	53	00427	139	0000	000000 SEARS ISLAND RADIO TWR, ~~1983~~
130	4	44	27	05941	068	50	37994	250	0005	000000 SQUAW, ~~1982~~
132	4	44	27	39489	068	48	38212	139	0005	000000 FORT POINT LEDGE BEACON, ~~1911~~
~~*092~~	~~4~~	~~44~~	~~22~~	~~23.087~~	~~068~~	~~58~~	~~06.806~~	~~139~~		~~EAST NORTHPORT BLACK WATER TK, 193~~

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [x] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GP
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [x] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
NOAA Ship Mt Mitchell	Maine	Castine, Penobscot Bay	10 July '84

The following objects HAVE [x] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
AI66-MI/HFP-84		H-10131	NAD 1927

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE N ° ′	″ D.M. Meters	LONGITUDE W ° ′	″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
LIGHT	This is a recent light at Dice Head replacing an older light. It is a gray painted skeletal structure about 27' in elevation located on a cement base. This position is a Third Order, Class II intersection with a distance check. The station is the top center of the white light. Stations used to position this light are ORRS HILL 1911, FLAG 1982 and TURTLE 1982	44 22	53.375	68 49	11.391		F-3-6-L	13302 13309

101

L-892(84)

FIELD TIDE NOTE

Field tide reduction of soundings were based on Predicted Tides from Portland, Maine, and were corrected to OPR-A166-MI/HFP-84 zoning, utilizing a PDP8/E Computer and Program RK500. All times of both Predicted and Recorded Tides are Universal Coordinated Time (GMT).

The number and type of Tide Gages installed, their geographic locations, dates of installation/removal, Leveling, Plane of Reference and period of operation are appended to this note, along with a copy of a letter to OA/C23 requesting verified hourly heights of tides from gages listed in this report.

The respective gages reportedly operated properly/improperly during this Project, with any exceptions noted under "REMARKS" on the appended Tide Gage Sheets.

FIELD TIDE NOTE

TIDE GAGE REPORT

NOS TIDE TABLE NUMBER: 773 TIME MERIDIAN 75 ° W

GEOGRAPHIC LOCALE: Coast Guard Base Rockland, Maine

NAME: Rockland, Maine STATION NUMBER: 841-5490

LATITUDE: 44°06.2' N , LONGITUDE: 069°06.1' W

TYPE OF GAGE: X ADR, X BUBBLER, ___ OTHER (_____)

PLANE OF REFERENCE: ___ MLW, X MLLW, ___ GCLWD, ___ OTHER, CORRESPONDS

TO _____ FEET ON THE TIDE STAFF FOR THE PERIOD _____ TO _____

DATED INSTALLED: Feb. or Mar.83 BY: AMC Tides Party

DATE REMOVED: _____ BY: _____

DATE LEVELED: 11 April 84 BY: NOAA Ship MT. MITCHELL

22 June 84 NOAA Ship MT.MITCHELL

REMARKS: Rockland was the primary tide station for all survey work.

FIELD TIDE NOTE

TIDE GAGE REPORT

NOS TIDE TABLE NUMBER: 769 TIME MERIDIAN 75 ° W

GEOGRAPHIC LOCALE: Belfast, Maine

NAME: Belfast STATION NUMBER: 841-5191

LATITUDE: 44°25'45" N , LONGITUDE: 69°00'16" W

TYPE OF GAGE: X ADR, ___ BUBBLER, ___ OTHER (_____)

PLANE OF REFERENCE: ___ MLW, X MLLW, ___ GCLWD, ___ OTHER, CORRESPONDS

TO _____ FEET ON THE TIDE STAFF FOR THE PERIOD _____ TO _____

DATED INSTALLED: 12 April 84 BY: NOAA Ship MT. MITCHELL

DATE REMOVED: 30 June 84 BY: NOAA Ship MT. MITCHELL

DATE LEVELED: 12,13,17 April 84 BY: NOAA Ship MT. MITCHELL
27 June 84 NOAA Ship MT. MITCHELL

REMARKS:

