PUB. 145

SAILING DIRECTIONS (ENROUTE)

★

NOVA SCOTIA AND THE ST. LAWRENCE

★

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NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
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EIGHTEENTH EDITION

Preface

Pub. 145, Sailing Directions (Enroute) Nova Scotia and the St. Lawrence, Eighteenth Edition, 2018, is issued for use in conjunction with Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas. Companion volumes are Pubs. 141, 142, 143, 146, 147, and 148.

Digital Nautical Charts 22 provides electronic chart coverage for the area covered by this publication.

This publication has been corrected to 3 February 2018, including Notice to Mariners No. 5 of 2018. Subsequent updates have corrected this publication to 11 December 2021, including Notice to Mariners No. 50 of 2021.

Explanatory Remarks

Sailing Directions are published by the National Geospatial-Intelligence Agency (NGA) under the authority of Department of Defense Directive 5105.60, dated 29 July 2009, and pursuant to the authority contained in U. S. Code Title 10, Chapter 22, Section 451 and Title 44, Section 1336. Sailing Directions, covering the harbors, coasts, and waters of the world, provide information that cannot be shown graphically on nautical charts and is not readily available elsewhere.

Sailing Directions (Enroute) include detailed coastal and port approach information which supplements the largest scale chart produced by the National Geospatial-Intelligence Agency. This publication is divided into geographic areas called "Sectors."

Bearings.—Bearings are true, and are expressed in degrees from 000° (north) to 360°, measured clockwise. General bearings are expressed by the initial letters of the points of the compass (e.g. N, NNE, NE, etc.). Adjective and adverb endings have been discarded. Wherever precise bearings are intended, degrees are used.

Charts.—Reference to charts made throughout this publication refer to both the paper chart and the Digital Nautical Chart (DNC).

Corrective Information.—Users should refer corrections, additions, and comments to NGA's Maritime Operations Desk, as follows:

NGA Maritime—Contact Information	
Maritime Operations Desk	
Toll free	1-800-362-6289
Commercial	571-557-5455
DSN	547-5455
E-mail	navsafety@nga.mil
Maritime Safety Office	
DNC web site	https://dnc.nga.mil

NGA Maritime—Contact Information	
Maritime Domain web site	https://msi.nga.mil
E-mail	MarHelp@nga.mil
Maritime Quality Feedback System (MQFS)	https://marhelp.nga.mil
Mailing address	Maritime Safety Office National Geospatial-Intelligence Agency Mail Stop N64-SFH 7500 Geoint Drive Springfield VA 22150-7500

New editions of Sailing Directions are corrected through the date of publication shown above. Important information to amend material in the publication is available is updated as needed and available as a downloadable corrected publication from the NGA Maritime Domain web site.

NGA Maritime Safety Office Web Site
https://msi.nga.mil

Courses.—Courses are true, and are expressed in the same manner as bearings. The directives "steer" and "make good" a course mean, without exception, to proceed from a point of origin along a track having the identical meridional angle as the designated course. Vessels following the directives must allow for every influence tending to cause deviation from such track, and navigate so that the designated course is continuously being made good.

Currents.—Current directions are the true directions toward which currents set.

Distances.—Distances are expressed in nautical miles of 1 minute of latitude. Distances of less than 1 mile are expressed in meters, or tenths of miles.

Geographic Names.—Geographic names are generally those used by the nation having sovereignty. Names in parentheses following another name are alternate names that may appear on some charts. In general, alternate names are quoted only in the principal description of the place. Diacritical marks, such as accents, cedillas, and circumflexes, which are related to specific letters in certain foreign languages, are not used in the interest of typographical simplicity.

Geographic names or their spellings do not necessarily reflect recognition of the political status of an area by the United States Government.

Heights.—Heights are referred to the plane of reference used for that purpose on the charts and are expressed in meters.

Internet Links.—This publication provides Internet links to web sites concerned with maritime navigational safety, including but not limited to, Federal government sites, foreign Hydrographic Offices, and foreign public/private port facilities. NGA makes no claims, promises, or guarantees concerning the

accuracy, completeness, or adequacy of the contents of these web sites and expressly disclaims any liability for errors and omissions in the contents of these web sites.

International Ship and Port Facility Security (ISPS) Code.—The ISPS Code is a comprehensive set of measures to enhance the security of ships and port facilities developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States. Information on the ISPS Code can be found at the International Maritime Organization web site:

International Maritime Organization Home Page
http://www.imo.org

Lights and Fog Signals.—Lights and fog signals are not described, and light sectors are not usually defined. The Light Lists should be consulted for complete information.

National Ocean Claims.—Information on national ocean claims and maritime boundary disputes, which have been compiled from the best available sources, is provided solely in the interest of the navigational safety of shipping and in no way constitutes legal recognition by the United States. These non-recognized claims and requirements may include, but are not limited to:

1. A requirement by a state for advance permission or notification for innocent passage of warships in the territorial sea.
2. Straight baseline, internal waters, or historic waters claims.
3. The establishment of a security zone, where a state claims to control activity beyond its territorial sea for security reasons unrelated to that state's police powers in its territory, including its territorial sea.

Radio Navigational Aids.—Radio navigational aids and radio weather services are not described in detail. Publication No. 117 Radio Navigational Aids and NOAA Publication, Selected Worldwide Marine Weather Broadcasts, should be consulted.

Soundings.—Soundings are referred to the datum of the charts and are expressed in meters.

Telephone and Facsimile Numbers.—Within this publication, the international telephone and facsimile numbers provided as contact information contain the minimum digits necessary to dial. Please note that these contact numbers do not include additional digits or special characters, such as (0) or (+), which may be required when dialing. The necessity of such digits and characters depend upon numerous factors and conditions, such as the user's geolocation and service provider. Mariners are advised to consult their communications equipment and service provider user manuals for guidance.

Time.—Time is normally expressed as local time unless specifically designated as Universal Coordinated Time (UTC).

Time Zone.—The Time Zone description(s), as well as information concerning the use of Daylight Savings Time, are included. The World Time Zone Chart is available on the Internet at the web site given below.

Standard Time Zone of the World Chart
https://www.cia.gov/maps/world-regional

U.S. Maritime Advisory System.—The U.S. Maritime Advisory System is a streamlined inter-agency approach to identifying and promulgating maritime security threats. The system replaces Special Warnings to Mariners (State Department), MARAD Advisories (Maritime Administration), and Marine Safety Information Bulletins (U.S. Coast Guard) and consists of the following items:

1. U.S. Maritime Alert—Provides basic information (location, incident, type, date/time) on reported maritime security threats to U.S. maritime industry interests. U.S. Maritime alerts do not contain policy or recommendations for specific courses of information.
2. U.S. Maritime Advisory—Provides more detailed information, when appropriate, through a "whole-of-government" response to an identified maritime threat.

Maritime Administration (MARAD)—U.S. Maritime Advisory System
https://www.marad.dot.gov/environment-and-safety/office-of-security/msci

Winds.—Wind directions are the true directions from which winds blow.

Reference List

The principal sources examined in the preparation of this publication were:

British Hydrographic Department Sailing Directions.

Canadian Hydrographic Service Sailing Directions.

Various port handbooks.

Reports from United States naval and merchant vessels and various shipping companies.

Other U.S. Government publications, reports, and documents.

Charts, light lists, tide and current tables, and other documents in possession of the Agency.

Internet Web sites, as follows:

1. Atlantic Canada Information.
   http://www.atlanticcanada.info/nsphotos.htm
2. City Views—Montreal.
   http://www.cityvu.com/ENGLISH/MTLSKYS.HTM
3. Environment Canada.
   http://www.cmc.ec.gc.ca/climate/normals/eprovndx.htm
4. FedNav Terminals.
   http://www.cam.org/~fednav/terminals.html
5. Government of Canada—Terrain Services Division.
   http://sts.gsc.nrcan.gc.ca/landf.htm
6. Government of Prince Edward Island.
   http://www.gov.pe.ca/aerial/index.php3
7. Grand Manan Lighthouses.
   http://www.geocities.com/Heartland/Shores/9025
8. IDAYC Lighthouse Search.
   http://www.corgy.freeserve.co.uk/links/lighthouselinks3.htm

9. Iron Ore Company of Canada.
http://www.ironore.ca
10. Lighthouse Depot Online.
http://www.ls digest.com./home.cfm
11. Lorne's Lighthouses.
http://www.lorneslights.com
12. New Brunswick Home Page.
http://www.gov.nb.ca/scripts/cnb/ImageB
13. New Brunswick Lighthouses.
http://66.96.244.85/~nblight/frames.html
14. Nova Scotia Lighthouse Preservation Society.
http://ednet.ns.ca/educ/heritage/nslps
15. Old Port of Montreal Home Page.
http://www.oldportofmontreal.com/welcome4.html
16. Port of Belledune.
http://www.portofbelledune.ca
17. Port of Halifax.
http://www.portofhalifax.ca
18. Port of Montreal.
http://www.port-montreal.com
19. Port of Quebec.
http://www.portquebec.ca
20. Port of Saint John, New Brunswick.
http://www.sjport.com
21. Port of Sept-Iles.
http://www.portsi.com
22. Port of Valleyfield.
http://www.marmus.ca/valley/index.html
23. St. Lawrence Seaway System.
http://www.greatlakes-seaway.com
24. Transport Canada—Atlantic Region.
http://www.tc.gc.ca/eng/atlantic/menu.htm
25. Virtual Nova Scotia.
http://explore.gov.ns.ca/guidebook/default.htm

Date of Change: 15 December 2021	
Notice to Mariners: 50/2021	
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Sector 6	Paragraph 6.83
Sector 7	Paragraphs 7.11 and 7.35
Sector 9	Paragraphs 9.11, 9.19, and 9.37
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Date of Change: 26 December 2020	
Notice to Mariners: 52/2020	
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Sector 2	Paragraphs 2.14, 2.16, 2.27, 2.29, 2.37, and 2.38

