10130

Diagrams 311 & 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-10-1-85

Office No. H-10130

LOCALITY

State Maine

General Locality Penobscot Bay

Locality Fort Point Cove to Moose Point

19 84

CHIEF OF PARTY
CAPT J.W. Dropp

LIBRARY & ARCHIVES

DATE November 4, 1985

☆U.S. GOV. PRINTING OFFICE: 1980—766-230

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

H-10130

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 10-1-84

State Maine

General locality Penobscot Bay

Locality Fort Point Cove to Moose Point

Scale 1:10,000 Date of survey April 21 to June 20, 1984

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

Vessel Launches (2221), (2223), (2224), (2225) & (2226)

Chief of party CAPT. J. W. Dropp

Surveyed by LCDR G.Bass, Lt. R.Parsons, Lt. D.Rice, LTJG G.Yates, ENS J.Miller ENS W.Sites, ENS J.Paeth, ENS K.Peter, ENS D.Sorenson

Soundings taken by echo sounder, hand lead, pole Raytheon DSF6000N, Hand lead

Graphic record scaled by Ship Personnel

Graphic record checked by Ship Personnel

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

Evaluation ~~Verification~~ by A. Luceno

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

REMARKS: Marginal notes in black made by evaluator. Separates are filed with hydrographic data.

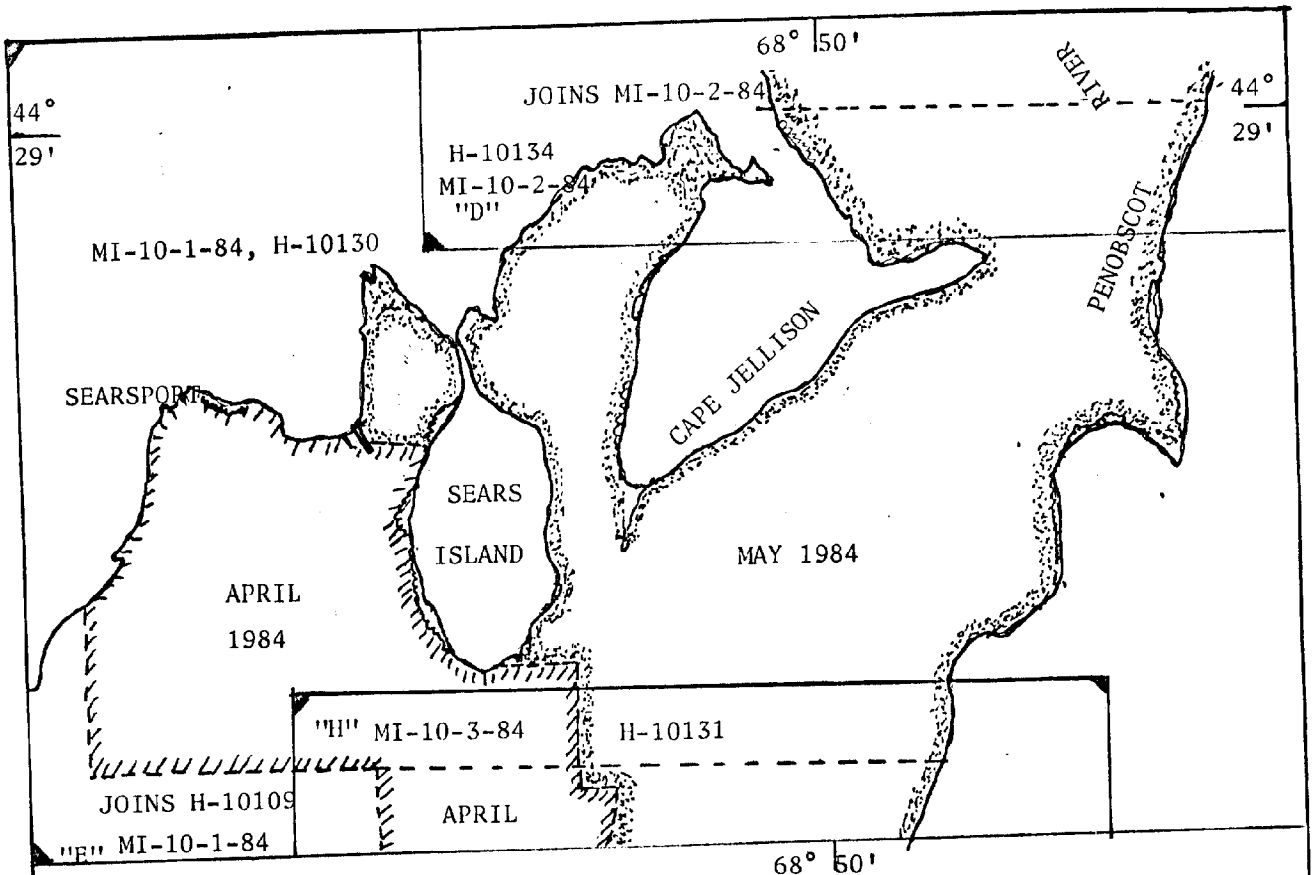
STANDARDS CK'D 11-6-85
C.Lay

4-16-97

AWOIS and SURFU 3/89 SBB

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

☆ U. S. GOVERNMENT PRINTING OFFICE: 1976—665-661/1222 REGION NO. 6



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

SCALE OF CHART 13302

"LEGEND"

APRIL	MAY	JUNE	
227.6	637.1	330.7	LNM LAUNCH HYDRO
7.75	19.6	7.9	SNM LAUNCH HYDRO
174.5	288.8	242.8	MISC. MILES
140.5	506.3	492.1	TO & FM MILES
532.4	1432.2	1108.8	TOTAL MILES
87	156	51	BOTTOM SAMPLES
2	2	4	NANSEN CASTS
4	2	0	TDC CASTS
15	25	**25**	SEA DAYS
		16.6	WIRE DRAG LNM

SHEET ONE

TABLE OF CONTENTS

DESCRIPTIVE REPORT TO
ACCOMPANY SURVEY H-10130
(MI-10-1-84)

Penobscot Bay and River, Maine

A. PROJECT

This survey was conducted in accordance with Project Instructions OPR-A166-MI/HFP-84, Penobscot Bay and River, Maine dated March 20, 1984 and amended by Change No. 1 dated May 14, 1984 *and Change No. 2 dated December 7, 1984.*

B. AREA SURVEYED

The area surveyed is bounded on the north by Latitude 44°29'12"N, and on the south by Latitude 44°25'00"N. It is bounded on the west by Longitude 68°56'12"W, and on the east by the eastern shore of the Penobscot River. The general locality of the survey is North Penobscot Bay, Fort Point to Moose Point, Maine.

The survey commenced on JD 112 and was completed on JD 172. Survey data was collected on the following dates:

JULIAN DATES	CALENDAR DATES
112-118	April 21 to April 27, 1984
122-124	May 1 to May 3, 1984
126-132	May 12 to May 18, 1984
136-143	May 22 to May 29, 1984
150-153	May 29 to June 1, 1984
156	June 4, 1984
171	June 19, 1984
172	June 20, 1984

C. SOUNDING VESSEL

Soundings for this survey were obtained by the following vessels:

VESNO 2221	(Monark)
VESNO 2223	(Launch 1008)
VESNO 2224	(Launch 1002)
VESNO 2225	(Launch 1012)
VESNO 2226	(Launch 1004)

On JD 140 Pole soundings were obtained utilizing a sounding pole with a prism mounted on it. Ranges and azimuths were measured to it with an HP 3810 B EDM from station KID. These soundings were assigned position numbers 8000 to 8037, VESNO 2221.

There were no other unusual vessel configurations.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

The following sounding equipment was aboard the following vessels during this survey:

VESNO	Equipment	Serial Number	Julian Dates
2223	Raytheon DSF 6000N	B041 N	112-153
2224	Raytheon DSF 6000N	A106 N	112-151
2225	Raytheon DSF 6000N	A110 N	112-140
2226	Raytheon DSF 6000N	A108 N	112-131
2221	Raytheon DE 719 C	9947	117-172

All survey records were scanned by trained Survey Department personnel and Commissioned Officers and were checked by the Officer-in-Charge. Significant peaks and deeps occurring between soundings, as well as misdigitized soundings were inserted and corrected utilizing the electronic corrector tape. ✓

While surveying with the Raytheon DSF 6000N Echo Sounder, both wide and narrow beam signals were transmitted but only the narrow beam sounding was digitized. A daily echo-simulator test was conducted using an Electronic Device, Inc. (EDI), Model 3A, Depth Sounder Test Set.

Soundings from survey vessels 2223, 2224, 2225 and 2226 were taken with a hull-mounted dual frequency transducer and a TRA of 2.1 feet was applied during offline processing. The antenna distance for these vessels was 0.0 meters.

Soundings from survey vessel 2221 were taken with a gunwhale mounted portable transducer. The TRA was determined by direct measurement with a metal tape measure. Antenna distance for this vessel is 0.0 meters as the master unit is located directly above the transducer mount. *Refer to Sect. 1 of Eval. Report*

Bar checks were obtained prior to and following the collection of each days sounding data when practical. Due to high tidal current conditions in the survey area, several bar check results were less than desirable because of the inability in keeping the bar beneath the transducer. After rejection of questionable bar check results, the Nansen cast and bar check data compared favorably. ✓

Refer to Appendix D for a complete Velocity Corrections Report. *Filed with separates*

Settlement and Squat tests were conducted on April 30 (VESNO's 2224 and 2225) and May 25, 1984 (VESNO's 2223 and 2226) in Rockland, Maine. Settlement and squat correctors for VESNO 2221 were determined during the 1983 field season and are also included with the report. A copy of the Settlement and Squat Reports and correctors versus RPM's are included in Appendix D. These correctors are incorporated in the TC/TI tapes. Printouts of these tapes are included in Appendix D. as well. *Filed with separates*

This survey was conducted using predicted tides at Belfast, ME. (station number 841-5191), and Sandy Point, ME. (841-4692) for position numbers 2659-2672. The tide gage at U.S. Coast Guard Base, Rockland, ME. (841-5490) was the primary gage for this survey area and was monitored throughout the survey.

Refer to Sect. 1 of Eval. Report

E. HYDROGRAPHIC SHEETS

This survey was plotted on four mylar field sheets by the Hydroplot system onboard MT. MITCHELL as follows:

Number of Sheets	Data	Skew
2	Main Scheme, Developments	0, 21, 60
2 (overlay)	Shoreline, crosslines, Bottom Samples, Detached Positions	0, 21, 60

A 1:5000 scale enlargement of Fort Point Ledge is included at the end of section K.

The field sheets were plotted using grids drawn by program RK201.

This survey was plotted offline utilizing RK211, 212, and 216, predicted tide tapes, electronic corrector tapes and velocity tapes. Soundings on the field sheets have been corrected for draft, predicted tides, initialization errors, digitization errors and sound velocity. The soundings have not been corrected for settlement and squat or smooth tides. These correctors will be applied by the ~~Atlantic~~ Pacific Marine Center Processing Division.

All field records and the following tapes have been forwarded to the ~~Atlantic~~ Pacific Marine Center for verification and smooth plotting:

Master Range/Range Data Tapes (raw and edited)
Master Range/Azimuth Data Tapes (raw and edited)
Electronic Corrector Tapes
Velocity Tapes
Parameter Tapes
Signal Tapes
TC/TI Tapes

F. CONTROL STATIONS

All control stations were at least Third Order, Class I positions established prior to MT. MITCHELL's arrival in Penobscot Bay or by MT. MITCHELL personnel during this survey. The datum used was the North American Datum 1927.

Refer to Sect. 2 of Eval. Report

A list of all signals used in this survey, names and geographic positions, is contained in Appendix F. All stations are monumented and described. A Horizontal Control Report describing the establishment of control by MT. MITCHELL personnel is included with the survey support data.