DATE	EVENT
17 April 84	releveled to BM 5191A after staff readjusted
20 April 84	kink taken out of wire
11 May 84	near broken wire repaired
12 May 84	gage knocked into water during storm
14 May 84	new gage installed
15 May 84	punch block jammed up - repaired
4 June 84	" "
12 June 84	negator spring knocked off - repaired

FIELD TIDE NOTE

TIDE GAGE REPORT

NOS TIDE TABLE NUMBER: 877 TIME MERIDIAN 75 ° W

GEOGRAPHIC LOCALE: Sandy Point, Penobscot River, Maine

NAME: Sandy Point STATION NUMBER: 841-4692

LATITUDE: 44°30'20" N , LONGITUDE: 68°48'16" W

TYPE OF GAGE: x ADR, ___ BUBBLER, ___ OTHER (_____)

PLANE OF REFERENCE: ___ MLW, x MLLW, ___ GCLWD, ___ OTHER, CORRESPONDS TO _____ FEET ON THE TIDE STAFF FOR THE PERIOD _____ TO _____

DATED INSTALLED: 7 May 84 // BY: NOAA Ship MT. MITCHELL

DATE REMOVED: 26 June 84 BY: NOAA Ship MT. MITCHELL

DATE LEVELED: 7 May 84 BY: NOAA Ship MT. MITCHELL

22 June 84 NOAA Ship MT. MITCHELL

REMARKS:

DATE	EVENT
15 May 84	punch block jammed up- repaired
19 May 84	punch block loose - repaired
30 May 84	punch block jammed up - repaired

NOTE : A letter was sent to Chief, N/OMS12 on 30 May, 1984 concerning the tide gage to staff comparison. The gage was observed to read higher than the staff by as much as o.25 feet during times from slack before ebb up to approximately one hour before max ebb.

APPENDIX "B"

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY

Date : 2 JUL 1984

To : Chief, Tides and Water Levels Branch, N/OMS12

From : Commanding Officer
NOAA Ship Mt. Mitchell S-222

Subj. : Tidal Data for Hydrographic Survey H-10131
OPR-A166-MI-84, Penobscot Bay, Maine

It is requested that verified hourly heights of Tides, using Coordinated Universal Time, from the Operating Tide Gages listed below, be forwarded to the Processing Division (MOA23), Atlantic Marine Center, Norfolk, VA. 23510

GAGE NAME	NUMBER	LATITUDE	LONGITUDE
PORTLAND, ME. (Reference)	877 (Tide-Tables)	43°40.0'N	070°15.0'W
ROCKLAND, ME. (Control)	841-5490	44°06.2'N	069°06.1'W
BELFAST, ME (Zone)	841-5191	44°25.6'N	069°00.0'W

It is requested that the Time and Height Correctors for each Gage be Zoned as per Project Instructions for the area described within the following points:

LATITUDE 44°18'10"N, 44°25'34"N, 44°25'34"N, 44°18'10"N
LONGITUDE 68°54'30"W, 68°54'30"W, 68°47'42"W, 68°47'42"W

This information is requested for the following Dates and Times:

4/21/84 JD112 0000UCT thru 2359UCT 4/25/84 JD 116
4/27/84 JD118 0000UCT thru 2359UCT 4/27/84 JD 118
5/01/84 JD122 0000UCT thru 2359UCT 5/01/84 JD 122
5/05/84 JD126 0000UCT thru 2359UCT 5/05/84 JD 126
5/09/84 JD130 0000UCT thru 2359UCT 5/10/84 JD 131
5/30/84 JD151 0000UCT thru 2359UCT 6/01/84 JD 153
6/12/84 JD164 0000UCT thru 2359UCT 6/12/84 JD 164
6/18/84 JD170 0000UCT thru 2359UCT 6/22/84 JD 174
6/26/84 JD178 0000UCT thru 2359UCT 6/26/84 JD 178

DATE: 10/9/84

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: A166

Hydrographic Sheet: H-10131

Locality: Penobscot Bay, Maine

Time Period: April 21 - June 26, 1984

Tide Station Used: 841-4692, Sandy Point, ME
841-5191, Belfast, ME

Plane of Reference (Mean ~~Lower~~ Low Water): * 841-4692 = 7.64 ft.
841-5191 = 3.22 ft.