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Date of Change: 19 October 2019	
Notice to Mariners: 42/2019	
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Sector 3	Paragraph 3.6
Sector 4	Paragraph 4.20
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Date of Change: 6 April 2019	
Notice to Mariners: 14/2019	
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Date of Change: 3 November 2018	
Notice to Mariners: 44/2018	
Sector	**Paragraphs**
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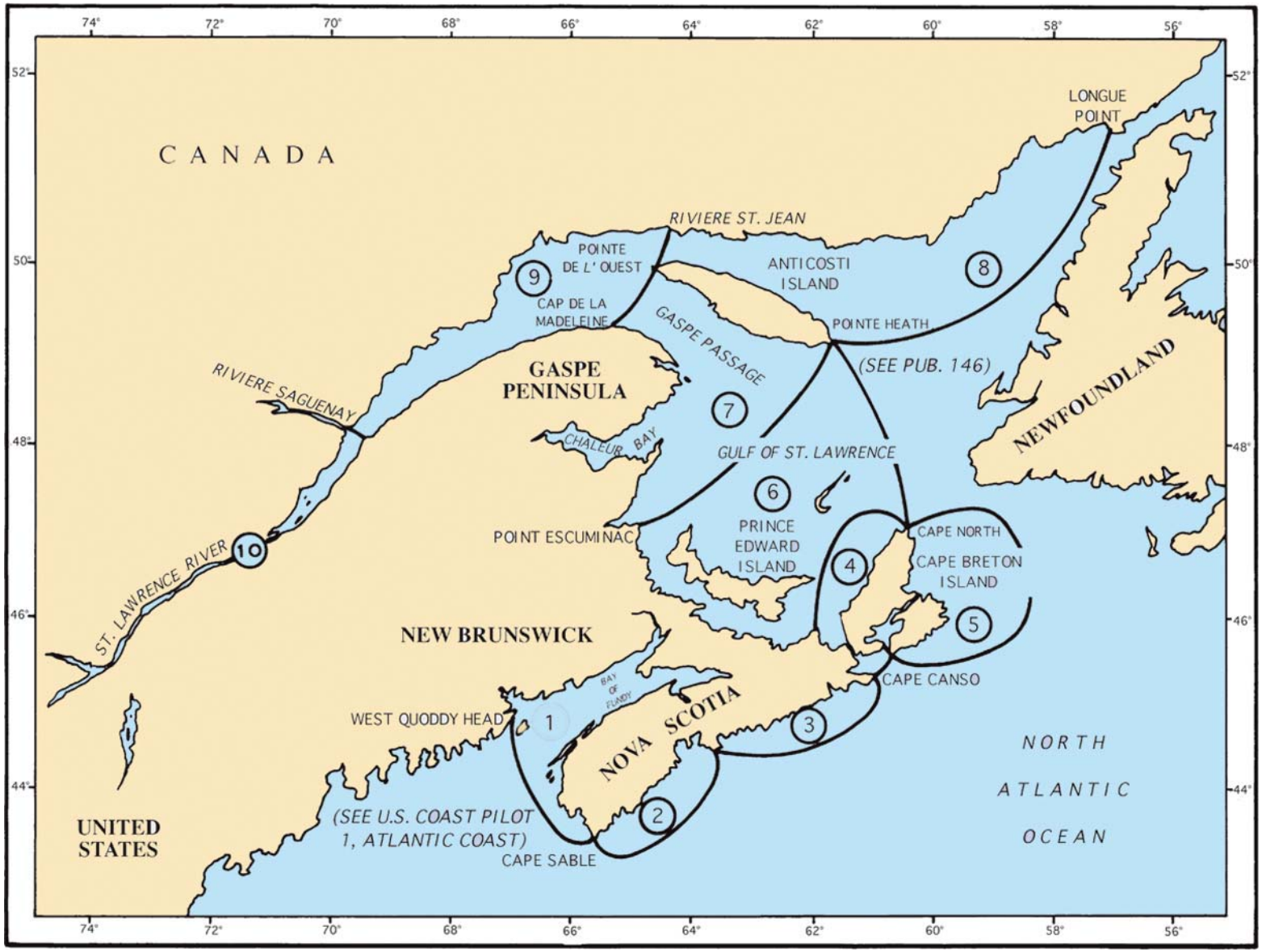
Sector 9	Paragraphs 9.8, 9.34, and 9.37
Sector 10	Paragraphs 10.14, 10.37, 10.46, and 10.54



SECTOR LIMITS—**PUB. 145**

Feet to Meters

Feet	0	1	2	3	4	5	6	7	8	9
0	0.00	0.30	0.61	0.91	1.22	1.52	1.83	2.13	2.44	2.74
10	3.05	3.35	3.66	3.96	4.27	4.57	4.88	5.18	5.49	5.79
20	6.10	6.40	6.71	7.01	7.32	7.62	7.92	8.23	8.53	8.84
30	9.14	9.45	9.75	10.06	10.36	10.67	10.97	11.28	11.58	11.89
40	12.19	12.50	12.80	13.11	13.41	13.72	14.02	14.33	14.63	14.93
50	15.24	15.54	15.85	16.15	16.46	16.76	17.07	17.37	17.68	17.98
60	18.29	18.59	18.90	19.20	19.51	19.81	20.12	20.42	20.73	21.03
70	21.34	21.64	21.95	22.25	22.55	22.86	23.16	23.47	23.77	24.08
80	24.38	24.69	24.99	25.30	25.60	25.91	26.21	26.52	26.82	27.13
90	27.43	27.74	28.04	28.35	28.65	28.96	29.26	29.57	29.87	30.17

Fathoms to Meters

Fathoms	0	1	2	3	4	5	6	7	8	9
0	0.00	1.83	3.66	5.49	7.32	9.14	10.97	12.80	14.63	16.46
10	18.29	20.12	21.95	23.77	25.60	27.43	29.26	31.09	32.92	34.75
20	36.58	38.40	40.23	42.06	43.89	45.72	47.55	49.38	51.21	53.03
30	54.86	56.69	58.52	60.35	62.18	64.01	65.84	67.67	69.49	71.32
40	73.15	74.98	76.81	78.64	80.47	82.30	84.12	85.95	87.78	89.61
50	91.44	93.27	95.10	96.93	98.75	100.58	102.41	104.24	106.07	107.90
60	109.73	111.56	113.39	115.21	117.04	118.87	120.70	122.53	124.36	126.19
70	128.02	129.85	131.67	133.50	135.33	137.16	138.99	140.82	142.65	144.47
80	146.30	148.13	149.96	151.79	153.62	155.45	157.28	159.11	160.93	162.76
90	164.59	166.42	168.25	170.08	171.91	173.74	175.56	177.39	179.22	181.05

Meters to Feet

Meters	0	1	2	3	4	5	6	7	8	9
0	0.00	3.28	6.56	9.84	13.12	16.40	19.68	22.97	26.25	29.53
10	32.81	36.09	39.37	42.65	45.93	49.21	52.49	55.77	59.06	62.34
20	65.62	68.90	72.18	75.46	78.74	82.02	85.30	88.58	91.86	95.14
30	98.42	101.71	104.99	108.27	111.55	114.83	118.11	121.39	124.67	127.95
40	131.23	134.51	137.80	141.08	144.36	147.64	150.92	154.20	157.48	160.76
50	164.04	167.32	170.60	173.88	177.16	180.45	183.73	187.01	190.29	193.57
60	196.85	200.13	203.41	206.69	209.97	213.25	216.54	219.82	223.10	226.38
70	229.66	232.94	236.22	239.50	242.78	246.06	249.34	252.62	255.90	259.19
80	262.47	265.75	269.03	272.31	275.59	278.87	282.15	285.43	288.71	291.99
90	295.28	298.56	301.84	305.12	308.40	311.68	314.96	318.24	321.52	324.80

Meters to Fathoms

Meters	0	1	2	3	4	5	6	7	8	9
0	0.00	0.55	1.09	1.64	2.19	2.73	3.28	3.83	4.37	4.92
10	5.47	6.01	6.56	7.11	7.66	8.20	8.75	9.30	9.84	10.39
20	10.94	11.48	12.03	12.58	13.12	13.67	14.22	14.76	15.31	15.86
30	16.40	16.95	17.50	18.04	18.59	19.14	19.68	20.23	20.78	21.33
40	21.87	22.42	22.97	23.51	24.06	24.61	25.15	25.70	26.25	26.79
50	27.34	27.89	28.43	28.98	29.53	30.07	30.62	31.17	31.71	32.26
60	32.81	33.36	33.90	34.45	35.00	35.54	36.09	36.64	37.18	37.73
70	38.28	38.82	39.37	39.92	40.46	41.01	41.56	42.10	42.65	43.20
80	43.74	44.29	44.84	45.38	45.93	46.48	47.03	47.57	48.12	48.67
90	49.21	49.76	50.31	50.85	51.40	51.95	52.49	53.04	53.59	54.13

Abbreviations

The following abbreviations may be used in the text:

Units

°C	degree(s) Centigrade	km	kilometer(s)
cm	centimeter(s)	m	meter(s)
cu.m.	cubic meter(s)	mb	millibars
dwt	deadweight tons	MHz	megahertz
FEU	forty-foot equivalent units	mm	millimeter(s)
gt	gross tons	nt	net tons
kHz	kilohertz	TEU	twenty-foot equivalent units

Directions

N	north	S	south
NNE	northnortheast	SSW	southsouthwest
NE	northeast	SW	southwest
ENE	eastnortheast	WSW	westsouthwest
E	east	W	west
ESE	eastsoutheast	WNW	westnorthwest
SE	southeast	NW	northwest
SSE	southsoutheast	NNW	northnorthwest

Vessel types

LASH	Lighter Aboard Ship	Ro-ro	Roll-on Roll-off
LNG	Liquified Natural Gas	ULCC	Ultra Large Crude Carrier
LPG	Liquified Petroleum Gas	VLCC	Very Large Crude Carrier
OBO	Ore/Bulk/Oil	VLOC	Very Large Ore Carrier
Lo-lo	Lift-on Lift-off	FSO	Floating Storage and Offloading
NGL	Natural Gas Liquids	FSU	Floating Storage Unit
FSRU	Floating Storage and Regasification Unit	FPSO	Floating Production Storage and Offloading

Time

ETA	estimated time of arrival	GMT	Greenwich Mean Time
ETD	estimated time of departure	UTC	Coordinated Universal Time

Water level

MSL	mean sea level	LWS	low water springs
HW	high water	MHWN	mean high water neaps
LW	low water	MHWS	mean high water springs
MHW	mean high water	MLWN	mean low water neaps
MLW	mean low water	MLWS	mean low water springs
HWN	high water neaps	TFW	Tropical Fresh Water
HWS	high water springs	HAT	highest astronomical tide
LWN	low water neaps	LAT	lowest astronomical tide