G. HYDROGRAPHIC POSITION CONTROL

Del Norte trisponders were used for electronic position control during Range/Range control and were used in conjunction with Wild T-2 Theodelites during Range/Azimuth Control. Visual control was established using three-point sextant fixes. On JD: 140 pole soundings were obtained utilizing an HP 3810 B EDM for position control. Ranges and azimuths were measured from a known position (station KID) to a prism mounted on the pole. The following electronic equipment was used during this survey:

VESNO 2221

Equipment	Serial No.	Code	Julian Date
Del Norte DMU	179		117, 129, 142, 172
Del Norte DMU	432		156
Del Norte Master	187	86	117, 129, 142, 172
Del Norte Master	1067	74	156
Del Norte Remote	249	86	129
Del Norte Remote	220	84	117
Del Norte Remote	1062	88	142
Del Norte Remote	1137	74	156
T-2	17801		117, 142, 172
T-2	19293		129, 156
Sextant	T3737		143
HP 3810 B	1929A00340		140, 171

VESNO 2223

Equipment	Serial No.	Code	Julian Date
Del Norte DMU	182		112 - 123, 132
Del Norte DMU	505		127, 128, 136
Del Norte DMU	432		137, 138, 140 - 143
Del Norte DMU	179		139, 150 - 153
Del Norte Master	159	76	112 - 123, 132
Del Norte Master	1318	88	127, 128, 136
Del Norte Master	1067	74	137, 138, 140 - 143
Del Norte Master	187	86	139, 150 - 153
Del Norte Remote	245	72	112 - 122, 132, 137, 138, 142
Del Norte Remote	189	78	112 - 116, 140 - 142
Del Norte Remote	1320	76	122, 132, 141, 143
Del Norte Remote	1337	74	123, 136 - 138, 140, 141, 143
Del Norte Remote	249	86	127, 128, 139, 150 - 153
Del Norte Remote	1062	88	139, 152
Del Norte Remote	19293	84	150 - 153
T-2	19293		123, 127, 128
T-2	17801		141
Parallel Buffer	124		112 - 153

VESNO 2224

Equipment	Serial No.	Code	Julian Date
Del Norte DMU	162		112 - 118, 126 - 139
Del Norte DMU	182		151
Del Norte DMU	432		122
Del Norte Master	1070	72	112 - 118, 126 - 139
Del Norte Master	159	76	151
Del Norte Master	1067	74	122
Del Norte Remote	245	72	112 - 116, 122, 127, 129, 132, 136, 151
Del Norte Remote	189	78	112 - 116, 126, 127, 129, 130, 139
Del Norte Remote	1137	74	118, 126, 127, 129, 132, 136, 151
Del Norte Remote	1320	76	118, 122
T-2	270101		139
Parallel Buffer	132		112 - 151

VESNO 2225

Equipment	Serial No.	Code	Julian Date
Del Norte DMU	182		117, 118, 137 - 140
Del Norte DMU	159		123, 127, 128, 129
Del Norte DMU	162		131
Del Norte Master	159	76	117, 118, 137 - 140
Del Norte Master	246	84	123, 127 - 129
Del Norte Master	1070	72	131
Del Norte Remote	245	72	117, 118, 131, 140
Del Norte Remote	189	78	117, 118, 140
Del Norte Remote	249	86	123
Del Norte Remote	220	84	127 - 129
Del Norte Remote	1137	74	131
Del Norte Remote	1320	76	137 - 139
T - 2	17801		123, 127, 128, 129, 137 - 139
Parallel Buffer	125		117 - 140

VESNO 2226

Equipment	Serial No.	Code	Julian Date
Del Norte DMU	182		114
Del Norte DMU	179		131
Del Norte Master	159	76	114
Del Norte Master	187	86	131
Del Norte Remote	245	72	114
Del Norte Remote	189	78	114
Del Norte Remote	220	84	131
T - 2	17801		131

VESNO 2226 became an automated launch after JD: 131. Prior to this, rates were recorded manually in the sounding volume directly from the digitized rates on the DMU.

On JD: 137 and 138 VESNO 2226 was used in the automated mode in the Turner Point area for collection of hydrographic data. It was later learned that the parallel buffer was bad and caused the pdp8/e computer to incorrectly digitize the DMU rates on the teletype printout. Since it was calculated that the possible error was too great for a 1:10,000 scale survey, this data (positions 7031 through 7217) was rejected and rerun at a later date.

Each Del Norte DMU - Master pair was calibrated with the Remote units over a measured baseline, at two week intervals, in accoradance with AMC Operations Order No. 79.

The measured baseline was established between the U.S.C.G. Station, Rockland, Maine at a point near the base of the Rockland breakwater, using a Hewlett Packard 3810 B EDM.

Daily calibrations were made before and after data acquisition except when the weather did not allow. Four calibration methods were used during this survey: 1) HP 3810 B Range/Azimuth, 2) HP 3810 B Direct Comparison calibration, 3) Static calibration and 4) Range - Cutoff calibration.

Mean of daily calib. correctors were used in the survey.

The HP Range/Azimuth calibration consisted of measuring a distance and an azimuth from a known position to a mirror board placed alongside or beneath the Del Norte Master Unit. Occasionally, on calm days, two launches would tie up, Master unit to Master unit, and be calibrated together in order to save time. Rates were computed utilizing the HP 3810 B range/azimuth calibration program and compared to the rates observed on the Del Norte DMU unit. Resulting correctors were applied during processing.

The HP Direct Comparison calibration was the same as above except that an azimuth was not measured. This method was used on days of range/azimuth control when only one Del Norte Remote needed to be calibrated. The HP distance was compared to the Del Norte DMU rate and the resulting corrector was applied during processing.

The static calibration consisted of placing the Del Norte Master Unit as close as possible to a known position and comparing the Del Norte DMU rates to pre-computed rates from known positions occupied by Del Norte Remote Units. The resulting correctors were applied during processing. Static calibration sites included: PORT, LONG COVE STATIC CALIBRATION POINT, FORTS, and STOCKTON HARBOR PLATFORM. *LIGHT NORTH.*

G.P. of Long Cove static calib pt. not found in record.

The Range/Cutoff calibration consisted of steering the launch toward or away from a geodetically positioned range (Fort Point Lighthouse and Fort Point Ledge Day Beacon) and measuring an angle between the range and another known position with a sextant. Rates were

computed, utilizing RK 300 function 7, and compared to the rates observed on the Del Norte DMU unit. The resulting correctors were applied during processing.

Range/Azimuth control was used in the following locations: Long Cove, Stockton Harbor, Morse Cove, the Mill Brook area (around station SEARS), and within a .4 nautical mile radius of 44°25'12"N, 68°51'30"W.

H. SHORELINE

Sounding Lines were run parallel to the shore at the inshore limit of safe navigation of the sounding vessels. It was observed that all shoreline, on chart 13309 and on shoreline manuscripts TP-01110 and TP-01111, depicted as rock ledge or boulder strewn, was also kelp infested. There were no exceptions. ?

Shoreline details were transferred to the field sheet from Class III Shoreline Maps Job CM-8101, represented on manuscripts numbered TP-01110 and TP-01111 (1:20,000 scale). *Refer to sect. 2 of Eval. Report*

All shoreline was verified visually from small boats, launch, or by walking the beach at low water. A comparison between what the hydrographer observed and what is represented on TP-01110 and TP-01111 was conducted and the resulting discrepancies will be discussed in this section. Items not mentioned were observed to be as depicted on the "T-sheets".

Starting at Moose Point and working eastward the hydrographer observed that the item charted at 44°26'56"N, 68°55'40"W was a groin made of wood and rock and was entirely exposed at low water. It is recommended that it be charted as a groin. ✓ concur On the east side of the Searsport Municipal Pier (which contains station SEARS) is a public boat landing, made of concrete, which extends approximately 75 feet from shore paralleling the pier. ✓ concur It is recommended that it be charted accordingly. A Marine Railroad was observed on the west shore of Mill Brook and was located by position 72. The item was observed to uncover at low water and extends approximately 50 feet eastward from the shore. ✓ concur It is recommended that it be charted accordingly. The rock at the mouth of Mill Brook was not observed during several low water investigations. Chart 13309 depicts the area well and therefore, it is recommended that it remain as presently charted. See photograph No. 1. ✓ concur The rock between Mill Brook and Mack Point at 44°27'12"N, 68°54'58"W was not observed during low water investigations and adjacent sounding lines of hydrography. ✓ concur It is recommended that the rock not be charted, thus depicting the location as presently charted. "Long Cove Ledge" was not visible to the photogrammetrist and was questioned on the "Notes to Hydrographer". The ledge was observed to be covered during several low water investigations. The least depth of 1 foot was obtained on position 68. ✓ concur It is recommended that the ledge be charted as surveyed. The ruins (PSR #3009) charted at 44°27'01"N, 68°54'22"W were observed, located by position 1388, and are described in Section K. of this report.

11/13/86
* per Steve Baumgardner

The Dolphins and ruins in southwest Long Cove (PSR #3018) were observed and located by position 149 and are described in section K. The submerged intake in Long Cove (PSR #3006), with position approximate was located at 44°27'23.8"N, 68°53'46.1"W by position 1632. This feature is described in detail in section K. See photograph No.'s 6 and 7. The obstruction at Kidder Point was observed to be a large rock rising approximately 9 feet off of the bottom and is entirely exposed at all stages of the tide. It was positioned by position 8031. It is recommended that it be charted as a bare rock. The trail between the mainland and northern Sears Island was observed to be completely uncovered at low water and covered only at high water. At low water cars and motorcycles can be seen driving to and from Sears Island. At high water a 1 to 2 knot current was observed flowing from Stockton Harbor into Long Cove. Together with the small amount of water, this area must be navigated with extreme caution. See photograph No.'s 2 and 3.

Refer to Sect. 2.a. of Eval. Report

The western shore of Sears Island was observed to be foul with kelp and large boulders. Boaters should exercise extreme caution when navigating along this shore. It is recommended that the annotation "foul with rock" be placed on future charts from 44°27'07"N, 68°53'18"W to 44°25'52"N, 68°52'30"W.

Refer to Sect. 2.b. of Eval. Report

The ruins (PSR #2964) just off station KID in western Stockton Harbor was observed and located by position 9146. See section K. for a complete description. The wreck (PSR #2963) adjacent to PSR #2964 was observed and positioned by position 9145. See section K. for a complete description. The pier and ruins just north of PSR #2963 were observed to be two parallel corrugated steel walls, eight to ten feet apart, running from what appears to be a pumphouse from the Delta Chemical Company. It is recommended that this feature be charted as a groin. The ruins, not visible to the photogrammetrists at the northern end of Stockton Harbor in the small cove just west of Mill Cove, was visually confirmed but could not be hydrographically positioned due to low water conditions. The ruins were observed to be eight to ten wooden pilings approximately 5 feet high extending southwest from the shore and located approximately three hundred feet northwest of the charted pier at the southwest point of Mill Cove. The charted pier was observed to be in ruins with one cut-granite pier support remaining. Both of these features are entirely uncovered at low water and should be charted as ruins. Ruins were not observed extending from the southwestern point of Mill Cove southeasterly towards the rock symbol at 44°28'37"N, 68°51'18"W. It is recommended that this dashed line symbol not be placed on future charts.

No G.P. not plotted concur

No recommendation retained.

pier too small per Jeannie concur

no correction

On the west shore of Cape Jellison at 44°28'06"N, 68°51'26"W a concrete slab boat ramp was observed at the northern extent of the wharf ruins (position 9490). It is recommended that it be charted accordingly. The ruins, PSR #2962, which extend ~~southward~~ northward from position 9489 to 44°27'41"N, 68°51'33"W (position 9488) were observed to be hundreds of pilings, 1 to 6 feet high, appearing to be a former seawall.

Refer to Sect. 2.c. of Eval. Report

Go to K.