Height of Mean High Water Above Plane of Reference: 841-4692 = 10.5 ft.
841-5191 = 10.2 ft.

Remarks: Recommended Zoning:

1. North of latitude 44°23.0' to 44°25.5' zone on 841-4692 and apply x0.95 range ratio. For J Day 112 to J-Day 128 when the tide gage 841-4692 was inoperative zone on 841-5191 and apply x0.98 range ratio. (SEE NOTE)
2. South of latitude 44°23.0' to 44°18.0' zone on 841-4692 and apply x0.93 range ratio. For J-Day 112 to J-Day 128 when the tide gage at 841-4692 was inoperative zone on 841-5191 and apply x0.96 range ratio, (SEE NOTE)

* FROM PHONE CONV. W/JOE MULLEN 10-18-84.

NOTE: GAGE 841-4692 ALSO INOPERATIVE DURING J-DAY 178-180.

for Donald Cannis
Chief, Tidal Datums Section

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10131

GEOGRAPHIC NAMES

Name on Survey Maine, Penobscot Bay Perkins Point to Hutchins Island	A ON CHART NO. 13302	B ON PREVIOUS SURVEY NO. 13309	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	
Blackhouse Point										1
Cape Rosier										2
Coombs Cover										3
Coombs Point										4
Dice Head										5
Holbrook Island										6
Hutchins Island										7
Islesboro Island										8
Islesboro Ledges										9
Marshall Point										10
Otter Rock Shoal										11
Parker Cove										12
Penobscot Bay										13
Perkins Point										14
Point Comfort										15
Spragues Beach										16
The Bare Ledges										17
Turtle Head										18
Turtle Head Cove										19
Wadsworth Cove										20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H) (9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10131

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	6
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	5

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES	5					
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List): TP-01110, 01111 Enlargements

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS: VERIFICATION	AMOUNTS: EVALUATION	AMOUNTS: TOTALS
POSITIONS ON SHEET			3201
POSITIONS REVISED	3064		
SOUNDINGS REVISED			3064
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION	7		7
VERIFICATION OF CONTROL	4		4
VERIFICATION OF POSITIONS	40.5		40.5
VERIFICATION OF SOUNDINGS	177.5		177.5
VERIFICATION OF JUNCTIONS	2.0		2.0
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION	5.0		5.0
COMPILATION OF SMOOTH SHEET	58.5		58.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		19.5	19.5
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT / Verifier's	4.0	15.0	19.0
GEOGRAPHIC NAMES			
OTHER: Digitization, Evaluation, Other Remarks, Review		19.0	11.0
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	298.5	53.5	344.0

Pre-processing Examination by J.L. Stringham, P.M. Niland	*Beginning Date* 10/4/84	*Ending Date* 10/4/84
Verification of Field Data by P.M. Niland	*Processing Began* 10/4/84	*Ending Date* 6/29/85
Verification Check by J.L. Stringham, B.A. Olmstead	*Time (Hours)* 66.5	*Ending Date* 7/11/85
Evaluation and Analysis by R. Davies	*Time (Hours)* 53.5	*Ending Date* 8/14/85
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 8/19/85

☆ U.S. GOVT. PRINTING OFFICE 1983: 764-006/6061

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10131

1. INTRODUCTION

H-10131 was accomplished by the NOAA Ship MT. MITCHELL in accordance with the following project instructions:

OPR-A166-MI/HFP-84, dated March 20, 1984
Change No. 1, dated May 14, 1984

This is a basic hydrographic survey of Penobscot Bay, Maine. The survey extends from Cape Rosier and Coombs Cove on Islesboro Island in the south to Perkins Point and two nautical miles north and one nautical mile west of Turtle Head on Islesboro Island.

Predicted tides based on the Portland, Maine gage with time and range adjustments were utilized during shipboard processing. Tide correctors used for the reduction of the final soundings are computed from approved hourly heights from two temporary tide gages, Sandy Point and Belfast, Maine.

Projection parameters were changed to center the hydrography on the smooth sheet and to change the projection to polyconic.