Communications

D/F	direction finder	MF	medium frequency
R/T	radiotelephone	HF	high frequency
GMDSS	Global Maritime Distress and Safety System	VHF	very high frequency
LF	low frequency	UHF	ultra high frequency

Navigation

LANBY	Large Automatic Navigation Buoy	SBM	Single Buoy Mooring
NAVSAT	Navigation Satellite	SPM	Single Point Mooring
ODAS	Ocean Data Acquisition System	TSS	Traffic Separation Scheme
CBM	Conventional Buoy Mooring System	VTC	Vessel Traffic Center
MBM	Multi-Buoy Mooring System	VTS	Vessel Traffic Service

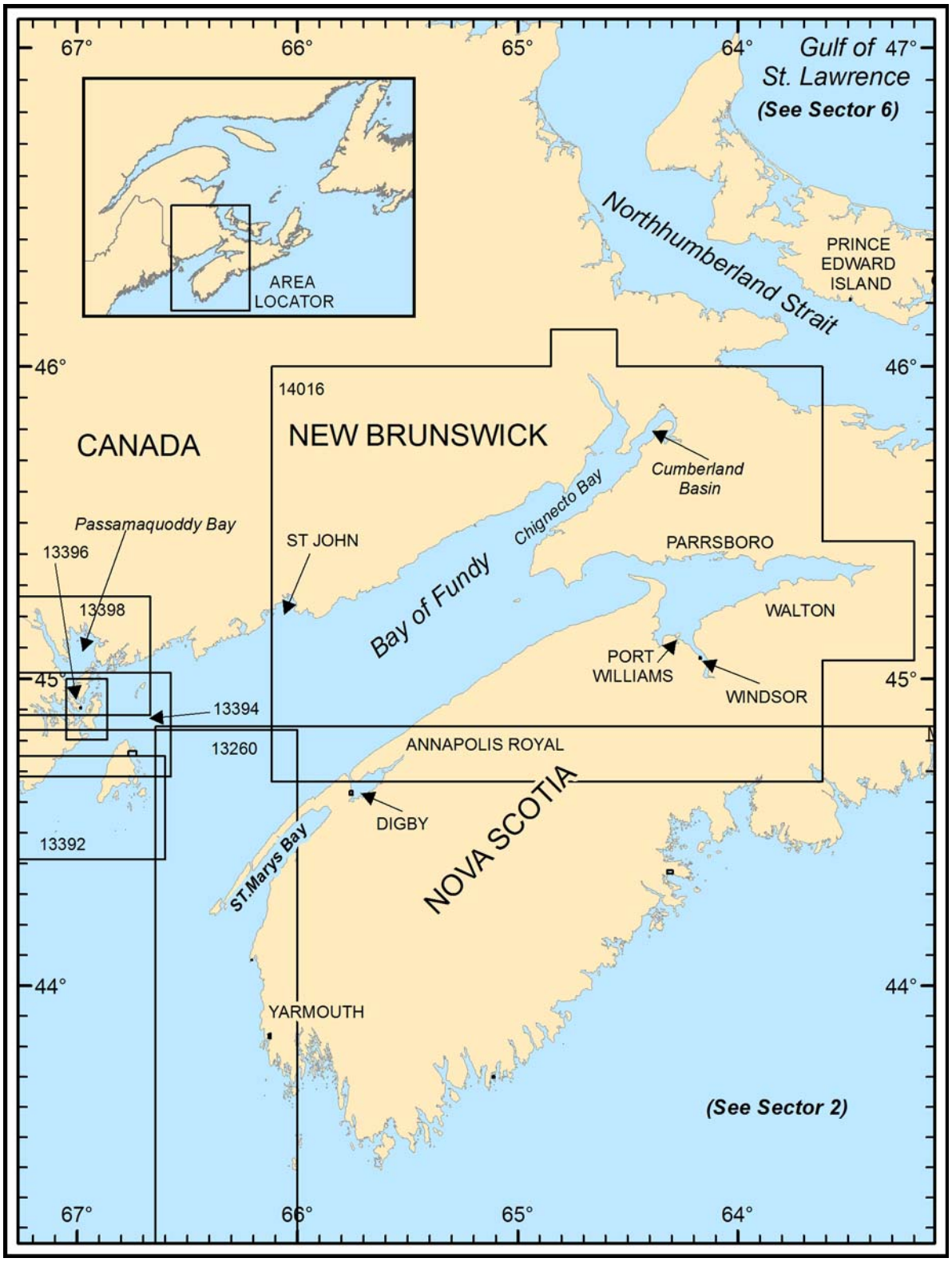
The following abbreviations may be used in the text:

CALM	Catenary Anchor Leg Mooring

Miscellaneous

AIS	Automatic Identification System	MMSI	Maritime Mobile Service Identity Code
COLREGS	Collision Regulations	No./Nos.	Number/Numbers
IALA	International Association of Lighthouse Authorities	PA PD	Position approximate Position doubtful
IHO	International Hydrographic Organization	Pub.	Publication
IMO	International Maritime Organization	SOLAS	International Convention for Safety of Life at Sea
IMDG	Intermational Maritime Dangerous Goods Code		
LOA	length overall	St./Ste.	Saint/Sainte
UKC	Under keel clearance	ISPS	International Ship and Port facility Security
ITC	International Convention on the Tonnage Measurement of Ships (1969)	ECDIS	Electronic Chart Display and Information System

Contents



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **1** — CHART INFORMATION

SECTOR 1

THE BAY OF FUNDY AND NOVA SCOTIA—SOUTHWEST COAST

Plan.—This sector first describes the NW shore of the Bay of Fundy, from Grand Manan Island to Cumberland Basin. The arrangement of this first part is from SW to NE.

The SW coast of Nova Scotia, from Cape Sable, the SW extremity of Nova Scotia to **Brier Island** (44°15'N., 66°22'W.); the SE shore of the Bay of Fundy to Minas Basin is then described. The arrangement of this part is from the SE to NW, then to the NE.

Note.—The Nova Scotia Banks are described beginning in paragraph 3.59.

General Remarks

1.1 The **Bay of Fundy**, a NE extension of the Gulf of Maine, separates the peninsula of Nova Scotia from the Province of New Brunswick. It has a general width of 30 miles and a length of 90 miles from Grand Manan Island at its entrance to Cape Chignecto near its head. At Cape Chignecto it divides into two branches, Chignecto Channel on the N and Minas Basin on the S.

Grand Manan Island, with its associated islets and dangers, divides the entrance into two passages. The W passage, Grand Manan Channel, is about 5.5 miles wide and free from dangers. The E passage is much wider, but is bordered on each side by off-lying rocks and shoals. Navigation in the Bay of Fundy requires constant attention due to the rapid and uncertain tidal currents, the prevalence of fogs, and the difficulty of obtaining anchorage due to the depth of water. Vessels bound for ports on the NW side of the bay may wish to use Grand Manan Channel in preference to the SE channel, as the Maine coast is often quite clear when the coast of Nova Scotia and most of the bay is enveloped in fog.

Winds—Weather.—In consequence of the frequency with which depressions pass near to or across Nova Scotia, winds are very variable. In the Bay of Fundy, winds tend to blow along the central axis of the bay. Except in Minas Bay, S to SW winds in summer and N to NW winds in winter are more prevalent than in the open sea SE of Nova Scotia.

Bay of Fundy Weather
http://www.ec.gc.ca/default.asp?lang-EN&n=C062DE2A-1

Ice—There is a great amount of pack ice and icebergs that are carried S by the Labrador Current when approaching the E side of Canada. In Canadian waters the Canadian Coast Guard Publication, "Ice Navigation in Canadian Waters", should be consulted. The internet site is as follows:

Ice Navigation in Canadian Waters
http://www.ice-glaces.ec.gc.ca

Tides—Currents.—The tides of the Bay of Fundy, which are the greatest known, are very regular and the tidal currents are not easily disturbed by wind. the tidal differences are thus very constant for each locality from Yarmouth to the head of the bay. The average spring range of tide in the upper parts of Chignecto Bay and Minas Channel are about 11.3m, as compared to about 3m in the Gulf of Maine. In the vicinity of Burntcoat Head, at the head of Minas Basin, the tide rises 14.3m at neaps to 16.6m at spring tides.

Tidal currents to a distance of 12 miles from Cape Sable were found to be somewhat regular during a survey in the summer season; however, it was reported that on **Browns Bank** (42°29'N., 66°13'W.) the current occasionally sets to the NE continuously for 15 hours at a velocity of 2 knots. Therefore, when crossing this area, mariners should exercise extreme caution, particularly during reduced visibility.

The currents in the Bay of Fundy are predominantly tidal in character, with the flood current running strongly to the N and NE and the ebb current to the S and SW; any set in a cross direction occurs only when the current is weak. Offshore, the current turns in a clockwise direction at SW and does not reverse its direction as quickly as it does nearer the shore.

Pilotage.—Pilotage for ports in this sector is obtained through the Atlantic Pilotage Authority. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further information.

Traffic Separation Scheme.—For vessels entering or departing from the Bay of Fundy to the SE of Grand Manan Island, there is a compulsory traffic separation scheme about 20 miles SE of Southwest Head in Grand Manan Basin.

Vessel Traffic Management Services.—A VTS center at Saint John, New Brunswick (call sign Fundy Traffic) administers a system for the Bay of Fundy, including Saint John Harbor. The system features radar, VHF radio, and VHF D/F monitoring.

Participation is mandatory, as follows:

1. All vessels of 20m or more in length.
2. Vessels engaged in towing or pushing where the combined length of the ship and any vessel or object towed or pushed by the ship is 45m or more in length.
3. Vessels engaged in towing or pushing where the length of the vessel or object being towed or pushed by the ship is 20m or more in length.
4. Air cushion vehicles of 8m or more in length.

A traffic clearance is required before entering a zone or departing a berth or mooring. Clearance is obtained by making reports 15 minutes before entering the zone, arriving at a calling in point, arriving at a berth, and departing a berth.

The VTS Center (call sign Fundy Traffic) can be contacted, as follows:

1. Sector 1—VHF channel 14.
2. Sector 2—VHF channel 12.
3. Sector 3—VHF channel 71.

Caution.—Large concentrations of fishing vessels may be encountered throughout the year in the approaches to the Bay of Fundy and in Grand Manan Basin.