It is recommended that this item be charted as numerous pilings. See section K for a complete description. Squaw Head was observed to be rock ledge with several large boulders. It is depicted well on the chart and "T-sheet". See photograph No.'s 4 and 5.

chart according to survey

From Fort Point west and north along the shore of Fort Point Cove towards Grants Cove, numerous large boulders were observed at different stages of exposure. As it was impractical to position each rock and this shore was considered to be "foul with rock", it is recommended that it be charted as such from 44°28'14"N, 68°48'50"W to 44°28'19"N, 68°49'38"W. A private boat ramp made of gravel was observed just north of position 4559 but was not positioned due to lack of water. A small protrusion at 44°28'56"N, 68°50'16"W on TP-01110 coincides with the boat ramp location. It is recommended that it be charted as shown on TP-01110. A rock awash by 2 feet was observed approximately 100 feet north of position 4559 (wooden pier ruins) and would be dangerous to a boater navigating toward the boat ramp. It is recommended that a rock awash symbol be placed on future charts at 44°28'58"N, 68°50'08"W.

concur

concur

Refer to sect. 2.d. of Eval. Report

On the east side of the Penobscot Bay just north of Perkins Point from 44°25'00"N, 68°49'09"W, north to Turner Point it is recommended that the annotation "foul with rock" be placed on future charts. The area was observed to be densely boulder strewn and not rock ledge. This agrees with the Notes to Hydrographer on TP-01111. A rock awash was observed and positioned at 44°26'14.6"N, 68°48'39.0"W (position 5501). The lone rock is separate from shore and can be seen only at low water when it is exposed by 1 foot. It is recommended that it be charted as surveyed.

concur

concur

In Morse Cove wreck ruins were observed and positioned at 44°27'13.7"N, 68°47'00.5"W by positions 74 and 75. It is recommended that it be charted as a wreck. See section K. for a complete description. The uncharted pier was observed and positioned at 44°27'13.0"N, 68°46'58.1"W (position 76). The seaward extent of the pier coincides with position 75. The pier is wooden and approximately 200 feet long. It is owned by Mr. Russell Devereux who is the owner of Devereux Marine Equipment which uses the pier to onload supplies and offload products. The wreck at the end of the pier is used as a breakwater and is also owned by Mr. Devereux. It is recommended that the pier be shown on future charts. Mooring poles were observed in the cove and positioned by position 77. The 26 poles are 2 to 4 inches in diameter and are from 5 to 20 feet high; similar to those in Stockton Harbor. They extend from position 77 shoreward toward the wreck and are in range on magnetic course 110°. It is recommended that they be charted accordingly. An uncharted boulder was observed and positioned at 44°27'22.4"N, 68°47'06.3"W (position 73). The lone boulder is 10 feet in diameter and is exposed by 5 feet at low water. It is recommended that it be charted as a rock awash on future charts. From 44°27'30"N, 68°47'12"W north along the shore to 44°28'20"N, 68°47'10"W it is recommended that the annotation "foul with rock" be placed on future charts. This area was observed to be boulder strewn and not rock

concur

concur

Refer to sect. 2e of Eval. Report

concur

Refer to sect. 7 of Eval. Report

ledge, which agrees with TP-01111 and the Notes to Hydrographer. From 44°28'20"N, 68°47'10"W north to 44°29'12"N, 68°46'42"W the shore was observed to be boulder strewn on a sandy, muddy beach. No rock ledges were observed in this section of shoreline, which also agrees with the Notes to Hydrographer. It is recommended that this shoreline section be charted as shown on TP-01111.

✓ TP01111

concur

Shoreline features such as the high water line and rock ledges were inked in black on the final smooth sheet when they were in agreement with the "T-sheets". When they were in disagreement the features were inked in red. Listed below are areas of disagreement:

Note: corrections to depths due to change from predicted to actual tides

Positions	Area	Discrepancy
4553 +3	Mill Brook	~~2~~ foot sounding shoreward of low water line.
1574-1579	southwest Sears Island	~~Positive~~ soundings on rock ledge are 0 to -1 foot
9508, 9508 +1	Squaw Head	~~Positive~~ Soundings on rock ledge -.5 to 0 foot
9507	Squaw Point	Positive soundings on rock ledge of 0.5 foot
3941-3942	east Cape Jellison	~~Positive~~ soundings shoreward of low water line. of -4 to 1 foot
1676-1685	northern Long Cove	~~Positive~~ soundings of -3 to 1 foot shoreward of low water line.
9388-9391	northern Stockton Harbor	~~Positive~~ soundings of 0 to 1 foot shoreward of low water line.
9375-9381	western Cape Jellison	Positive soundings of 1 to 8 feet shoreward of low water line.
9993-9999	south Morse Cove	~~Positive~~ soundings -1 to 1 foot shoreward of low water line.

It is recommended that these areas be charted as depicted on the final smooth sheet with the understanding that soundings may change slightly when smooth tides are applied.

concur

I. CROSSLINES

This survey contains 10.9 % crosslines run per mile of mainscheme hydrography. The agreement between crosslines and mainscheme was 100% based on criterion stated in Section 1.1.2 Part B.II.1 of the Hydrographic Manual. Crosslines were run at 45° to 90° to the mainscheme soundings lines except in the Searsport Harbor area. There, they were run at 40° in order to aid in the development of significant features and be more perpendicular to the contours.

J. JUNCTIONS

This survey junctions with the following surveys:

Area of Junction	Field No.	Reg. No.	Scale	Date
North	MI 10-2-84	H-10134	1:10,000	1984
South	MI 10-3-84	H-10131	1:10,000	1984
South	MI 10-6-83	H-10109	1:10,000	1983
West		H-7198	1:10,000	1947

Refer to Sect. 5 of Eval. Report

The agreement of soundings at the junctions with H-10134, H-10131, and H-10109 were excellent, with differences of 0 to 1 foot over each of the junctions. The junction with H-7198 was excellent except for one sounding. At 44°25'21"N, 68°56'19"W, H-7198 shows a sounding of 58 feet where H-10130 shows a 45 foot sounding (position 3147). It appears that the 58 foot depth is in error. Soundings from both surveys show depths of 44 to 46 feet. It is therefore recommended that the 45 foot sounding be charted as shown on the ~~field~~ smooth sheet. concur

General note: Recommendation by hydrographer to "chart according to field sheet" should be reworded to "chart according to present survey or as shown on smooth sheet"

K. COMPARISON WITH PRIOR SURVEYS

The prior survey which was available for comparison was survey H-1258 dated 1872 (scale 1:20,000).

The comparison with H-1258 was very good west of 68°52'00"W with the following exceptions:

1) In the area west of Long Cove Ledge at 44°26'37"N, 68°55'09"W the previously ~~charted~~ plotted 28 foot sounding was developed with 50 meter line spacing. Soundings of 34.3 feet were obtained over the entire development area. Since the bottom was very flat and no evidence of shoaling was found, it is recommended that the depth of 34.3 feet be charted as shown on the field sheet. ✓ concur

2) The 18 foot contour off Mack Point was surveyed to extend southward in a narrow band and encircle Long Cove Ledge. The soundings in this band are shoaler than 18 feet and dictate that it be drawn as such. H-1258 shows two 18 foot contours. One around the ledge and one along the Mack Point Shore. It is recommended that this area be charted as shown on the field sheet. ✓ concur

3) The dredged area to the south of the two piers at Searsport Station was surveyed at depths of 37.5 to 41 feet. It was reportedly dredged to 34 feet in May 1980. Prior survey soundings are from 21 to 32 feet. It is recommended that it be charted as shown on the field sheet. ✓ concur

4) Near black structure buoy "1", ½ mi south of Sears Island, a 23.3 foot sounding was obtained with a leadline during a dive investigation (position 7029). H-1258 shows a sounding of 25 feet. It is recommended that the 23.3 foot depth be charted on future charts. ✓ φ 44°25'09.38"N λ 68°52'32.17"W concur

5) Just north of the above mentioned shoal (position 7029) at 44°25'18"N, 68°52'30"W depths of 60 to 63.2 feet were obtained where H-1258 shows 46 to 50 feet. It is recommended that this area be charted as shown on the field sheet. ✓ concur

6) In Stockton Harbor at 44°27'40"N, 68°52'25"W depths of 15 to 17 feet were obtained by this survey where a 21 foot sounding is shown on H-1258. No indication of greater depths was found in the area and the bottom is fairly flat. It is recommended that the 18 foot contour be drawn as shown on the field sheet. ✓ concur

7) In Stockton Harbor, in the vicinity of 44°27'57"N, 68°51'33"W, exists what is believed to be a former dredge area. Depths obtained by this survey are from 1 to 10 feet deeper than H-1258. It appears that the area was once dredged to approximately 24 feet and is now filling back in as the former pier is now in ruins and the dredged area is no longer maintained. It is recommended that this area be charted as shown on the field sheet. ✓ concur

To the east of 68°52'00"W, excluding Stockton Harbor, the comparison with H-1258 was good but more numerous discrepancies were noted. The Penobscot River flows through this area with currents estimated from 1 to 5 knots depending on the tide. Together with the soft, mud bottom it follows that the bottom may have changed since 1872. The discrepancies are as follows:

8) South of Squaw Point a 14~~5~~ foot sounding was obtained by leadline during a dive investigation on a shoal which was found during routine hydrography (position 7028). No H-1258 soundings directly overlap the shoal but surrounding depths are from 33 to 44 feet. A Danger to Navigation letter was sent to the Director of Charting and Geodetic Services on May 10, 1984 so that this information could be passed on in the next Notice to Mariners. See Appendix I for a copy of this correspondence. It is recommended that this shoal be charted as shown on the field sheet. $\phi = 44°26'21.24"N$ $\lambda = 68°51'21.22"W$ ✓ concur

9) Within a ~~6~~9~~0~~0 meter radius of 44°25'~~24~~50"N, 68°51'~~20~~36"W soundings obtained by this survey were ~~6~~2 to ~~22~~36 feet deeper than those from H-1258. It is recommended that this area be charted as depicted on the field sheet. ✓ concur

10) The 6 foot contour 0.6 mi northeast of Turner Point was surveyed by this survey (H-10130) as being discontinuous, with one contour along the shore extending seaward and the other encircling the western extent of the shoal. It is believed that once smooth tides are applied to the hydrographic data the discontinuous contours will merge and be as the previously depicted contour. In any case, it is recommended that the 6 foot contour remain as ~~previously~~ presently surveyed. ✓ concur

11) In the area 0.70 mi south of Fort Point Ledge, within a 700m radius of 44°27'00"N, 68°48'45"W, depths obtained by this survey disagree with those from H-1258 by ~~4~~ to ~~13~~14 feet. It is recommended that this area be charted as shown on the field sheet. ✓ concur

12). The shape of Fort Point Ledge has changed. The 6, 12, 18 and 30 foot contours have altered to the west showing no indications of shoaling on the southeast portion of the ledge as previously surveyed. ✓ chart according to present survey

A 50 meter line spacing development was conducted over the entire ledge (see the end of section K for a 1:5000 scale enlargement of the area) and a circle search was conducted over the prior survey sounding of 6 feet at 44°27'32"N, 68°48'26"W. Depths greater than 50 feet were observed in this area. It is strongly recommended that Fort Point Ledge be charted as shown on the field sheet.

✓ concur

13) In southern Fort Point Cove at 44°28'23"N, 68°48'58"W, H-1258 shows a sounding of 9 feet. A sounding of 18 feet (position 2536 +5) was obtained by this survey. The 12 foot contour no longer extends as far north and the 18 foot contour has altered to the south. It is recommended that this area be charted as shown on the field sheet.

ϕ = 44°28'20.52"N
λ = 68°48'58.94"W

✓ concur

14) A 50 meter line spacing development was conducted over the northeastern-most section of the survey area in the vicinity of 44°29'05"N, 68°47'06"W. 31 foot soundings were obtained at 44°28'58"N, 68°47'25"W where a prior survey sounding of 20 to 23 feet is charted. Since the bottom was flat and no indication of shoaling was observed, it is recommended that this area be charted as shown on the field sheet. ~~A 60 foot contour emerged at 44°29'05"N, 68°47'03"W where H-1258 shows no soundings but a 30 foot contour. It is recommended that the 60 foot contour be charted as shown on the field sheet.~~

✓ concur

There were eight PSR Items and three undocumented wrecks contained within the survey limits.