The TC/TI correctors were changed to reflect corrections made during processing, because of incorrect TRA computations. See attached letter dated November 7, 1984 from the Commanding Officer of NOAA Ship MT. MITCHELL.

2. CONTROL AND SHORELINE

All horizontal control stations used for controlling hydrography were established in accordance with Third Order Class I or better geodetic standards. The smooth sheet was plotted using published NGS coordinates for existing stations, preliminary adjusted field and aerotriangulation positions for newly established stations.

Hydrographic positioning was conducted using Del Norte, configured in both range-range and range-azimuth modes. Baseline calibrations were performed before and after completing the hydrography. Daily system checks to confirm the baseline values were conducted using sextant resection to signals and range-azimuth calibrations.

All remaining information affecting the positioning and station control of this survey is contained in paragraph F and G of the Descriptive report, the Horizontal Control Report, and other supplemental data submitted with this survey.

The applicable reviewed Class III shoreline manuscripts and dates are as follows:

Manuscript Number	Date of Photography
TP-01110	June, July, August, 1982
TP-01111	June, July, August, 1982

The mean high waterline was not shown on the smooth sheet, except the shoreline around Hutchins Island centered at latitude 44°21'05"N, longitude 68°52'15"W and three small islands near The Bare Ledges. The ledge along the shoreline of Cape Rosier centered at latitude 44°21'00"N, longitude 68°49'20"W was shown on the smooth sheet in lieu of the sounding lines. The positioning control for the hydrography was weak and the ledge limits from the photogrammetric manuscript better define the area.

All other foreshore/offshore features which are awash or uncovered at the sounding datum but are covered at mean high water were transferred to the survey.

3. HYDROGRAPHY

Crossline soundings are in good agreement. Generally, all standard depth curves are complete and satisfactory, except in areas that are foul and those with steeply sloping shoreline.

The bottom configuration and least depths were adequately determined with the exception of the following:

Depths (ft)	Latitude (N)	Longitude (W)
3	44°22'58.08"	68°53'39.42"
8	44°23'00.66"	68°53'52.75"

A holiday appears in an area west of The Bare Ledges at latitude 44°21'15"N, longitude 68°52'15"W. A note is inked on the smooth sheet explaining that this area bares at low water.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual except as noted in the Preprocessing Examination Report, dated September 20, 1984 and the following:

a. Some soundings warranted further development to locate the least depths (see Section 3, Hydrography). The investigation of these features was incomplete (Hydrographic Manual 4.3.4).

b. Dice Head Light was repositioned and a new geodetic position was observed by the geodetic survey party and a 76-40 form was submitted with H-10131 with the revised position. This fixed aid to navigation did not appear on the final field sheet. All fixed aids to navigation within the survey area are required to be plotted on the final field sheet (Hydrographic Manual 4.2.1).

c. When making a chart comparison, only soundings or charted features which do not originate from the prior surveys should be discussed (Hydrographic Manual 5.3.4.K,L).

d. Graphic presentation of hydrographic observations on final field sheets is poor. Field sheets should be as complete a record as possible of the hydrographer's observations with dependence on overlays and supplemental reports restricted to situations requiring clarification of information summarized on final field sheets.

e. The investigation of AWOIS Item 03010 was incomplete. The hydrographer should supply the method of the search, length of time spent in examination, visibility, extent of ledge investigation by divers, and pertinent sketches. Also the fact that the echo sounder obtained a depth shoaler than the diver lead-line depth gives the appearance that the area was not adequately investigated to support the hydrographer's recommendation to remove the wreck symbol from the chart.

5. JUNCTIONS

H-10131 is bordered by H-10130 (1984) to the north, H-10109 (1983) to the west. H-10173 adjoins H-10131 to the south. This survey is in the field and a junction could not be accomplished. Because of no junctional survey to the south at the time of processing H-10131 the chart was compared to the present survey and depths are in harmony.

6. COMPARISON WITH PRIOR SURVEYS

H-1143 (1871) 1:20,000
H-1258 (1872) 1:20,000
H-1259 (1873) 1:10,000

The present survey soundings compare within ±1 to 5 feet of the prior survey soundings. These differences are attributed to the relative accuracy of the data acquisition techniques and datum adjustments.