Grand Manan Island

1.2 Grand Manan Island, a part of the Province of New Brunswick, is thickly wooded and about 122m high near its N end. Northern Head (44°48'N., 66°47'W.), the N extremity of the island, lies about 7 miles E of West Quoddy Head, Maine. The W coast of the island is steep-to, with cliffs rising from 61m near Southwest Head, its S extremity, to nearly 122m near Northern Head. The E and S sides have several harbors and anchorages, but their approach is made difficult by numerous islets, rocks, and shoals extending about 8 miles SE and 10.5 miles SW of the island.

Local magnetic anomalies exist in two areas S of Grand Manan Island, about 4.8 miles S and 6.5 miles ESE, respectively, of Southwest Head. It has been reported that compass deflections of up to 45° have been observed in the latter area.

Grand Manan Island—Weather Characteristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Temperature (°C)												
Mean	-4.4	-5.0	-1.1	4.4	8.9	13.3	16.7	16.7	13.9	8.9	3.9	-2.2
Mean daily maximum	0.0	-0.6	2.8	7.8	13.3	17.8	21.1	20.6	17.8	12.2	7.2	2.2
Mean daily minimum	-9.4	-8.9	-4.4	0.5	5.0	8.9	12.2	12.2	10.0	5.6	0.5	-6.7
Extreme high	12.2	15.0	15.6	23.9	25.6	28.9	31.1	31.1	28.9	25.6	16.1	13.3
Extreme low	-23.9	-22.8	-19.4	-10.0	-1.7	2.2	4.4	6.1	1.1	-3.3	-11.7	-26.1
Relative Humidity (per cent)												
Mean (1200Z)	89	89	86	81	78	76	79	81	81	81	82	87
Mean (2000Z)	84	84	79	73	71	71	72	71	74	75	77	83
Cloud Cover (tenths)												
Mean (1200Z)	6.8	6.8	6.0	5.9	6.1	5.9	5.7	5.3	5.0	5.8	6.9	6.7
Mean (2000Z)	6.5	6.1	6.1	5.8	5.8	5.4	5.4	5.0	5.0	5.4	7.1	5.8
Precipitation (millimeters)												
Mean	123.4	97.2	120.9	85.6	91.7	79.5	71.1	83.6	87.6	106.9	127.3	163.3
Maximum in 24 hours	88.9	58.4	63.5	53.3	63.5	162.6	86.4	88.9	81.3	137.2	111.8	71.1
Mean amount of snow (cm)	43.7	48.0	32.3	14.0	<1.0	0	0	0	0	<1.0	7.1	30.7
Mean number of days with precipitation	14	11	14	12	12	11	11	10	10	10	13	12
Wind Speed (knots)												
Mean	9.0	8.9	9.4	8.8	8.8	8.9	7.9	7.6	8.1	8.4	8.4	8.4
Mean number of days with gales	10	7	8	5	7	3	3	2	4	6	7	7
Wind Direction (percentage of observations)												
North	9	8	10	13	10	7	6	7	8	11	14	13
Northeast	9	10	9	9	10	5	2	5	6	8	9	9
East	7	8	11	13	12	13	11	8	8	6	7	5
Southeast	7	7	6	6	7	10	8	6	6	7	5	5
South	6	6	9	7	10	10	11	10	9	8	6	4
Southwest	9	9	11	13	14	15	15	12	15	13	12	9
West	28	29	22	20	20	20	28	27	26	24	24	25
Northwest	22	21	19	15	10	9	7	13	12	15	20	27

Grand Manan Island—Weather Characteristics												
Weather Element	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Calm	3	2	3	4	7	2	12	12	10	8	3	2
Visibility												
Mean number of days with fog	2	1	3	4	7	8	9	8	6	4	2	1

Off-lying Banks, Islets, and Dangers

1.3 Grand Manan Banks consist of two rocky banks, Northeast Bank and Southwest Bank, located about 20 and 30 miles SSW, respectively, of Grand Manan Island. Northeast Bank has a least depth of 35m, while Southwest Bank has 53m.

Tides—Currents.—The flood current sets NNE and the ebb current SSW over the Grand Manan Banks, with a velocity of about 1.5 knots causing an extensive tide rip.

Traffic Reporting Point.—The S entrance to the Bay of Fundy Traffic Separation Scheme (TSS) begins about 20 miles S of Gannet Rock Light (44°31'N., 66°47'W.); this location is also the first reporting point (1A) for inbound vessels. From its entrance, the TSS leads about 30 miles NE to the vicinity of position 44°30'N, 66°25'W, where the TSS changes direction to the NNE and leads another 33 miles to unobstructed and open water.

Regulations.—A whale sanctuary for right whales, an endangered species, is active annually from 1 June 1 to 31 December. All vessels are asked to avoid passage through the area during this period. If passage through this area is required, decrease vessel speed to 10 knots or less. The sanctuary is located in Grand Manan Basin and is bounded by lines joining the following positions:

a. 44°49'N, 66°27'W.
b. 44°47'N, 66°17'W.
c. 44°40'N, 66°17'W.
d. 44°33'N, 66°22'W.
e. 44°29'N, 66°30'W.
f. 44°29'N, 66°37'W.
g. 44°42'N, 66°37'W.

A large part of this area is in the Bay of Fundy Traffic Separation Scheme and consequently may be difficult to avoid. Mariners are advised to avoid passage through this area. If this is not possible, then decrease speed, post lookouts, and maneuver around any marine mammal activity. Further information can be found in Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

A whale sanctuary, active annually from April to July, for right whales, which are an endangered species, also exists near the Boston Harbor Traffic Separation Scheme, about 43 miles SW of Seal Island within the following coordinates:

a. 42°00.0'N, 68°55.5'W.
b. 42°10.0'N, 68°31.0'W.
c. 42°00.0'N, 68°31.0'W.

Marine farms, best seen on the chart, are located off the S and W sides of Grand Manan Island at/or above the 10m curve,

1.4 **Machias Seal Island** (44°30'N., 67°06'W.), 8.5m high and steep to on its W side, lies about 10 miles SW of Southwest Head. Machias Seal Island Light is shown from a white octagonal concrete tower with a red top, 18.3m high, on the summit of the island. A fog signal of two blasts every minute is sounded.

A drying reef, with an islet near the outer end, extends about 0.4 mile NE of the islet. A 4.3m patch over which there is a tide rip, a 6.1m shoal, and a 9.1m patch, lie about 0.4 mile ESE, 0.7 mile E and 1.3 miles ENE, respectively, of the light.

Machias Seal Island Light

Machias Seal Island Light

Note.—Machias Seal Island is a designated Migratory Bird Sanctuary administered by the Government of Canada. Landing to observe the wildlife is only possible on the E side of the island by a small boat in ideal wind and sea conditions. Such visits are controlled by the Sanctuary Warden and visitors must comply with specified regulations.

1.5 Southeast Shoal, with a least depth of 2.7m, about 1 mile SE of Machias Seal Island, breaks in heavy weather and shows tide rips extending 1 mile N and S of the shoal during the strength of the tide. The tidal currents in this vicinity reach a velocity of 3 knots. The flood current sets NNE and the ebb current sets SSW.

Patches, with depths of 16.5m and 13.7m, lie about 3.3 miles SSW and 6 miles W of Machias Seal Island.

North Rock, 1.2m high, lies about 2 miles NNE of Machias Seal Island. There is a tide rip over the bank surrounding the danger. Rocky patches, with depths of 10.3m, 7.6m, and 14.6m lie 0.2 mile NE, 1.4 miles E, and 0.5 mile SSW of North Rock.

North Shoal, with a depth of 2.7m and on which the sea breaks in heavy weather, lies about 1.5 miles NNW of the island. A shoal, with depths of less than 18.3m, extends about 3.8 miles W of North Shoal. A depth of 9.1m lies on the outer end of this shoal. Tide rips exist in the vicinity of the shoal.

Middle Shoal, about 5 miles NE of Machias Seal Island, has a least depth of 5.2m, breaks in very heavy weather, and shows a tide rip.

Bull Rock (44°30'N., 66°57'W.), which dries 0.3m and on which the sea usually breaks, lies about 6.8 miles E of Machias Seal Island. A lighted whistle buoy is moored 0.3 mile NE of Bull Rock. Little Shoal, over which there is a tide rip and with least depth of 8.5m, lies about midway between the rock and the island. Two rocky patches, with depths of 8.8m and 9.4m, lie about 1.3 miles SSW and SW, respectively, of Bull Rock, in an area known as Guptill Grounds.

Southeast Ledge, about 5.8 miles SE of Machias Seal Island, has a least depth of 5.2m and breaks only in heavy weather, but is marked by tide rips. Middle Breaker, with a depth of 11m, lies nearly 1.5 miles NW of the ledge. There are tide rips over the shoal and between it and the ledge.

1.6 **Gannet Rock** (44°31'N., 66°47'W.), about 7.5 miles SE of Southwest Head, is a bare islet, about 4.6m high. The W side of the islet is steep-to, but a 2.1m shoal lies 0.25 mile SE, and a 3.4m shoal lies 0.3 mile E of it. A boat landing can be effected on the N side of the islet in good weather, the best time being at LW. The islet is connected by telephone, used for life saving purposes only, with Outer Wood Island. Gannet Rock Light is shown from a white octagonal tower with black vertical stripes, 23m high, with a dwelling attached.

Gannet Rock Bank, with depths of 12.8m, extends 1.3 miles S of Gannet Rock.

Gannet Rock Light

Murr Ledges (44°31'N., 66°52'W.), most of which dry, lie between Gannet Rock and Bull Rock. Yellow Ledge, about 3.4 miles SW of Gannet Rock, is 3m high, and the highest of the ledges. A rock, with a depth of 1.2m, which breaks in a moderate swell, lies about 0.2 mile E of this ledge. A beacon stands on White Ledge, about 2.3 miles NNW of Yellow Ledge.

Southern Ledge Shoal, an isolated 8.8m shoal, and St. Mary Ledge, which dries 5.2m, lie about 1.8 miles WSW and over 0.75 mile E, respectively, of Yellow Ledge.