02962
PSR #~~2962~~ was extensive wharves located in Stockton Harbor at 44°27'54"N, 68°51'39"W as described by the Automated Wreck and Obstruction Information System (AWOIS), dated April 27, 1984. A large concentration of 1 to 6 foot wooden pilings was seen visually along shore from 44°28'05.9"N, 68°51'26.2"W (position 9489) south to 44°27'41.3"N, 68°51'32.9"W (position 9488). According to Delta Chemical Company personnel, the former wharves were owned by the Bangor and Aroostook Railroad Company and have been in ruins since before 1951. It is recommended that this item be charted as numerous pilings along the shore from position 9489 to 9488 and the dashed lines be removed from the chart. No separate pilings were observed in the reported location.

✓ Refer to Sect. 7 of Eval. Report

02963
PSR #~~2963~~ is a visible wreck located in ~~Long Cove~~ Stockton Harbor at 44°27'52.5"N, 68°52'39.0"W as described by the AWOIS Listing dated April 27, 1984. The wreck was visible at low water exposed by 4 feet. The mast is no longer intact. Position 9145 locates the wreck at 44°27'52.0"N, 68°52'37.6"W. It is recommended that the wreck symbol be carried forth onto future charts.

✓ Revise charted symbol to survey position

02964
PSR #~~2964~~ is a wharf ruins off Kidder Point in ~~Long Cove~~ Stockton Harbor as described by the AWOIS Listing dated April 27, 1984. Two rows of wooden pilings were observed exposed by 10 to 12 feet extending southeast off of station KID. Position 9146 places the seaward extent of the ruins at 44°27'51.6"N, 68°52'39.8"W. It is recommended that this feature be charted as ruins. TP-01110 depicts the ruins well.

✓ row of piling may contain piles covered at MHW

concur. Chart as visible ruins.

02965
PSR #~~2965~~ is a pier in ruins off Mack Point at 44°27'02.0"N, 68°54'11.0"W as described by the AWOIS Listing dated April 27, 1984. A dive investigation was made near several 2 foot wooden pilings. Two cut granite slabs approximately 6 foot by 4 foot were observed and positioned (position 9025). A natural rock formation was observed at the seaward extent of the ruins and positioned at 44°27'05.2"N, 68°54'12.4"W (position 9027, least depth ~~0~~2.0 feet). It is recommended that this item be charted as ruins. concur

03006
PSR #~~3006~~ is a submerged intake and pipeline located in western Long Cove at 44°27'24.0"N, 68°53'46.0"W as described by the AWOIS Listing dated April 27, 1984. A 4 meter by 5 meter concrete structure with steel tongue-in-groove bulkheads and a 2 foot diameter hole in the topside center was observed visually at low water exposed by 1.~~8~~6 feet. See photograph No.'s 6 and 7. A pipeline running from the intake towards the shore was not observed at several low water investigations, nor was there an indication of a pipeline during the running of routine hydrography. Position 1632 positions the intake at 44°27'23.8"N, 68°53'46.1"W. It is recommended that the charted notations "subm intake PA" be changed to read "~~subm~~ intake". Retain charted pipeline SRB concur

03008
PSR #~~3008~~ is a submerged pipeline intake located at 44°27'07.0"N, 68°54'03.5"W as described by the AWOIS Listing dated April 27, 1984. The shore between the Searsport Station piers and PSR #3009 was investigated on foot at low water on three separate occasions. No indication of a pipeline was observed. Additionally, adjacent sounding lines of hydrography revealed no evidence of a pipeline and the superintendent of Sprague Energy, Inc., Mr. Clinton Holmes, an employee of the company for 30 years, had no knowledge of any kind of pipeline ever existing in this location. It is therefore recommended that the purple dashed pipeline be removed from future charts. concur SRB

Bottom sweep requirement not done. Retain charted pipeline note & symbol. Chart pipeline between pos. 1445 at φ = 44°27'06.15"N λ = 68°54'03.87"W and the shore
Disregard SRB

03009
PSR #~~3009~~ is a pier ruins located off Mack Point at 44°26'58.5"N, 68°54'22.5"W as described by the AWOIS Listing dated April 27, 1984. Sixteen pilings were observed visually which are each exposed by 4 feet at high water. Position 1388 locates the seaward extent of the ruins at 44°27'04.5"N, 68°54'22.4"W. Approximately 10 feet south of position 1388 is a rock which is exposed by 1 foot at low water (position 1389, 44°27'04.4"N, 68°54'22.3"W). It is recommended that the ruins remain on the chart, positioned as surveyed.

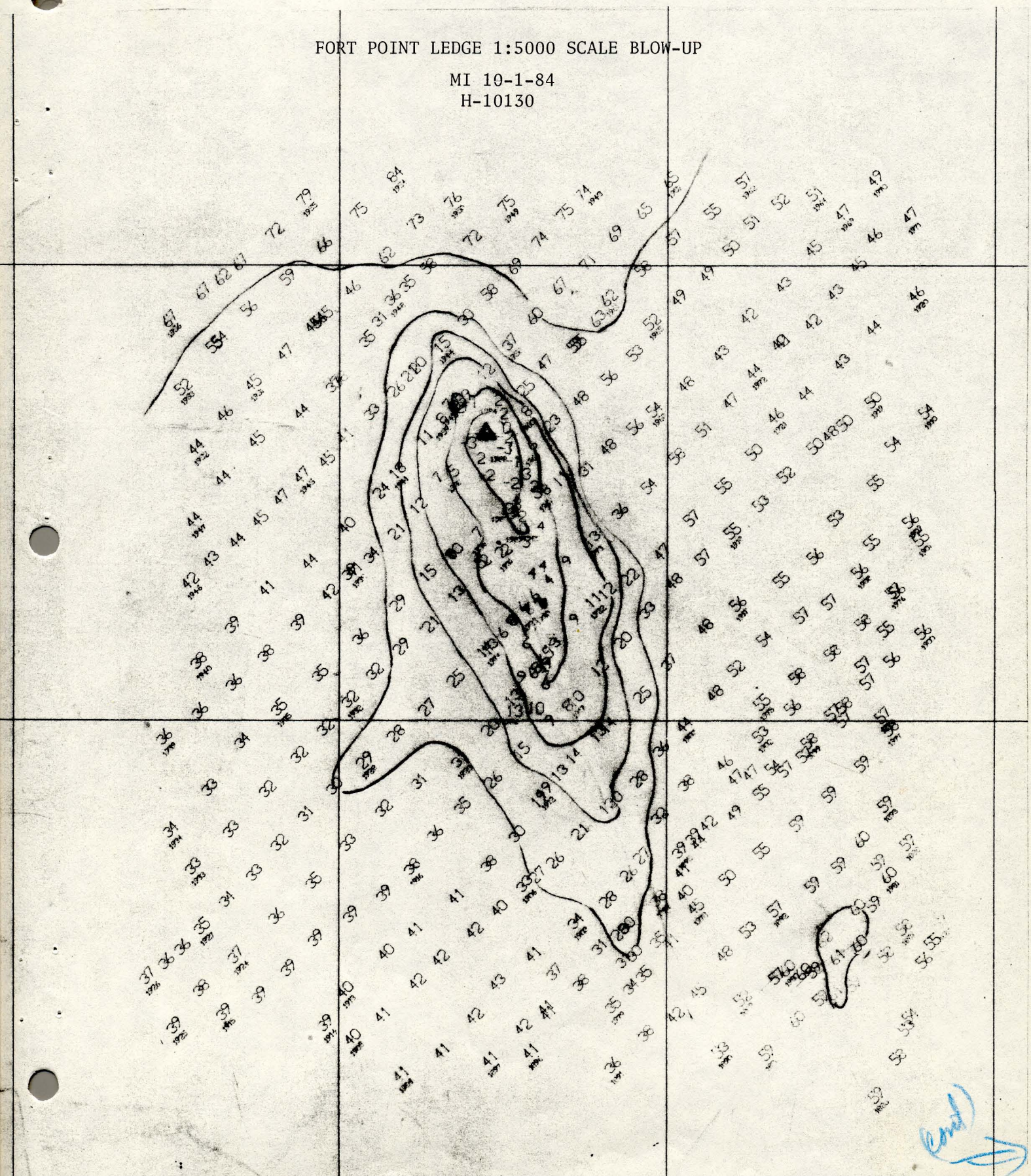
Refer to Sect. 7 of Eval. Report

03018
PSR # ~~3018~~ is pier ruins and dolphins located in western Long Cove at 44°27'13.5"N, 68°53'47.5"W as described by the AWOIS Listing dated April 27, 1984. Several 1 to 2 foot pilings were observed in the reported area. A dive investigation was conducted to position the seaward extent of the ruins. Five additional sets of pilings were observed and a 100 foot circle search was executed from the last piling found (position 149, 44°27'13.8"N, 68°53'50.2"W, depth 1.3 feet). No further pilings were observed below water or above water. It is recommended that this item remain as charted except remove the annotation "dolphins". A postcard showing the former pier is included with the photographs in the survey support data. Retain subm dolphins SRB

Refer to Sect. 7 of Eval. Report

FORT POINT LEDGE 1:5000 SCALE BLOW-UP

MI 10-1-84
H-10130



Two wooden wrecks were observed on the western shore of Long Cove. The southerly of the two was approximately 110 feet in length and 25 feet in beam. Position 64 locates the stern at 44°27'28.4"N, 68°53'49.9"W and position 65 locates the bow at 44°27'29.4"N, 68°53'51.2"W. The bow (the highest point) rises 6 feet off the bottom and the stern 4 feet. It is recommended that a wreck symbol be placed on future charts as this item is a potential hazard to navigation at high water. The northerly wreck was approximately 125 in length and 30 feet in beam. Position 66 locates the bow at 44°27'30.6"N, 68°53'51.4"W and position 67 locates the stern at 44°27'32.1"N, 68°53'50.8"W. The bow rises 4 feet off the bottom and the stern 6 feet (the highest point). It is recommended that a wreck symbol be placed on future charts as this item is also a potential hazard to navigation at high water. Both wrecks were entirely uncovered at low water. See photograph No.'s 6 and 8.

concur

A steel hulled wreck named Squall was observed on the eastern shore of Morse Cove. The wreck is used as a breakwater at the end of the Devereux Marine Equipment pier, both of which are owned by Mr. Russel Devereux (see section H). It is 140 feet in length, 30 feet in beam and approximately 25 feet high. Judging from the barnacle and algae line on the hull, the wreck is approximately two-thirds exposed at highwater. Positions 74 and 75 position the bow at 44°27'13.7"N, 68°47'00.5"W and the stern at 44°27'13.7"N, 68°47'00.7"W respectively. It is recommended that a wreck symbol be shown on future charts in the position obtained by this survey.

concur

L. COMPARISON WITH THE CHART

The survey area is covered by the following charts:

Chart Number	Edition	Date	Scale
13309	23	24 Mar. 84	1:40,000
13302	14	26 Feb. 83	1:80,000

The comparison with Chart 13309 was very good with all soundings agreeing with the contours except for the items discussed in section K. The following least depths were obtained by dive investigations:

Position	Least Depth	Latitude	Longitude
7028	14½'	44°26'21.3"N	68°51'21.2"W
7029	22'	44°25'09.4"N	68°52'32.2"W

corrections to least depths based on actual tides

The following is a summary of significant items, other than aids to navigation, that were positioned during this survey:

Note: This list summarizes results of this survey. Refer to smooth sheet.