The 10- and 16- foot sounding at latitude 44°21'33"N, longitude 68°51'37"W, and latitude 44°21'24"N, longitude 68°51'40"W respectively, adjusted to NAD 1927, from H-1143(1871) were developed with 10 meter line spacing. No indication of these prior soundings exist in the area. Accordingly, the two soundings should be superseded by data by the present survey.

On prior survey H-1258(1872), a 9.5-foot sounding located at latitude 44°23'06"N, longitude 68°53'51"W, adjusted to NAD 1927, was not found, although an 8-foot sounding was found at the present survey in the same vicinity at latitude 44°23'01"N, longitude 68°53'53"W. The 9.5-foot sounding should be superseded by data from the present survey.

A 3-foot sounding on H-1258 located at latitude 44°23'00"N, longitude 68°53'42"W, adjusted to NAD 1927, was not found at the prior survey position but a 3.1-foot sounding in the proximity at latitude 44°22'58"N, longitude

68°53'40"W was found. The 3-foot sounding should be superseded by data from the present survey.

H-10131 is adequate to supersede the prior surveys within the area of common coverage.

7. COMPARISON WITH CHART

Chart 13309, 23rd Edition, dated March 24, 1984

a. Hydrography - Charted information originates with the prior surveys discussed in section 6 of this report and from other miscellaneous sources. For more detail see section L of the hydrographer's report.

One shoreline feature, a ledge, located at Perkins Point centered at latitude 44°24'30"N, longitude 68°49'25"W was confirmed by the hydrographer but its extent was not defined. The ledge should be retained as charted.

AWOIS Item 03010, a submerged wreck on Islesboro Ledge falls within the survey area at latitude 44°21'00.20"N, longitude 68°51'27.48"W. Debris from the submerged wreck was located by divers and a depth of 8.6 feet below MLW was obtained. The submerged wreck should be retained as charted.

With the noted exceptions H-10131 is adequate to supersede charted hydrography within the common area.

The area covered by H-10131 was examined for dangers to navigation. One hazard was found by the hydrographer and reported to N/CG222. One additional danger to navigation was found during the Preprocessing Examination and was reported to the First Coast Guard District (see letter attached) and the DMAHTC via Automated Notice to Mariners System.

b. Controlling Depths - There are no controlling depths within the limits of H-10131.

c. Aids to Navigation - There were four floating aids and one fixed aid to navigation found within the limits of H-10131.

Light List Name	Light List Number	Latitude (N)	Longitude (W)
Islesboro Ledge Buoy 9		44°20'59.84"	68°51'24.02"
Nautilus Rock Buoy 1A		44°22'41.85"	68°48'52.73"
Entrance Bell Buoy CH		44°22'29.27"	68°49'05.50"
Entrance Shoal Lighted Gong Buoy 1	275	44°25'04.73"	68°52'27.00"
Dice Head Light	248	44°22'53.375"	68°49'11.391"

These aids adequately serve the purposes intended.

The geographic names shown on the smooth sheet originated from this chart.

8. COMPLIANCE WITH INSTRUCTIONS

H-10131 adequately complies with the project instructions except where noted in section 4 of this report.

9. ADDITIONAL FIELD WORK

This is an adequate survey and no additional field work is recommended.

Respectfully submitted,

Charles R. Davies

C.R. Davies
Cartographer

This survey has been verified and evaluated. I have examined the survey and it meets Charting and Geodetic Services survey standards and requirements for use in nautical charting. The survey is recommended for approval.