Kent Shoal, with a depth of 3.4m, lies about 2 miles NNE of Gannet Rock, near the center of an extensive bank, with depths of less than 18.3m. A rock, with a depth of 10.7m, lies about 0.4 mile SSW of Kent Shoal. Outer Kent Shoal has depths of 7.6m and 4.9m about 0.8 mile and 1.3 miles W, respectively, of Gannet Rock.

Caution.—Vessels should keep well S of **Machias Seal Island** (44°30'N., 67°06'W.) and Murr Ledges, if practicable, due to the many dangers, the deep and irregular soundings, and the strong tidal currents in the area S of Grand Manan Island.

Other shoals and ledges, which are best seen on the chart, lie N and NW of Murr Ledges and Gannet Rock.

1.7 **Old Proprietor Shoal** (44°33'N., 66°40'W.), a ledge which dries 1.5m, lies about 5.8 miles NE of Gannet Rock. A lighted whistle buoy is moored about 0.8 mile SE of the same shoal. Proprietor Shoal, with less than 1.8m, lies nearly 0.5 mile WNW of Old Proprietor Shoal. Crawley Shoal, with a least depth of 6.7m, extends about 0.8 mile NNW of Proprietor Shoal. Rans Shoal, with less than 1.8m, lies nearly 3 miles S of Long Point. A 3m patch lies 0.25 mile E of Rans Shoal.

Clarks Ground, with a least depth of 9.1m and over which there are heavy tide rips on the ebb (SW) current, lies about 2.5 miles NE of Old Proprietor Shoal. Bulkhead Rip is a very heavy tide rip with the ebb (SW) current, and is caused by the uneven rocky bottom between Clarks Ground and White Head Island.

Tides—Currents.—About 3.5 miles S of Old Proprietor Shoal, the tidal current at mid-flood sets NE at 2.6 knots; at mid-ebb it sets SW at 3.9 knots for average tides. In the vicinity of Crawley Shoal, the tidal currents have a maximum rate of from 4 to 6 knots.

Grand Manan Island—South Shore

1.8 **Southwest Head** (44°36'N., 66°54'W.) is the SW extremity of Grand Manan Island. A light is shown at an elevation of 48m from a white square tower, attached to a white building, situated on Southwest Head.

MacGregors Reef, with a depth of 6.7m, lies nearly 1 mile S of Southwest Head. A 5.8m patch lies about midway between MacGregors Reef and the headland.

Buck Rock (Black Rock), which dries 2.4m, lies about 0.3 mile offshore on the W side of the entrance to Seal Cove. A lighted bell buoy is moored about 0.5 mile SE of Buck Rock.

Seal Cove lies on the E side of the promontory of Southwest Head. The cove is entered between **South Head** (Columbia Head) (44°35'N., 66°53'W.), about 0.9 mile E of Southwest Head, and Western Green Island, 12.5m high, about 1.5 miles further E; the cove is sheltered on the E by Wood Island. The cove affords good shelter except from S gales, which send in a

Southwest Head Light

Southwest Head Light

heavy sea. The W shore is relatively steep-to, but there are projecting ledges off the E shore.

Two groups of conspicuous boulders, locally known as the Upper and Lower Flock of Sheep, are located at the peak of the cliff along the S part of South Head (Columbia Head).

The village of **Seal Cove** (44°39'N., 66°50'W.), where there are two boat harbors, lies at the NW corner of the cove. The inner harbor, which dries, has an entrance 28m wide between two curved breakwaters. A light is shown from a triangular skeleton tower on the outer end of the W breakwater.

The other boat harbor is located to the SW of the inner harbor. This is protected by an outer breakwater and wharf, 280m long, and a breakwater with a wharf close to the N; the entrance between them is 26m wide. A light is shown from a mast at the outer end of the breakwater.

Tides—Currents.—The tidal rise at Seal Cove is 6m at springs and 5.2m at neaps.

Anchorage.—Anchorage can be taken, in 11m, mud, about 0.2 mile SE of the outer breakwater head. Anchorage can be taken further out, in 18.3m, about 0.7 mile S of the outer heads and E of Joes Point.

Caution.—Abandoned submarine cables are laid from the vicinity of the village of Seal Cove to a point on Wood Island, about 0.3 mile W of Joes Point. Another cable runs from Wood Island to Outer Wood Island. Mariners are cautioned not to anchor in the vicinity of the cables.

The passage between the N end of Wood Island and Red Head on the main island is obstructed by shoals and rocky ledges through which there is a channel with a least depth of 4m in the fairway. The channel is marked by buoys.

Maple Hill (44°40'N., 66°50'W.), 87m high, lies nearly 1 mile NW of Red Head.

Outer Wood Island lies about 0.7 mile E of Western Green Island. Shag Head Breaker, which dries 1.5m, lies about 0.2 mile SSW of Shag Head, and is marked by a buoy. White Horse Islet, 5.5m high, lies on a rocky ledge extending about 0.5 mile S from the SE extremity of the island. A light is shown from a mast, with a red and white daymark having a black square in the center, on White Horse Islet.

Grand Harbor Approach

1.9 The approach to Grand Harbor lies between White Horse Islet and **Long Point** (44°37'N., 66°43'W.), the S extremity of White Head Island, about 4 miles E. A light is shown from Long Point. White Head, a peninsula 21.3m high with conspicuous white cliffs, lies close W of White Head Island.

Cheney Island and Ross Island, each 15m high, lie between White Head Island and Grand Manan Island. Drying flats and ledges join the above four islands. Half Tide Rock, marked by a light, lies on the drying flat between Chene Island and Ross Island.

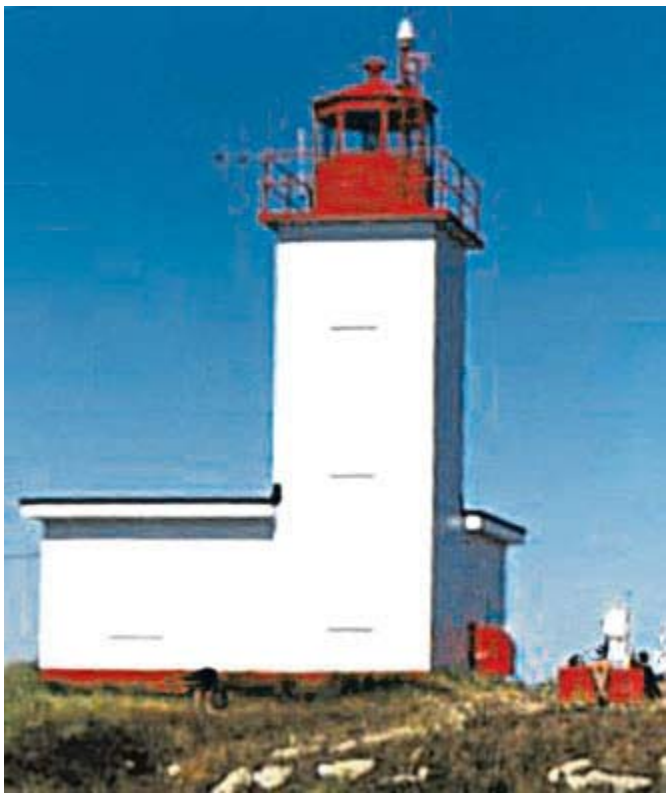
The Three Islands, consisting of Kent Island, Hay Island, and Sheep Island, joined by flats or ledges, lie in the approach to Grand Harbor. A reef, with Eastern Ledge on its outer edge, extends about 0.4 mile E from the central part of Kent Island. Constable Ledge, which dries 2.7m, lies near the outer end of a shallow bank extending about 0.5 mile W from Hays Island and is marked on its NW end by a buoy. Sheep Island Shoal, with a depth of 7m, lies about 0.5 mile W of Sheep Island.

Tinker Shoal, drying 0.6m, lies about 2 miles E of the N ex-

tremity of Kent Island and is marked by a buoy on its N end. Inner and Outer Diamond are two rocks, each of which dries 0.6m, lying close SE of Tinker Shoal.

The Green Islands, each 6m high and connected by a bank with a depth of about 4.3m, lie about 1 mile N of Hay Island. A ledge, which dries 1.8m, lies nearly 0.2 mile S of the S island. Green Islands Shoal, with a least depth of 3m, lies about 1 mile WNW of the N island.

Pumpkin Islet (44°37'N., 66°44'W.), 6.1m high, lies near the outer end of the bank with depths of less than 5.5m, which extends about 0.4 mile SW of White Head. Long Ledge and Sand Bar Ledge, N of it, dry up to 3.6m, and lie about 0.5 mile W of White Head, in a N-S direction. A buoy marks the S end of Long Ledge; a lighted bell buoy is moored off the N side of Sand Bar Ledge.



Long Point Light

1.10 Grand Harbor (44°40'N., 66°45'W.), sheltered by Ross Island, has a depth of 3.7m in the entrance until past Fish Fluke Point. The harbor itself is dry at LW and can be used only by small vessels that can lie aground. There is a government wharf, 57m long, with a depth of 4.6m alongside the head at HW. At Ingalls Head, located at the west entrance of the harbor, there are two small boat basins enclosed by two piers and one breakwater. The S breakwater wharf has a length of 313m and a depth alongside of 1.8m. The center pier is 205m in length with a depth alongside of 2.4m.

Ox Head Ledges, which dry 1.5m, lie on the W side of the entrance to Grand Harbor. A buoy is moored about 0.2 mile SE of the ledges. A buoyed channel leads to the harbor.

A ferry service runs several times a day between Grand Harbor and White Head Island.

Grand Manan Island—East Shore

1.11 The Bluff (44°37'N., 66°42'W.), the SE extremity of White Head Island, lies about 0.9 mile ENE of Long Point. Black Rocks, marked by a beacon, lie about 0.8 mile ESE of The Bluff. Halibut Rock, with 2.7m and marked close SE by a buoy, lies about 0.5 mile NE of The Bluff.

Great Duck Island Light (aerial)

Gull Cove (44°38'N., 66°41'W.) is entered between Prangle Point and Gull Rock. Gull Rock is the NE of a group of ledges. Foul ground, with drying ledges on it, extend about 0.5 mile NE of Prangle Point, and is marked E by a lighted bell buoy. Good anchorage for small vessels may be obtained, in 10m, sand, about 275m NW of Gull Rock, sheltered from all winds except those between N and SE.