Position	Item
23, 24	Searsport Municipal Pier
64	Wreck stern
65	Wreck bow
66	Wreck bow
67	Wreck stern
68	Long Cove Ledge, Least Depth 1' ✓
69	Pier
70	Groin
71	Groin
72	Marine Railroad
73	Rock awash 5' ✓
74	Wreck bow
75	Wreck stern
76	Pier
77	Mooring Poles
149	PSR #3018, pier ruins
1080 +4 to +5	Least Depth 5'
1354	Mooring Piling
1356	Mooring Piling
1357	Mooring Piling
1388	PSR #3009, pier ruins
1389	Rock awash 1'
1420	Rock ledge awash 1' ✓
1480	Pier
1481	Submerged mooring piling
1492	C.H. Sprague Terminal Pier
1493	Bangor and Aroostook Pier
1540	C.H. Sprague Terminal Pier
1542	Bangor and Aroostook Pier
1631	Submerged Wooden beam 0.2'
1632	PSR #3006, submerged intake
2007	Rock awash 2' ✓ -3'
2395	Rock awash -11'
2553, 2642	Rock awash 5' -4'
~~3192~~	~~Rock awash 1'~~ Rejected in field
~~3193~~	~~Rock awash 1'~~ " " "
3666	Least Depth 8' 9'
3946	Rock awash -9'
3950	Rock awash 8' -9'
3958	Rock awash 8' -9'
3984	Rock awash -10'
~~4522~~	~~Rock ledge awash 1'~~ Rejected. see pos. 52. Depth = 0'
4559	Pier ruins
5501	Rock awash 1' -1'
7015	Rock awash 1' -3'
7016	Rock awash 1' -2'
7018	Rock awash 1' -5'
7027	Mooring Piling -11'
7028	Least Depth 14' 15'
7029	Least Depth 28' 23'

7030	Sears Island Ledge, Least Depth ~~1'~~ -2'
8030	Group of 3 rocks awash -2'
8031	Bare Rock -11'
9025, 9027	PSR #2965, pier ruins
9048, 9049	Submerged rock ledge, Least Depth 3' ✓
9101	Bare Rock ~~by 2'~~ -11'
9145	PSR #2963, wreck
9146	PSR #2964, ruins
9210	Groin
9308	Piling ~~2'~~ ~~exposed~~ -8' (same rock on pos. 8000)
9361	Rock awash 1' ✓
9392	Bare rock -8'
9488, 9489	PSR #2962, wharf ruins
9490	Boat Ramp
9491-9494	Mooring Poles
9495	Mooring Buoy
9496, 9497	Mooring Logs
9545	Rock submerged by ~~1'~~ 0'
9546	Group of rocks awash ~~1'~~ -2'

It is recommended that all of these items be charted as surveyed. concur

M. ADEQUACY OF SURVEY

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

N. AIDS TO NAVIGATION

Several floating aids to navigation are contained within the limits of this survey and are as follows:

Long Cove Ledge Buoy #2 - This red nun buoy employs a red reflector and marks the southwestern side of Long Cove Ledge in conjunction with Long Cove Ledge Buoy #7. This buoy is charted at 44°26'45"N, 68°54'33"W and was positioned by this survey at 44°26'44.9~~6~~4"N, 68°54'32.~~29~~52"W (position 1353). ✓

Long Cove Ledge Buoy #7. This black can buoy employs a green reflector and marks the southeastern side of Long Cove Ledge. This buoy is charted at 44°26'45"N, 68°54'12"W and was positioned by this survey at 44°26'44.5~~8~~7"N, 68°54'13.~~02~~24"W. (pos. 1352) ✓

Mack Pt. Channel Lighted Buoy #6, Fl R 4s. W. Side Sears I. This red nun buoy flashes red every four seconds, employs a red reflector and marks the eastern limit of safe navigation on the western side of Sears Island. This buoy is charted at 44°26'42"N, 68°53'46"W and was positioned by this survey at 44°26'42.6~~9~~6"N, 68°53'~~45.89~~46.06"W. (pos. 1171) ✓

Mack Pt Channel Lighted Bell Buoy #5, Fl G 4s. This black can buoy flashes green every four seconds, employs a green reflector and marks the western limit of Mack Pt. Channel in conjunction with Mack Pt. ✓

Channel Lighted Buoy #6. This buoy is charted at 44°26'34"N, 68°54'09"W. and was positioned by this survey at 44°26'35.~~40~~39"N, 68°54'08.~~34~~56"W. (pos. 1351)

Sears Island Bell Buoy #2 - This red bell buoy employs a red reflector and marks the southwestern edge of Sears Island Ledge. This buoy is charted at 44°25'22"N, 68°53'33"W. and was positioned by this survey at 44°25'23.45"N., 68°53'33.20"W. (pos. 3133)

Sears Island Buoy #4 - This red nun buoy employs a red reflector and marks the eastern limit of safe navigation on the west side of Sears Island. This buoy is charted at 44°26'10"N, 68°53'53"N and was positioned by this survey at 44°26'10.12"N, 68°53'52.~~28~~55"W. (pos. 3393)

Stockton Harbor, Entrance Shoal Lighted Gong Buoy #1, Fl G 4s. This black gong buoy flashes green every four seconds, employs a green reflector and marks the shoal at the southwestern entrance to Stockton Harbor. This buoy is charted at 44°25'05"N, 68°52'27"W and was positioned by this survey at 44°25'04.~~42~~51"N, 68°52'27.11"W. (pos. 3014)

Stockton Harbor, Entrance Buoy #3. This green can buoy employs a green reflector and marks the southeastern point of Sears Island. This buoy is charted at 44°25'37"N, 68°52'05"W and was positioned by this survey at 44°25'36.~~73~~82"N, 68°52'05.~~44~~53"W. (pos. 3020)

Stockton Harbor, Entrance Buoy #4. This red nun buoy employs a red reflector and marks the eastern limit of safe navigation southern end of the entrance to Stockton Harbor. This buoy is charted at 44°26'15"N, 68°54'40"N and was positioned by this survey at 44°26'15.03"N, 68°51'40.~~42~~54"W. (pos. 4123)

Stockton Harbor, Entrance Buoy #5. This black can buoy employs a green reflector and marks the western limit of safe navigation at the entrance to Stockton Harbor. This buoy is charted at 44°26'26"N, 68°52'00"W and was positioned by this survey at 44°26'26.~~48~~51"N, 68°~~51'59.97~~52'00.08"W. (pos. 4122)

Stockton Harbor, Entrance Buoy #6. This red nun buoy employs a red reflector and marks the eastern limit of safe navigation at the entrace to Stockton Harbor. This buoy is charted at 44°27'02"N, 68°52'00"W and was positioned by this survey at 44°27'01.8~~7~~6"N, 68°51'58.83"W. (pos. 9122)

Fixed Aids: There is one fixed aid to navigation and it is located at the entrance to Stockton Harbor. It is a privately maintained mooring platform once used in conjunction with the submerged pipeline that extends from the Delta Chemical Company at Kidder Point. There are two lights fixed on the platform; the northern light flashes white ever eight seconds and the southern light flashes white every fifteen seconds. The lights were only dimly visible at two nautical miles at night. The northern light is charted at 44°27'13"N, 68°52'09"W and was geodetically positioned by this survey at 44°27'12.83"N, 68°52'09.843"W. The southern light is charted at 44°27'10.886"N, 68°52'09.760"W and was

Refer to Sect. 7.C. of Eval. Report

control sta. # 500

control sta. # 126

geodetically positioned by this survey at 44°27'12.83"N, 68°52'09.843"W. (see photograph No.'s 9 and 10).

Each of the above mentioned aids to navigation is on station and adequately serves its purpose for which it was established except the fixed aid which is too dimly lit to aid in navigation.

The pipeline extending from the fixed aid to the Delta Chemical Company at Kidder Point was purged and cleaned and has not been used for approximately 5 years. As it still exists it is recommended that it remain as charted.

There were no bridges, submarine cables, or ferry routes contained within the survey limits.

0. STATISTICS

The following are the statistics accumulated during this survey:

	VESNO 2221	VESNO 2223	VESNO 2224	VESNO 2225	VESNO 2226	TOTAL
Positions	24 286	004 2119	34 1578	766 813	31	559 4827
Mainscheme	13.9	160.3	170.4	71.6	0	416.2
Development	0	23.9	7.2	9.2	0	40.3
Crossline	0.4	14.7	24.9	5.4	0	45.4
Total Hydrographic Mileage	14.3	198.6	202.5	86.2	0	501.6
Miscellaneous Miles	88.5	327.0	240.0	138.5	99.4	893.4
Square Miles	0.3	4.5	4.6	2.0	0.0	11.4
Tide Stations						2
Bottom Samples Nansen Casts	0	48	28	46	27	149 7

(all mileage is expressed in nautical miles)

It should be noted that positions 3000 to 3028 and 4210 to 4248 were duplicate position numbers for VESNO's 2223 and 2224.

P. MISCELLANEOUS

The following subjects will be discussed in this section:

1) Heavy rains
2) Suspicious traces
3) Currents
4) Junctions
5) Bottom Samples
6) Loran-C verifications

I. Heavy rains were experienced from May 12 to May 14, 1984 and from May 29 to June 5, 1984. It is possible that hydrographic data collected at these times may be altered by as much as 2 feet when smooth tides are applied. The Penobscot River was 1.5 feet over flood stage on June 5, 1984.

II. On JD 143 suspicious traces were generated by the Raytheon DSF 6000N Fathometer in the northeastern section of the survey area. All the items were generated within an 800 meter radius of 44°28'55"N, 68°47'22"W. Possible explanations for the questionable traces include excessive high frequency gain, bubbles under the transducer when altering course or making turns, debris in the water, and fish or other marine life in the water. Circle searches and 10 meter line spacing developments were conducted over each suspicious area. Additionally, an extensive wire drag investigation was conducted on identical features on MI 10-2-84 (H-10134). No indication of peaks or shoaling was witnessed during the investigations. The following is a list of the investigated locations and the depth that was searched for:

Refer to sect. 3 of Eval. Report

Position	Depth	Latitude	Longitude	Depths in present survey ft.
2704 +5 to 2705	22'	44°28'37.0"N	68°47'42.6"W	43, 45
2706 to 2706 +1	21'	44°28'40.1"N	68°47'37.7"W	39
2743 +5 to 2744	18'	44°29'12.4"N	68°47'02.4"W	26 to 32
2753 +2 to 2753 +3	16'	44°29'09.0"N	68°47'03.0"W	30, 48
2777 +1 to 2777 +2	21"	44°29'00.5"N	68°47'09.0"W	32, 29

These depths were rejected from the record as they were erroneous.

III. Surface currents in the Penobscot River were estimated at 1 to 5 knots depending on the tide. The currents were observed to flow from north to south in all cases. The strongest currents witnessed were between Fort Point Lighthouse and Fort Point Ledge. A 1 to 2 knot current was observed flowing from Stockton Harbor into Long Cove at high water (see section H.).

"strong current" note added to smooth sheet

IV. Junctions between hydrographic data collected in the same location at different times (sometimes on the same day) occasionally differed by as much as 2 feet. This was observed to occur in Fort Point Cove and Morse Cove. As there were no problems with the horizontal control, sounding data, or correctors applied to each it is believed that this problem will be remedied when smooth tides are applied. Crossline soundings agreed very well with main scheme sounding after actual tides were applied.

V. A Loran-C verification was conducted by MT. MITCHELL personnel in North Penobscot Bay during OPR-A166-MI/HFP-84. Verification data was forwarded to the U.S. Coast Guard in Washington, D.C. via the Atlantic Marine Center.

VI. Throughout the survey area, bottom samples were obtained at 6 cm. intervals at the scale of the survey. These samples were identified and forwarded to the division of Paleobiology, Smithsonian Institution. ✓

Q. RECOMMENDATIONS

It is recommended that this survey supersede all prior surveys of this area.