Dennis Hill

Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10131

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

for Chief, Nautical Chart Branch 8-23-85 (Date)

CLEARANCE: SIGNATURE AND DATE:

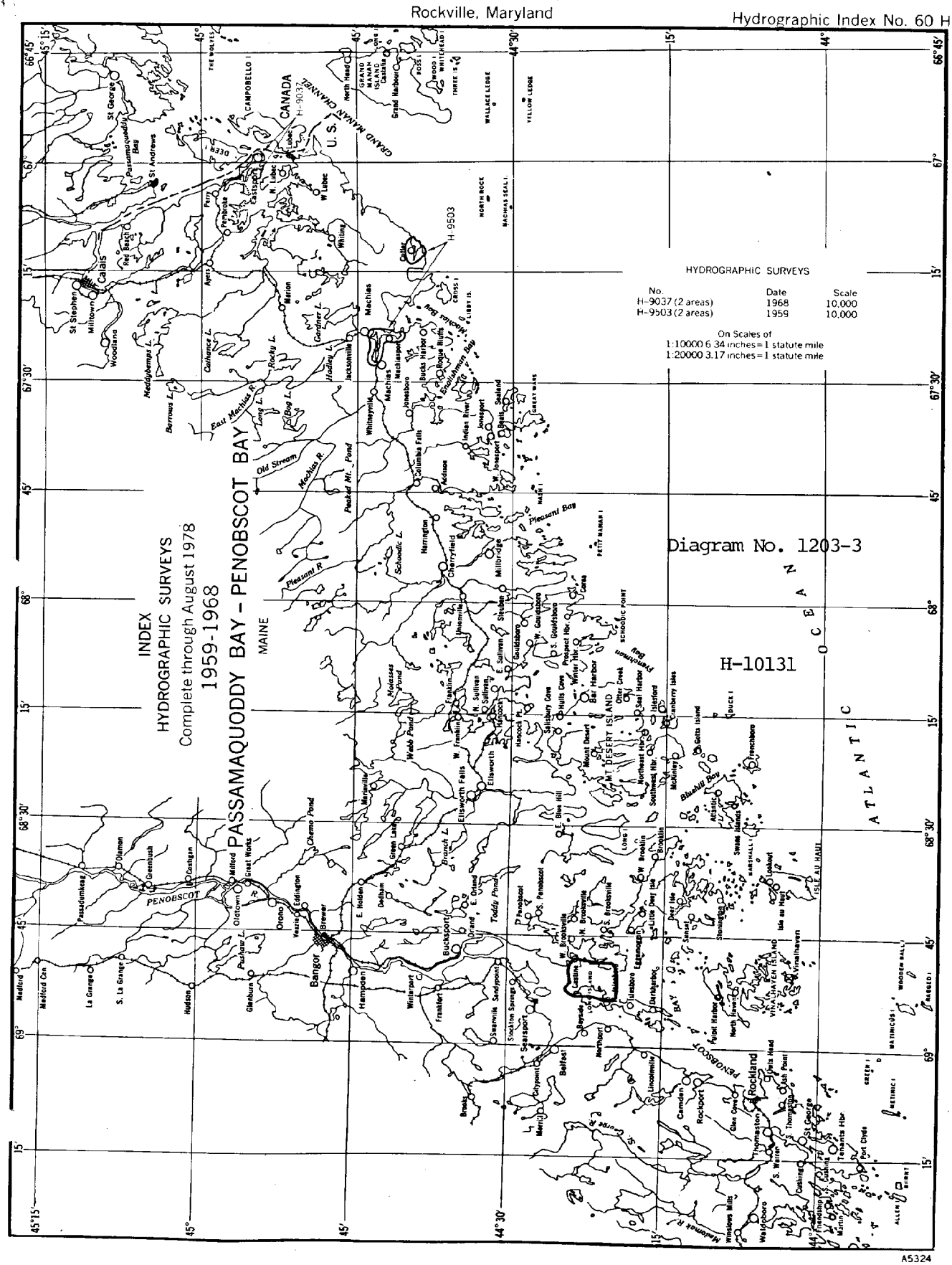
N/MOP2:LWMordock 8/23/85

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Director, Pacific Marine Center 8/23/85 (Date)

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 60 H



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NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10131

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
13309	6/19/89	ALMACEN	Full ~~Part Before~~ After Marine Center Approval Signed Via full application of
			Drawing No. soundings from SS.
13302	8/2/89	ALMACEN	Full ~~Part Before After~~ Marine Center Approval Signed Via FULL APPLICATION OF
			Drawing No. SNDGS FROM S.S. THRU 13309
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Drawing No.
			STANDARDS CK'D 9-23-85
			Cloy

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.