Great Duck Island lies about 1.5 miles NE of Ross Island, to which it is connected by a spit with depths of less than 5.5m. A light is shown from the S end of the island. A drying ledge extends about 0.5 mile S of the island, and Great Duck Ledge, 0.3m high, lies about 1 mile farther SE. A lighted whistle buoy is moored about 0.5 mile S of Great Duck Ledge. A spit, with a depth of 5.5m at its outer end, extends 0.5 mile SSE of Great Duck Ledge.

Andys Ledge and Edmunds Rock, which dries 2.7m, lie near foul ground extending more than 0.5 mile E of Ross Island. Edmunds Rock Light is shown from a rock, which dries 2.1m, located between Edmunds Rock and Ross Island. Another useful mark is a beacon with a radar reflector on Edmunds Rock, 1.1 miles SW of Great Duck Island Light.

Anchorage can be taken, in about 9.1m, between the S end of Great Duck Island and Andys Ledge. Mariners are cautioned not to anchor in the vicinity of the submarine cable N of the anchorage, and should pass W of the 4.9m patch, about 0.5 mile SSW of Great Duck Island.

Low Duck Island, 4.6m high, lies about 1 mile NNW of Great Duck Island. High Duck Island, 18.3m high, lies about 0.4 mile farther NW. The islands lie on a drying reef.

Long Island (44°43'N., 66°43'W.), 23m high, lies about 0.5 mile N of High Duck Island. A rock, which dries 4.6m and is

marked by a buoy, lies about 0.3 mile ENE of the S point of the island. A 4.9m patch lies about 0.3 mile S of the rock. Farmer Ledge, 1.2m high and marked by a light, lies on a shallow bar connecting Long Island to Grand Manan Island.

Long Island Bay

1.12 Long Island Bay is entered between the N point of Long Island and Swallow Tail, a narrow and bold point about 1.5 miles N. The bay affords shelter from all winds except those between the NE and SE. A light is shown from a white octagonal tower with a white dwelling close by on Swallow Tail.

Swallow Tail Light

A shoal, which dries 0.9m, and a patch, which dries 0.6m, lie about 0.2 mile NE and 0.2 mile NW, respectively, of the N point of Long Island. Both dangers are marked by buoys. Dutch Ledge, which dries 4.6m, is an extension of the ledges which fringe the S end of the bay.

Pettes Cove lies between Swallow Tail and Net Point, about 0.5 mile WSW. Net Rocks, the highest of which dry 4.9m, extend about 0.2 mile SE of Net Point. A lighted bell buoy is moored slightly over 0.1 mile S of Net Rocks.

Flagg Cove lies in the N part of the Long Island Bay, W of Net Point. The village of North Head is situated about 0.4 mile NW of Net Point. A Y-shaped jetty extends about 165m WSW into a depth of 6.7m. The S arm of this jetty, known as Ferry Wharf, has a berth about 70m long on its N side with depths from 4.9 to 5.5m. A stern-loading ramp is situated at the root of the wharf. On the S side of the N leg of the jetty there is a berth 22m long with a depth of 4m.

There is a T-shaped jetty situated NW of Ferry Wharf, known as Fisherman's Wharf. The T-head is 212m long, with a least depth of 2.7m alongside, except for a 0.6m shoal near the E end. A floating slip is situated on the west side of the approach section to Fisherman's Wharf. There is a hand-operated derrick on Fisherman's Wharf.

A daily vehicle ferry service runs between Blacks Harbor on the mainland and North Head.

Anchorage.—There is good anchorage, in a depth of about 9m, mud, about 0.5 mile SW of the N end of Long Island. This anchorage is exposed to winds between the N and NE.

There is also anchorage about 0.3 mile WSW of Net Point, in about 20m, stiff clay, or closer inshore in Flagg Cove, in about 10m, but these berths are exposed to the E and SE winds.

The coast from Swallow Tail to Fish Head, about 1 mile NNW, is bold with steep cliffs. Fish Head forms the E entrance point of Whale Cove, which affords good temporary anchorage, sheltered from S winds, in a depth of 9.1m, about 0.3 mile offshore.

Northern Head (44°48'N., 66°47'W.), the N point of Grand Manan Island, lies about 2 miles NW of Fish Head. The extreme NW point of Grand Manan Island, Long Eddy Point, so named from a remarkable tide rip that darkens the water in the vicinity of the coast, lies close W of Northern Head. A light is shown near the point.

Grand Manan Island—West Coast

1.13 The W coast of Grand Manan Island from **Southwest Head** (44°36'N., 66°55'W.) to the entrance to Dark Harbor, 9 miles NNE, is wooded with steep rocky cliffs from 91 to 107m high and free from dangers. Bradford Cove, a small bight about 2 miles NNE of Southwest Head, affords temporary anchorage with offshore winds, in depths of 14.6 to 18.3m. Dark Harbor is a remarkable inlet with depths of 9 to 13m, the mouth of which is almost closed by a shingle beach.

The coast from Dark Harbor to Long Eddy Point continues bold and wooded, with an elevation of about 122m. A ledge extends about 275m NW from Long Eddy Point.

Grand Manan Channel

1.14 Grand Manan Channel is the passage between the W side of Grand Manan Island and the coast of Maine, between West Quoddy Head and Western Head, about 14.5 miles SW. The S entrance lies between **Western Head** (44°39'N., 67°11'W.) and Southwest Head. There are no dangers in the fairway. Machias Seal Island and the dangers SW and S of Grand Manan Island have been previously described beginning in paragraph 1.4.

Grand Manan Channel is the most direct passage for vessels bound up the Bay of Fundy from along the coast of Maine. It is also the safest passage up the Bay of Fundy, not only due to its freedom from shoals, but also because it is less subject to fog than is the passage E of Grand Manan Island.

Winds—Weather.—It is reported that fog often persists close in to the Maine coast between Machias Bay and West Qoddy Head, extending about one third of the way across Grand Manan Channel, while the rest of the channel may be entirely free of fog.

Tides—Currents.—The tidal currents set through Grand Manan Channel at velocities of from 1.5 to 2.5 knots. The current sets approximately parallel to the channel, the flood setting NE and the ebb SW. Off the W coast of Grand Manan Island the currents run parallel to the shore at a velocity of about 3 knots.

Grand Manan Channel—Northwest Side

1.15 Little River Island (44°39'N., 67°12'W.), in the middle of the entrance to the Little River, is wooded and rocky, and can be recognized by the white conical tower on its NE corner. The Little River, entered N of Little River Island, is small and easy to access through a channel with a depth of about 8.5m. It is an excellent harbor of refuge, sheltered from all winds, and never obstructed by ice. Two tree-covered islets off Western Head, on the S side of the entrance and a tree-covered islet on the N side of the river entrance, are conspicuous.

From the Little River to West Quoddy Head, about 14.5 miles NE, the coast is mostly high, rocky, wooded, and steep-to. The only off-lying dangers are an unmarked 3.7m shoal, about 0.2 mile offshore, about 1.8 miles ENE of Little River Island, and Morton Ledge, with a depth of 1.8m and marked by a buoy, about 0.4 mile offshore and about 2.3 miles SW of West Quoddy Head Light.

The coast is broken by a number of unimportant coves. The largest of these, Moose Cove and Baileys Mistake, appear from seaward to be good open anchorages, but neither has good holding ground nor any value as a harbor of refuge. Both have ledges at their entrances and afford shelter from N winds only.

West Quoddy Head (44°49'N., 66°57'W.), the E point of the United States, is bold, high, and wooded. West Quoddy Head Light is shown from a white and red banded tower on the E edge of the headland. The abandoned Coast Guard lookout tower, 70m high, near the summit of the ridge about 0.5 mile W of the light, is the most conspicuous landmark in the approach to Quoddy Narrows from seaward.

A radio tower, 27.7m high, stands about 40m NW of the light. The fog signal is sounded at the light.

Sail Rocks are two small rocks above-water that lie near the outer end of a ledge extending about 0.3 mile SE of the light. A lighted whistle buoy is moored about 0.4 mile SE of the rocks. During the strength of the tidal current, a strong tide rip extends 0.75 mile SE of Sail Rocks, and they should be given a wide berth.

A submerged power cable is laid across Grand Manan Channel between Campobello Island and Grand Manan. "No Anchorage" signs are situated at each shore end of the cable.

Passamaquoddy Bay Approaches

1.16 Passamaquoddy Bay indents the shore between Maine and New Brunswick, and has a maximum length of about 10 miles in a NNE-SSW direction. The bay is never closed by ice and affords excellent shelter for all classes of vessels. The boundary between the United States and Canada extends through Quoddy Roads, Lubec Channel, and Friar Roads, and then passes between Deer Island and Moose Island, and continues parallel with the Maine shore up the St. Croix River. The line is marked by numerous ranges consisting of small pyramidal concrete beacons that should not be mistaken for navigational aids.

Across the entrance to the bay is a group of islands, of which the largest are Campobello Island and Deer Island. The principal channel of entrance, Head Harbour Passage, is between these two islands. Lubec Channel, between Campobello Island and the mainland to SW, is narrow and limited in depth, but is frequently used by small vessels, especially at HW. Letite Passage, the N entrance to the bay, is narrow and dangerous, and only available with local knowledge.

Tides—Currents.—The main flood current from Grand Manan Channel sets NE directly for **Point Lepreau** (45°03'N., 66°28'W.); the ebb sets in the opposite direction. The W branch of the flood current passes along the E side of Campobello Island, and divides near East Quoddy Head, one part setting E, while the other sets through the various entrances into Passamaquoddy Bay. With both the flood current and the ebb current, an inflow is often experienced into the indentation between Grand Manan Island and Point Lepreau.

Pilotage.—Pilotage is required for all foreign vessels and all U.S. vessels registered in foreign trade with a draft over 2.7m bound for Eastport, Cobscook Bay, Lubec, and Friar Roads when entering through Head Harbour Passage. Pilotage should be requested 24 hours prior to ETA; the pilot boards off East Quoddy Head from a black hulled fishing boat.

Pilots for Bayside, New Brunswick board about 1 mile E off the NE tip of Camponello Island. The web site is:

Bayside Port
http://www.portofbayside.com

For U.S. pilots refer to the United States Coast Pilot 1 Atlantic Coast: Eastport to Cape Cod.

Fundy Traffic can be contacted on VHF channels 14, 16, and 65A.