R. AUTOMATED DATA PROCESSING

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

Program	Program Name	Version
RK112	Hyperbolic, R/R Hydroplot	10/12/83
RK116	Range/Azimuth Real Time Hydroplot	10/12/83
RK201	Grid, Signal, and Lattice Plot	4/18/75
RK211	Range-Range Non-Real Time Plot	2/13/84
RK212	Visual Station Table Load	4/01/74
RK216	Range-Azimuth Non-Real Time Plot	2/11/01
RK300	Utility Computations	10/21/80
RK330	Reformat and Data Check	5/04/76
PM360	Electronic Corrector Abstract	2/02/76
AM500	Predicted Tide Generator	11/10/72
RK530	Layer Corrections for Velocity	5/10/76
RK561	H/R Geodetic Calibration	12/01/82
AM602	Extended Line Oriented Edition	12/08/82

S. REFERENCE TO REPORTS

Dangers to Navigation Letter
Horizontal Control Report
Coast Pilot Report
Loran-C Report
Velocity Corrections Report

Respectfully submitted,

William E. Sites

WILLIAM E. SITES,
ENS NOAA

National Oceanic and Atmospheric Administration

NOAA Ship MT MITCHELL S-222
439 West York Street
Norfolk, Virginia 23510

July 17, 1984

TO: MOA2x1

FROM: for Commanding Officer
NOAA Ship MT MITCHELL S-222

SUBJECT: Grain Elevator Position

In accordance with Project Instructions OPR-A166-MI/HFP-84, the grain elevator on Mack Point, Searsport Harbor in Penobscot Bay was geodetically positioned by a party from MT MITCHELL. The elevator was positioned by means of a geodetic intersection and the position is as follows:

Lat.	44°27'08.898" N
Long.	68°54'19.291" W

This elevator was positioned upon request from the United States Coast Guard and should be forwarded to the appropriate office.

As this elevator is a poor landmark, its depiction as a charted landmark should be discontinued.

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

NOAA Ship MT MITCHELL S-222
General Delivery
Rockland, Maine 04841

May 10, 1984

TO: Director, N/CG222
Charting and Geodetic Services

THRU: Director, MOA
Atlantic Marine Center

FROM: Commanding Officer
NOAA Ship MT MITCHELL

SUBJECT: Danger to Navigation

During routine hydrographic operations on OPR-A166-MI/HFP-84, Penobscot Bay, Maine, an uncharted shoal with a least depth of 14 feet (MLW) was discovered near the entrance to the Penobscot River, .45 N.mi. south of Cape Jellison.

While running mainscheme hydrography at 100m spacing on May 6, 1984, the uncharted shoal was observed while sounding with a DSF-6000N fathometer and obtaining positional information with Del Norte Trisponders in the range/range mode. Fifty meter splits were subsequently run to fully develop the shoal. This echo sounder development produced a least depth of 18 feet.

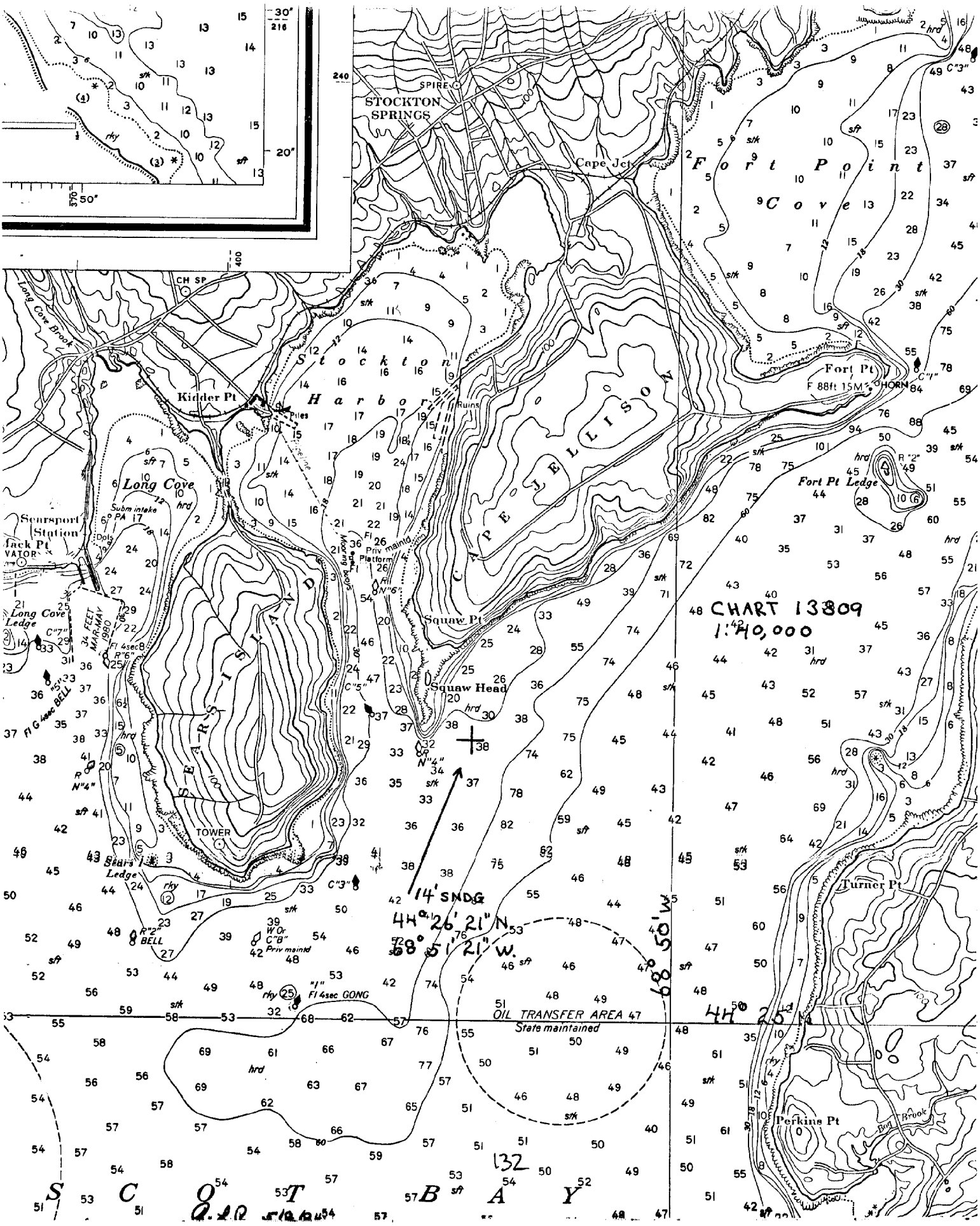
On May 10, 1984, diver investigations were conducted on the shoal for the purpose of obtaining a more accurate depth and position. The following least depth obtained with a leadline, and position obtained with the range/azimuth method, produced the following results:

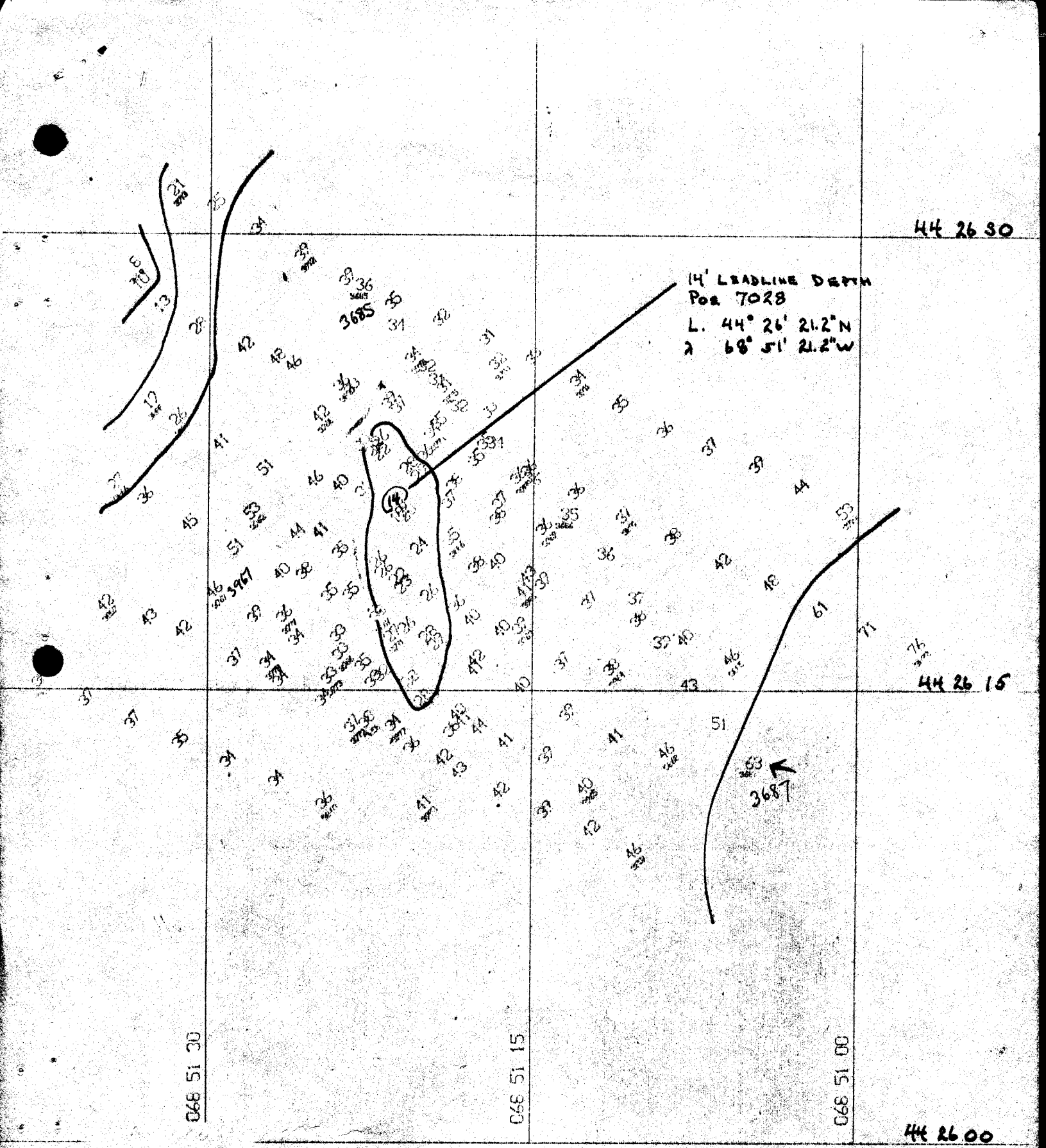
Least Depth (MLW)	Latitude	Longitude	Charts Affected
14.6'	44°26'21.2" N	68°51'21.2" W	13309, 13302

As this shoal presents a hazard to navigation, the above information should be included in the next Notice to Mariners.

Enclosed is a chartlet showing the location of the shoal, an enlargement of the development area, and a copy of the TTY message sent to the U.S.C.G. Boston District, reporting this danger.

enclosures


STOCKTON SPRINGS
SPIRE
Cape Jct
Fort Point Cove
Fort Pt
F 88ft 15M HORN
CH SP
Long Cove Brook
Stockton Harbor
Kidder Pt
Piles
Ruins
CAPE JELLISON
Long Cove
Fort Pt Ledge
Seasport Station
Jack Pt
Subm intake
Dols
Long Cove Ledge
34 FEET MAR-MAY 1980
Fl 4sec BELL
Priv maintd Platform
Squaw Pt
Squaw Head
SEAL ISLAND
TOWER
Sears Ledge
"1" Fl 4sec GONG
14' SNDG
44° 26' 21" N.
68° 51' 21" W.
68° 50' W
OIL TRANSFER AREA 47
State maintained
Turner Pt
Perkins Pt
Brook
SCOTT BAY
CHART 13309
1:40,000


44 26 30
14' LEADLINE DEPTH
Pos. 7028
L. 44° 26' 21.2"N
λ 68° 51' 21.2"W
3685
3967
3687
44 26 15
44 26 00
068 51 30
068 51 15
068 51 00

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.