Caution.—Submarine cables lie across the Quoddy River and Head Harbor Passage.

1.17 The Wolves (44°58'N., 66°44'W.), a group of wooded steep-to islands, 15.2 to 33.5m high, lie in the N approach to Passamaquoddy Bay. The Saint John Harbor pilot boarding area lies 30 miles ENE of The Wolves. **South Wolf Island** (Southern Wolf Island) (44°56'N., 66°44'W.), the S island of the group, lies about 8.5 miles NNE of Grand Manan Island. East Wolf Island (Eastern Wolf Island), the NE and largest of the group, lies about 1.5 miles NNE of South Wolf Island. Three smaller islands lie between the above two islands. The passages between these islands are suitable for boats only. Wolf Rock, above-water, lies about 0.2 mile N of the N end of East Wolf Island. A small rock, above-water, lies about 0.1 mile E of Wolf Rock, from which it is separated by deep water.

South Wolf Island Light is shown from a white round tower, 9m high, on the S end of the island.

Anchorage.—In thick weather, or while waiting for favorable tides, anchorage can be taken, in 36.6 to 45.7m, good holding ground, about midway between the group and the mainland N.

Quoddy Narrows and Lubec Channel

1.18 Quoddy Narrows (Quoddy Roads) (44°50'N., 66°57'W.), between West Quoddy Head and the S end of Campobello Island, is used as an anchorage by vessels seeking shelter or waiting for a favorable tide to pass through Lubec Narrows. The entrance between The Boring Stone and West Quoddy Head is about 0.8 mile wide, with a depth of 8.5m near

South Wolf Island Light

the middle.

The Boring Stone, 1.5m high, lies about 0.3 mile SW of **Liberty Point** (44°50'N., 66°56'W.), and should be given a safe berth. Middle Ground, with a depth of 1.2m, lies in the middle of Quoddy Narrows. The N and W parts of Quoddy Narrows between West Quoddy Head and Lubec are full of shoals which partly uncover.

The anchorage affords shelter from N and W winds, in depths of 3.6 to 7.6m, but is open to winds from the E and S, and protection from NE gales is reported poor.

A local magnetic anomaly exists SE of Liberty Point, 0.75 to 1 mile. Abnormal compass variation has also been reported about 2 miles E of Herring Point.

Lubec Channel and Lubec Narrows, between Quoddy Narrows and Friar Roads, have been improved by dredging. The controlling depth in the channel was 1.1m. Strong tidal currents and eddies are experienced in the Narrows. The channel is buoyed, but it is inadvisable to use this passage without local knowledge.

Tides—Currents.—The mean range of the tide at Lubec is 5.3m, but tidal ranges over 6.1m are not uncommon.

In the channel, the flood current sets N and the ebb sets S, with a maximum velocity of 4 knots. In the Narrows, the velocity increases to 6 knots with the flood current of spring tides, and 8 knots with the ebb current of spring tides.

In Quoddy Narrows and Lubec Narrows, the flood current commences to run about 1 hours 30 minutes before LW by the shore, and the ebb current about 1 hour before HW.

1.19 **Lubec** (44°52'N., 66°59'W.), on the W side of Lubec Narrows, there are two fish canning factory wharves. One is an L-shaped fish pier (0.2 mile N of the bridge), extending 76m into the narrows with alongside depths of 0.6m on the outer face; fuel can be delivered by road tanker. The other is an L-shaped concrete fish pier extending 52m from the N side of the town, the outer face being 19m long; reported depths alongside are 1.8 to 4.3m. Both the canning factories have piers which dry.

Lubec is distinguished by a tall church spire on a hill and an elevated tank on the N shore of the town. The Franklin D. Roosevelt Memorial Highway Bridge, a fixed highway bridge with a vertical clearance of 14.3m, crosses Lubec Narrows at Lubec and connects to the town of Campobello Island on the Canadian side. The mean range of tide at Lubec is 5.2m. The navigable span of the bridge is marked by a green light in the center and by red lights at the E and W sides. These lights are visible from N and S of the bridge. United States Immigration and Customs Enforcement officials are stationed on the W end of the bridge.

Popes Folly, a thinly-wooded islet, is 17m high and lies off the N entrance to Lubec Narrows. It is connected to the shore SE by a bar with a depth of 3.7m. The bar is crossed by vessels bound S to Lubec or through Lubec Narrows.

Dudley Island, about 0.7 mile farther NW, is connected to Treat Island by an earth dam.

Campobello Island

1.20 Campobello Island is the S and largest of the islands in the entrance to Passamaquoddy Bay. The E coast of the island, from Liberty Point to **East Quoddy Head** (44°57'N., 66°54'W.), its N extremity, about 8 miles NNE, is steep-to off its salient points.

Herring Bay (Herring Cove) (44°52'N., 66°56'W.) affords good temporary anchorage, in depths of 11 to 14.6m, about 0.5 mile offshore.

Schooner Cove, about 2 miles farther NNE, affords temporary anchorage to small vessels, in a depth of about 11m.

Mill Cove, entered N of **Scott Head** (44°56'N., 66°54'W.), affords temporary anchorage to small vessels, in 7.3 to 11m. A 0.8m patch, marked by a buoy, lies in the entrance, about 0.3 mile NNW of Scott Head.

East Quoddy Head, the N extremity of Campobello Island, is extended about 0.3 mile NE by a reef on which there are several islets. **Head Harbour Light** (44°57'N., 66°54'W.) is shown from a 15m high white octagonal tower on the outer islet.

Head Harbour, protected from the E by Head Harbour Island, 24.4m high, with its N end about 0.3 mile SE of East Quoddy Head, is a secure anchorage for small vessels. A narrow creek extends about 0.8 mile SW from the head of the har-

Lubec—The Franklin D. Roosevelt Memorial Highway Bridge

Head Harbour Light

bor.

The harbor is entered passing either N or S of Head Harbour Island. The N channel, partially marked by buoys, is the preferred entrance, the S channel being obstructed by shoals and fish weirs. A light is shown from the NW side of the entrance to the creek.

An L-shaped public pier, 97m long and 12m wide at its outer end, with a depth of 5.2m alongside, is situated on the N side of the harbor. It is frequently used by fishing vessels. Numerous mooring buoys are laid S and E of the pier.

Caution.—Strong E to NE winds against the ebb current will create a breaking sea off East Quoddy Head.

Head Harbour Passage

1.21 Head Harbour Passage, the main channel to Passamaquoddy Bay, is entered from seaward between East Quoddy Head and Spruce Island, about 0.8 miles NNW of Head Harbour Light. The passage runs between the NW side of Campobello Island and a chain of islands located about midway between Campobello Island and Deer Island. The passage leads to Western Passage, the main entrance to Passamaquoddy Bay, through the N end of Friar Roads.

Tides—Currents.—As the flood current rounds East Quoddy Head, it will set strongly to the W onto Spruce Island and Black Rock, following the general direction of the passage S. Rates of up to 5 knots have been obtained, but the W flow weakens considerably during the last hour of the flood.

White Horse Island (45°00'N., 66°52'W.), about 2.3 miles NE of East Quoddy Head, is 20.7m high, bare, rocky, of whitish appearance, and easily identified. Little White Horse Ledges consists of a rock, with a depth of 0.3m, about 0.1 mile NE of White Horse Island, and a second rock, with a depth of less than 1.8m, about 0.1 mile NW of the first rock.

North Rock, with a depth of 0.3m, and steep-to except on its N side, lies about 0.5 mile NW of White Horse Island, and is marked SE by a buoy.

Spruce Island, about 0.8 mile N of East Quoddy Head, lies on the NW side of the passage, and is steep-to on its SE side. White Island lies about 0.5 mile N of Spruce Island.

Sandy Island, about 0.3 mile W of Spruce Island, has ledges extending about 0.4 mile SSW, with the outer end of the ledges marked by a radar reflector.

Tinker Island (Tinkers Island), steep-to on its W side, lies about 0.5 mile W of Sandy Island. Two ledges, which dry, lie 0.25 mile NE, and the same distance SW of the island. Both ledges are marked by radar reflectors.

Dinner Island lies about 1 mile NW of Tinker Island. The entrance to Northwest Harbor lies about 0.2 mile W of Dinner Island. This harbor is a narrow inlet, with depths of 11 to 12.8m, and is suitable only for small vessels.

Black Rock, which covers at HWS, lies about 0.5 mile SW of Spruce Island and is marked by a radar reflector.

Casco Bay Island, 26m high, lies about 0.5 mile SW of Black Rock and is steep to on its SE side. Ledges extend 275m off its N end, and shoals and ledges lie within 0.35 mile SW of the island.

Green Island, on the NW side of the passage, lies nearly 0.5

mile SW of Casco Bay Island. A shoal, with a charted depth of 7.3m and marked close E by a buoy, lies in mid-channel, about 0.3 mile E of Green Island. Sandy Ledge, about 0.3 mile W of Green Island, is marked by a radar reflector.

Popes Island, 17m high, lies about 0.5 mile SW of Green Island. Popes Shoal, with a least charted depth of 2.7m, lies about 0.2 mile SE of Popes Island, and a 7.3m spot lies about 0.2 mile E of Popes Shoal. Chocolate Shoal, with a least charted depth of 2.4m, lies nearly 0.5 mile W of Popes Island.

1.22 Windmill Point (44°56'N., 66°57'W.), about 2.5 miles SW of East Quoddy Head, is the N entrance point of Harbour de Lute. A 5m rocky shoal lies nearly 275m W of the point. At the village of Wilsons Beach, about 0.3 mile NE of Windmill Point, there is a U-shaped breakwater-wharf that extends 75m to an outer part that is 57m long. The harbor is shoal; however, there is a depth of 2.1m along the outer 24m of the inner side.

The remains of an obstruction are reported to lie about 60m off the W part of the outer part of the mole.

A submerged power cable is laid between Wilsons Beach and Chocolate Cove on Deer Island. "No Anchorage" signs are situated at the shore ends of the cable.

Harbour de Lute is entered between Windmill Point and Bald Head, 31m high, about 1 mile SSW. Man of War Head, the inner entrance point, lies about 0.8 mile NE of Bald Head. Stovers Ledge, with a least depth of 6.1m, lies about 0.5 mile NE of Bald Head. Racer Rock, with a depth of 2.7m, lies about 0.3 mile ENE of Man of War Head.