Dwight W Knapp
Commanding Officer

MI-10-1-84 SIGNAL NAMES
H-10130

025 EAST, 1983
030 HEATH, 1983
040 TURNER, 1983
070 TURTLE ~~1982~~
080 MARSHALL POINT, 1983
090 BAYSIDE ~~1983~~
092 EAST NORTHPORT BLACK WATER TK ~~TANK~~ ~~1934~~
101 MOOSE, 1983
110 SEARS ~~1983~~
~~112 SEARSPORT CH SP 1862~~
120 PORT, 1983
121 WEST STOCKTON WHITE CH ~~CHURCH~~ SPIRE ~~1911~~
122 ACHUM ~~1984~~
125 KID ~~1983~~
126 STOCKTON HARBOR PLATFORM LIGHT ~~LT,~~ SOUTH ~~1984~~
127 SEARS ISLAND RADIO TWR ~~1983~~
129 STOCKTON SPRINGS UNIV. ~~CHURCH SPIRE 1983~~
130 SQUAW, 1982
132 FORT POINT LEDGE BEACON ~~1911~~
133 FORT POINT LDG ~~LEDGE~~ BEACON ECC ~~1984~~
134 FORT POINT LT HSE, 1862
136 FORTS, 1982
140 SANDY, 1982
151 SANDY POINT E ~~EAST~~ CHURCH CONG. SPIRE ~~1982~~
500 STOCKTON HARBOR PLATFORM LIGHT NORTH

SIGNAL GP'S

MI 10-1-84 H-10130

025	4	44	29	46062	068	46	32715	139	0002	000000
030	4	44	28	13328	068	47	06908	139	0006	000000
040	4	44	25	50915	068	48	33980	250	0003	000000
070	4	44	23	34948	068	52	50527	250	0006	000000
080	4	44	22	41170	068	54	12051	250	0009	000000
090	4	44	22	50167	068	58	06405	250	0006	000000
092	4	44	22	23087	068	58	06806	250	0000	000000
101	4	44	25	41948	068	56	48093	139	0005	000000
110	4	44	27	07156	068	55	30610	250	0002	000000
~~112~~	~~4~~	~~44~~	~~27~~	~~34920~~	~~068~~	~~55~~	~~32110~~	~~139~~	~~0000~~	~~000000~~
120	4	44	27	03878	068	53	56207	250	0004	000000
121	4	44	28	27055	068	53	15911	139	0000	000000
122	4	44	26	52169	068	53	23249	250	0000	000000
125	4	44	27	52461	068	52	42735	243	0000	000000
126	4	44	27	10886	068	52	09760	250	0008	000000
127	4	44	25	49679	068	53	00427	139	0000	000000
129	4	44	29	26903	068	51	29387	139	0000	000000
130	4	44	27	05941	068	50	37994	250	0005	000000
132	4	44	27	39489	068	48	38212	139	0005	000000
133	4	44	27	39483	068	48	38160	250	0005	000000
134	4	44	28	01410	068	48	43948	139	0027	000000
136	4	44	28	15576	068	48	49090	139	0003	000000
140	4	44	29	50047	068	48	35667	250	0015	000000
151	4	44	30	43016	068	48	53146	139	0000	000000
500	4	44	27	12833	068	52	09843	139	0000	000000

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-10130

Locality: Penobscot Bay, Maine

Time Period: April 21 - June 20, 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. West of longitude 68°51.0' Zone direct on 841-5191.
2. East of longitude 68°51.0' Zone direct on 841-4692.
3. For J-Day 112 to J-Day 128 when the tide gage at 841-4692 was inoperative zone direct on 841-5191.

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

for Donald Cannier
Chief, Tidal Datums Section

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
NOAA SHIP MT. MITCHELL S-222
439 WEST YORK STREET
NORFOLK, VIRGINIA 23510

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-10130
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
SANDY POINT, ME. (Zone)	841-4692	44°30.2'N	068°48.3'W

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

LATITUDE 44°24'36"N, 44°29'29"N, 44°29'29"N, 44°24'36"N
LONGITUDE 68°56'47"W, 68°56'47"W, 68°45'20"W, 68°45'20"W

This information is requested for the following Dates and Times:

4/21/84 JD112 0000UCT thru 2359UCT 4/27/84 JD 118
5/01/84 JD122 0000UCT thru 2359UCT 5/03/84 JD 124
5/06/84 JD127 0000UCT thru 2359UCT 5/11/83 JD 132
5/16/84 JD137 0000UCT thru 2359UCT 5/22/84 JD 143
5/29/84 JD150 0000UCT thru 2359UCT 6/01/84 JD 153
6/04/84 JD156 0000UCT thru 2359UCT 6/04/84 JD 156
6/20/84 JD172 0000UCT thru 2359UCT 6/20/84 JD 172

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10130

Name on Survey (FIELD) MI 10-1-84	A ON CHART NO. 13309	B ON PREVIOUS SURVEY NO. 1258	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 TP-01110	
BAGADUCE RIVER	X			X	X	(outside sheet limits)			X	1
BANGOR AND AROOSTOOK				X						2
PIER										3
CAPE JELLISON	X	X		X					X	4
CAPE ~~JUNCTION~~ JCT	X								X	5
C.H. SPRAGUE				X						6
TERMINAL PIER										7
CLEMENTS BROOK	X								X	8
FORT POINT	X	X		X					X	9
FORT POINT COVE	X			X					X	10
FORT POINT LEDGE	X	X		X					X	11
KIDDER POINT	X			X					X	12
LONG COVE	X	X		X					X	13
LONG COVE BROOK	X								X	14
LONG COVE LEDGE	X			X					X	15
MACK POINT	X			X					X	16
MILL COVE									X	17
MILL BROOK	X			X					X	18
MILL POND									X	19
MOOSE POINT	X	X		X	X				X	20
MORSE COVE	X			X					X	21
NORTH CASTINE	X		(outside sheet limits)						X	22
SEARS ISLAND	X	X		X	X				X	23
SEARS ISLAND LEDGE	X			X					X	24
SEARSPORT	X		34	X	X				X	

NOAA FORM 76-155 SUPERSEDES 24-00-105

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10130

Name on Survey (FIELD) MI 10-1-84	A ON CHART NO. 13309	B ON PREVIOUS SURVEY NO. 1258	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 ~~T~~-0110	
✓ SEARSPORT HARBOR	X			X					X	1
SEARSPORT MUNICIPAL				X						2
PIER										3
✓ SEARSPORT STATION									X	4
✓ SQUAW HEAD	X								X	5
✓ SQUAW POINT	X								X	6
✓ STOCKTON HARBOR	X	X		X	X	(outside sheet limits)			X	7
STOCKTON SPRINGS	X			X	X				X	8
✓ TURNER POINT	X			X					X	9
WEST CASTINE									X	10
✓ WEST PENOBSCOT	X			X	X				X	11
✓ WILSON POINT	X								X	12
GRANTS COVE									X	13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
				35						7

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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10130

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	10
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	4

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	2					
ENVELOPES						
VOLUMES	11					
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):

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~~ processed			4569
POSITIONS REVISED			615
SOUNDINGS REVISED			174
CONTROL STATIONS REVISED			
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	103.0		103.0
VERIFICATION OF SOUNDINGS	202.5		202.5
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	78.5		78.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		34.0	34.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		41.5	41.5
GEOGRAPHIC NAMES			
OTHER* digitizing	16.0		16.0
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	400	75.5	475.5

Pre-processing Examination by M. Kenny	*Beginning Date*	*Ending Date* 10/10/84
Verification of Field Data by P. Niland, R. Shipley	*Time (Hours)* 284.0	*Ending Date* 8/23/85
Verification Check by T. Jones, J. Stringham, B. Olmstead, J. Green, A. Luceno	*Time (Hours)* 167.0	*Ending Date* 9/25/85
Evaluation and Analysis by A. Luceno	*Time (Hours)* 75.5	*Ending Date* 9/25/85
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 9/26/85

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

PACIFIC MARINE CENTER
EVALUATION REPORT
H-10130

1. INTRODUCTION

H-10130 is a 1:10,000 basic hydrographic survey conducted by NOAA Ship MT. MITCHELL in compliance with the following project instructions:

OPR-A166-MI/HFP-84, dated March 20, 1984
Change No. 1, dated May 14, 1984
Change No. 2, dated December 7, 1984

The area surveyed is located in Maine and covers the southern approach to Penobscot River and the waters around Cape Jellison and Sears Island at the head of Penobscot Bay. Significant features in the surveyed area include Long Cove Ledge located about 620 meters south of Mack Point with a minimum depth of 1 foot, Sears Island Ledge located about 395 meters from the nearest shore at the southern part of Sears Island which uncovers 2 feet and Fort Point Ledge which is situated about 850 meters south of Fort Point and is marked by a daybeacon. Searsport Harbor, Long Cove, Stockton Harbor and the southern portion of Fort Point Cove are also within the surveyed area. The shore is generally fringed with ledges and/or foul with rocks, boulders, and kelp. The bottom is generally muddy except inside Stockton Harbor where it is sandy. Depths range from 0 to 117 feet with the deepest depths lying along a 250- to 500-meter wide strip running close to the eastern shore of Cape Jellison.

The projection parameters were revised to change the modified transverse mercator projection to polyconic projection and to center the hydrography on the smooth sheets.

The TRA correctors for all the survey launches have been revised during office processing to apply corrections for vessel drafts that was provided by the MT. MITCHELL in a subsequent letter, dated November 7, 1984.

Predicted tides for the reduction of soundings on the field sheet are based on the Portland, Maine reference station with subordinate stations Belfast and Rockland. Final tide reducers for the reduction of soundings on the smooth sheet were derived from the ship-operated ADR tide gages at Belfast and Sandy Point.

2. CONTROL AND SHORELINE

The horizontal control for this survey are discussed in sections F and G of the Descriptive Report and in the Horizontal Control Report for OPR-A166-MI/HFP-84. The smooth sheet is plotted using published NGS, field and aerotriangulated positions from a listing of horizontal control stations provided by N/MOA 2222.

The following reviewed photogrammetric manuscripts apply to this survey:

T-Sheet	Scale	Date of Photography	Class
TP-01110	1:20,000	June, July, August 1982	III
TP-01111	1:20,000	June, July, August 1982	III

Shoreline and some geographic names are not shown on the smooth sheet in accordance with N/CG memorandum "Reduction of Marine Center Hydrographic Processing Backlog", dated February 16, 1984. Only geographic names of principal topographic and hydrographic features, some geographic features referenced by the hydrographer and geographic names used in the title are shown on the smooth sheet.

There is no change observed by the hydrographer in the HWL as shown on the TP manuscript. Changes to ledges adjacent to the HWL are shown in red on the field sheet and were transferred directly to the smooth sheet in black.

The shoreline discussion contained in Section H of the Descriptive Report is supplemented as follows:

a. The obstruction at latitude 44°27'34"N, longitude 68°53'01.5"W was transferred directly from TP-01110. A rock uncovering 11 feet at MLW about 60 meters southwest of the above obstruction was located in this survey at latitude 44°27'32.11"N, longitude 68°53'03.01"W. Since the position of the obstruction which is photogrammetrically located is different from the position of the rock located by the hydrographer, and there is no conclusive evidence that both features are the same, both the obstruction and a rock awash are plotted on the smooth sheet.

b. The area adjacent to the HWL on the western shore of Sears Island was verified to be foul with kelp and boulders. Since the boulders extended over an appreciable area and the field check did not provide a delineation of the foul area, the ledge symbol on the TP sheet was transferred to the smooth sheet. (Section 7.3.7.1 of Hydrographic Manual).

c. A single position was provided for the boat ramp at latitude 44°28'06"N, longitude 68°51'26"W. Since no additional measurements of the ramp were made in the field, the note "boat ramp" only is shown on the smooth sheet.

d. The rock awash symbol at latitude 44°28'58"N, longitude 68°50'11"W was plotted on the smooth sheet directly from the final field sheet. There is no supporting data for the position of the rock indicated in the descriptive report.

e. The mooring poles observed in the vicinity of latitude 44°27'13.65"N, longitude 68°47'07.20"W were reported to be uncovered 5 to 20 feet at the time of observation. The raw data, however, describes them as being covered by 1 foot to uncovered 10 feet. A height reduction based on this raw data description results in some features

being covered at MHW; however, since their location is not exactly known the entire line of stakes had been symbolized as covered at MHW. This feature should be charted at the discretion of the chart compiler.

3. HYDROGRAPHY

Crossline soundings generally agree within 1 to 2 feet with the main scheme sounding lines. Soundings are adequate to:

a. Delineate the bottom configuration, determine least depths and draw depth curves except:

A depth of 28 feet in surrounding depths of 33 to 41 feet was obtained at latitude 44°26'47"N, longitude 68°49'05"W. Additional development either by closer line spacing, cross or radial lines, drift soundings or dive investigation was not made to determine the least depth in the surrounding area of the 28-foot sounding.

b. Show that there are no significant discrepancies requiring further investigation.

c. Show that the survey had been properly controlled and soundings are plotted correctly.

The Raytheon DSF-6000N echo sounder was used most of the time in this survey. In addition to the suspicious traces discussed in Section P (II) of the Descriptive Report, it should be mentioned that investigation by wire drag and by closer spaced sounding lines on similar questionable indications of peaks or shoals on the echogram of this type of echo sounder for sheet H-10134 disproved the existence of all investigated items.

4. CONDITION OF SURVEY

The hydrographic records and report conform to the requirement of the Hydrographic Manual, 4th Edition, revised through change 3, except as noted in the Preprocessing Examination Report, dated October 10, 1984 and the following:

a. The geographic names list submitted with this survey contains the following discrepancies:

1). Perkins Point which is referenced by the hydrographer is neither included in the geographic names list nor shown on the field sheet.

2). Geographic names Bagaduce River, North Castine and Stockton Springs are included in the geographic names listing although they are all outside the sheet's limits.

b. There are four different velocity tables used in the survey which are listed under 32 velocity table numbers, resulting in identical velocity tables with different table numbers. It is not necessary to

provide separate velocity tables for each vessel if the tables are identical, as the same velocity table can be referenced for different vessels.

5. JUNCTIONS

H-10130 junctions with the following surveys:

Survey	Year	Scale	Location	Note
H-7198	1947	1:10,000	West	Adjoins
H-10109	1983	1:10,000	Southwest	Joins
H-10131	1984	1:10,000	Southeast	Joins
H-10134	1984	1:10,000	North	Joins

Junctions were satisfactorily effected with the surveys listed above with the exception of H-7198 which was previously forwarded to headquarters. Junctioning was accomplished with a copy of the smooth sheet. Depths and depth curves in all of the above junction areas are in good agreement.

6. COMPARISON WITH PRIOR SURVEYS

H-1258 1:20,000 (1872)

Except for significant differences between data obtained in this survey and the data from the prior survey which are discussed below and in Sections H and K of the Descriptive Report, the two surveys generally compare well with each other. The disposition and recommendations of the hydrographer together with the marginal notes by the evaluator in the Descriptive Report are considered appropriate and adequate to resolve the discrepancies between the two surveys.

Significant differences in soundings between the two surveys were generally observed along the crosslines of the prior surveys. Soundings between latitudes 44°25'12"N and 44°26'09"N and between longitudes 68°55'18"W and 68°56'02"W are generally 6 feet shoaler than the present survey. Soundings along the main scheme lines of the prior survey are generally in good agreement with the current survey.

H-10130 is adequate to supersede the prior survey for the area of common coverage.

7. COMPARISON WITH CHART

Chart 13309 23rd Edition, March 24, 1984, 1:40,000
Chart 13302 14th Edition, February 26, 1983, 1:80,000

a. Hydrography - Most soundings and other information on these charts originate from the prior surveys mentioned in Section 6 of this report except in the area south of the facilities at Mack Point which has reportedly been dredged in 1980, and about 60% of the soundings in Stockton Harbor. Soundings in the areas mentioned above originate from miscellaneous sources.

These soundings off Mack Point from miscellaneous sources are up to 4 feet shallower than the present soundings. Soundings from miscellaneous sources inside Stockton Harbor are in good agreement with the charted soundings. Large differences in ledge delineation were found in the eastern shore of Cape Jellison from Squaw Point to Cape Junction and also along the entire shore on the eastern limit of the survey sheet. Charted ledges were found to be foul with boulders instead of rock ledge.

The disposition of AWOIS items is adequately discussed by the hydrographer except as noted below.

The investigation of the extensive wharf ruins noted under AWOIS item 02962 in the vicinity of latitude 44°27'54"N, longitude 68°51'39"W was inadequate to disprove the existence of the ruins as charted. It is recommended that the ruins remain as charted until further investigated.

The investigation of the pier ruins noted under AWOIS item 03009 at latitude 44°26'58.5"N, longitude 68°54'22.5"W, was inadequate. The hydrographer fails to render a disposition for the ruins charted extending south from his most seaward fix at latitude 44°27'04.5"N, longitude 68°54'22.4"W. Since this portion of the ruins have neither been verified or disproven they should be charted as submerged. North of the hydrographer's position they should be charted as visible at MHW.

The investigation of pier ruins noted under AWOIS item 03018 did not result in a complete and accurate description of the charted ruins. The hydrographer clearly states that several sets of piling were located during a dive investigation; however, no accurate locations are provided. Since the investigation was of a previously well-located feature the smooth sheet has been annotated to note the existence of an area containing submerged piling. The charted delineation of the pier ruins should remain unchanged; however, the ruins should be revised to submerged at MLW. The 2 dolphins charted off the seaward end of the ruins should be deleted as recommended by the hydrographer.

Geographic names appearing on the smooth sheet originate with the chart.

H-10130 is adequate to supersede the charted information within the area of common coverage.

b. Controlling Depths - The access channel leading to a turning basin off the facilities at Mack Point was reported to have been dredged to a controlling depth of 35 feet in April 1984 (see U.S. Coast Pilot 1 page 136). Depths of 36 to 40 feet were observed in the middle portion of the dredged area in this survey.

c. Aids to Navigation - There are two (2) fixed aids to navigation listed in the light list that fall within the limits of the survey, namely:

Fort Point Ledge Daybeacon 2 at latitude 44°27'39.489"N, longitude 68°48'38.212"W and Fort Point Light at latitude 44°28'01.410"N, longitude 68°48'43.948"W.

In addition, two (2) privately maintained fixed aids to navigation composed of white flashing lights on two separate platforms were located.

A total of twelve (12) buoys serving as floating aids to navigation were located in this survey.

The above aids adequately serve their intended purpose.

8. COMPLIANCE WITH INSTRUCTIONS

H-10130 complies adequately with the project instructions and changes to the instructions mentioned in Section 1 of this report.

9. ADDITIONAL FIELD WORK

H-10130 is a good basic hydrographic survey. Additional field work, however, is recommended on a non-priority basis to:

a. Verify or disprove the existence of the pipeline charted at between the shore and the pipeline intake at latitude 44°27'06.15"N, longitude 68°54'03.87"W. Disregard. Item disproved SLB

b. Determine the least depth in the surrounding area of the 28-foot sounding at latitude 44°26'47"N, longitude 68°49'05"W.

Arsenio A. Luceno
Cartographer
September 1985

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
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10130

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.

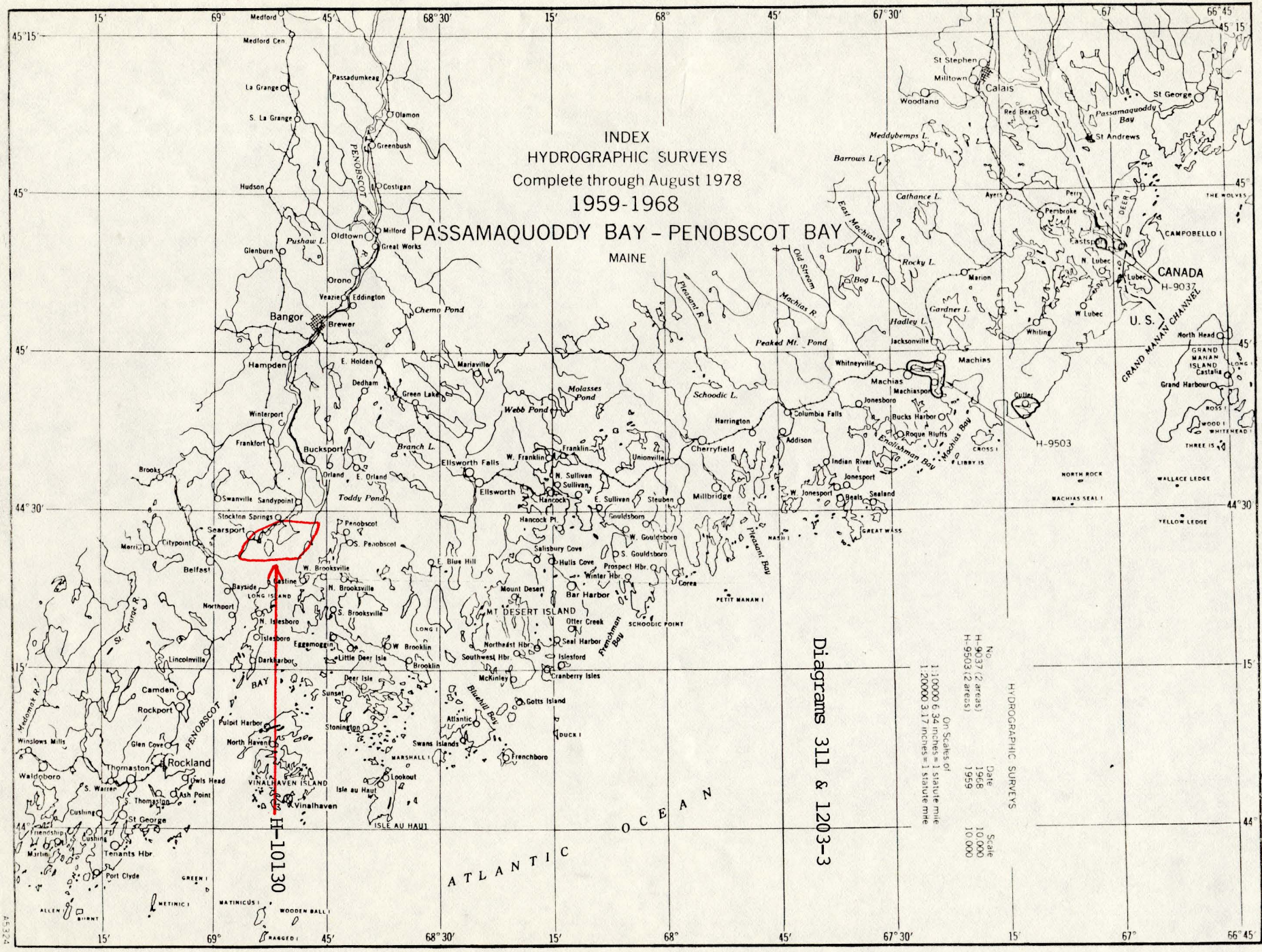
David W. Yeager
Chief, Nautical Chart Branch (Date)

CLEARANCE: SIGNATURE AND DATE:

N/MOP2:LWMordock

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.

Robert L. Sandquist 9/27/85
Director, Pacific Marine Center (Date)



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

Hydrographic Index No. 60 H

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-10130

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	11/20/86	H Church	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 35, 35P
13302	11/20/86	H Church	
			Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via
			Drawing No. 32
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.