Anchorage, with good shelter, can be taken in Harbour de Lute, in a depth of about 22m, N of Man of War Head.

Indian Island, 33m high near its N end, lies about 0.3 mile E of Deer Island, from which it is separated by a deep channel. A shallow bank extends about 0.8 mile off the SE part of Indian Island. Cherry Islet, 15.8m high, lies at the SE end of this bank. A light, 8m high, is shown from the S end of the island. Thrumcap (Thumb Cap), 25.3m high, lies about 0.3 mile N of Cherry Islet.

Friar Roads (Eastport Harbor), between Campobello Island and **Moose Island** (44°55'N., 67°00'W.), is sheltered and free from ice, but the water is deep, the bottom uneven, and the tidal currents strong. It is seldom used as an anchorage.

1.23 Eastport (44°54'N., 66°59'W.) (World Port Index No. 6600) lies on the hilly E side of Moose Island. It is the easternmost deep-water port of the United States and is a port of entry. The principal industry is fishing, with its attendant canning, smoking of herring, and manufacturing of by-products.

For berthing and pilotage refer to United States Coast Pilot 1 Atlantic Coast: Eastport to Cape Cod.

Friar Bay (Friars Bay) (44°53'N., 66°52'W.) lies on the SE side of Friar Roads. Friar Head (Friars Head), 55m high and wooded, is the S entrance point of the bay. There is good anchorage in the bay, in about 22m, with the surrounding shore 0.5 mile distant. Small vessels can lie alongside the L-shaped government wharf at the village of Welshpool in the N end of the bay. The wharf has a face 65m long, with a depth of 4.3m alongside.

Western Passage

1.24 Western Passage, between Moose Island and Deer Island, connects Friar Roads with Passamaquoddy Bay. The passage is entered between Deer Point, the S extremity of Deer Island, and **Dog Island** (44°55'N., 66°59'W.), 6.1m high, about 0.5 mile SSW. Lights are shown from Deer Point and Dog Island.

Tides—Currents.—Off Deer Point, abreast Dog Island, the current forms whirlpools and eddies which may be dangerous. The flood and ebb current usually run at about 3 knots, but may attain a rate of 6 to 7 knots. It is reported to be the most active about 3 hours after LW. The least disturbance is usually about 275m N of Dog Island, where there is a comparatively narrow direct current which can be readily followed between the whirlpools and eddies on either side. A fish pen is established close S of Kendall Head.

Above Deer Point the flood sets N with decreasing velocity and follows the general direction of the channel with strong countercurrents and eddies close to the shore. The ebb sets S with reduced velocity and disturbance off Deer Point; the inshore reverse currents are less marked than the flood. The flood and ebb currents usually run about 3 knots, but a rate of 5 knots has been observed.

Clark Ledge, which dries 5.8m and is marked by a daybeacon, lies about 0.1 mile offshore, about 0.3 mile SE of Dog Island.

The coast between Dog Island and Kendall Head, about 1.5 miles NW, recedes forming a bight. Kendall Hill, 56m high, lies close W of Kendall Head. Good anchorage for deep-draft vessels is available in Johnson Cove in the NW part of the bight.

Pleasant Island, about 2 miles NW of Kendall Head, lies about 275m offshore, near the outer end of a drying spit.

Frost Island lies about 0.7 mile NW of Pleasant Island. Frost Ledge, which dries in places and is marked by a bell buoy, lies about 0.3 mile NE of the island, to which it is joined by a shoal spit.

Clam Cove Head (44°58'N., 67°01'W.), on the NE side of the passage, lies about 1 mile E of Pleasant Island. At Fairhaven, there is a public pier with depths of 1.8 to 2.4m alongside the outer face, which is 26m long, A slip is situated on the SE side of the pier and a light is exhibited from the pier head. A large fish canning factory stands at the root of the pier.

Clam Cove, close E of the headland, provides good, but limited anchorage, in a depth of 16.5m, about 0.2 mile E of the S point of the headland. A beacon marks some rocks that lie about 95m S of the headland.

Deer Island—Northeast Part

1.25 Bean Island (45°00'N., 66°56'W.), 27m high, lies in the entrance to Lords Cove, where there is a government pier, 100m long, with a depth of 2.1m at the outer end.

Fish Harbor is entered between Bean Island and Fish Island, about 0.4 mile NNE.

Fish Island (45°01'N., 66°56'W.) lies on the S part of a shore bank on which there are many islands, ledges, and rocks which extend more than 1 mile E from the NE side of Deer Island. Parker Island, the NE of these islands, lies about 1 mile E

of the N extremity of Deer Island. Splitting Knife Ledge, which dries 6.4m, lies about 0.1 mile E of Parker Island and is marked by a radar reflector. Adam Island, about 1 mile SSE of Parker Island, has rocky ledges extending about 0.2 mile off its N and E sides.

McMaster Island (45°03'N., 66°56'W.), 107m high, lies with Grass Point, its SE extremity, about 0.4 mile NNE of Parker Island.

Letite Passage

1.26 Letete Passage, the N entrance to Passamaquoddy Bay, lies between Parker Island and McMaster Island, off the N end of Deer Island and the mainland of New Brunswick, N of **Greens Point** (Mascabins Point) (45°02'N., 66°54'W.). The passage is relatively deep, but unmarked dangers and strong tidal currents render its navigation difficult. It should not be attempted without local knowledge. A regular ferry service operates between Deer Island and Letete Harbor.

Caution.—The tidal currents form strong swirls, eddies, and boils. They attain rates of about 5 knots and are strongest both 3 hours before and after HW.

Letit Passage is not recommended for vessels larger than 1,200 gt. Transit of the passage is best made 45 minutes either side of HW. Large alterations of course should be avoided at all times.

Greens Point is marked by a 13.1m high white disused light tower. Morgan Ledge extends about 230m SW of the point, and is marked by a light, shown from a red mast near its SW extremity.

Greens Point Light

Black Ledge, which dries 7m, lies about 0.7 mile WSW of Greens Point and is marked by a radar reflector on its W side. New Lid Ledges, with a depth of 0.9m, lie from 0.1 to 0.2 mile S of Black Ledge, and Black Ledge Rocks, with a least depth of 1.5m, extend about 0.2 mile E of Black Ledge.

Mohawk Island, 25m high to the tops of the trees, lies in mid-channel, about 0.5 mile W of Greens Point. Ledges and rocks extend about 0.2 mile SE, and a 2.1m depth lies about 275m E, respectively, of the island. Mohawk Ledge, which dries 5.8m, extends about 274m NNE of the island.

A rocky shoal, with a least depth of 6.1m, lies between 0.25 and 0.35 mile NNE of Mohawk Island.

The NE side of Letite Passage is indented by many small coves. From Greens Point, the coast trends N for 1 mile to the entrance to Matthews Cove, and then about 1.5 miles NW to McMahon Point, the N entrance point to Passamaquoddy Bay.

Chambers Rock, with a depth of 0.6m, lies about 0.1 mile offshore and 0.35 mile NNW of Greens Point. Matthews Rock, with a depth of 1.8m, lies about 0.3 mile farther NW. Buoys mark the rocks.

Matthews Cove, on the E side of the entrance to Letite Harbor, is entered about 0.8 mile N of Greens Point. At the S entrance point of the cove there is a 70m long ferry wharf. To the S of the ferry wharf there is a combined wharf and breakwater, which extends about 70m from shore to a depth of about 2.4m. A lighted buoy is moored in the approach to Matthew Cove and Letite Harbor.

Dry Ledge, 1.2m high, lies in the center of Letite Passage, about 0.5 mile N of the E extremity of McMaster Island. A 60m tower stands on the ledge. A high-power overhead transmission cable runs from the mainland via Dry Ledge to McMaster Island. The minimum clearance above Letite Passage is 39m.

Little Dry Ledge, which dries 0.9m, lies about 0.1 mile SE of Dry Ledge. Whorls Rock, with a least depth of 2.7m, lies about 275m off the coast of McMaster Island, and about 0.3 mile ESE of Deadmans Head, the N extremity of that island. Thumb Island, 13.7m high and surrounded by drying ledges, lies near the middle of the N entrance to the passage, nearly 0.5 mile ENE of Deadmans Head. Deadmans Ledge extends about 0.1 mile NW of the latter headland. A lighted buoy is moored close NE of the ledge.

Little Letite Passage, narrow and shallow, leads between the S side of McMaster Island and the N sides of Parker Island, Jameson Island, and several other islands N of Deer Island. It is available to small craft with local knowledge, and its W end is crossed by an overhead cable with a clearance of 41m.

Passamaquoddy Bay

1.27 **Calders Head** (44°58'N., 67°01'W.), on the W side of Deer Island, lies about 0.5 mile NNW of Clam Cove Head, previously described in paragraph 1.24. From Calders Head, the coast trends NE for about 0.7 mile to the S entrance point of Northern Harbor, a small drying inlet. Gardner Point, the N entrance point of the harbor, lies about 0.3 mile further NE. Above-water rocks lie about 275m SW of the point. From Gardner Point, the NW coast of Deer Island is clear of dangers outside of about 0.1 mile offshore.

Tides—Currents.—With the exception of the waters near its entrance passages and at the mouth of the St. Croix River, tidal currents in the bay seldom exceed 0.5 knot.

Pendleton Island, 77m high, lies close N of Deer Island and is separated from it by a shallow, narrow passage, obstructed by rocks. The W and N sides of the island are free of dangers.

The E coast of the bay, between **McMahon Point** (Upper Green Point) (45°04'N., 66°55'W.) and Clark Point, about 1 mile N, recedes forming a bight where temporary anchorage can be taken. A bank, with depths of less than 5.5m, extends about 0.3 mile W from the shore, about 1 mile N of Clark Point.

Midjik Bluff (45°07'N., 66°55'W.), 39m high, is a steep rock face that is red; it is the S entrance point of the Magaguadavic River. Small vessels can anchor in the entrance of the river, in a depth of 18.3m, about 0.4 mile SE of Midjik Bluff. The river is navigable by small craft at LW to the town of St. George, about 3.5 miles above the mouth. The channel, which is easily discernable at LW when there is a least depth of 1.2m, is marked by buoys and leads between cliffy banks and high hills on either hand. A government wharf at St. George has a berth on its E side, 52m long and 16.7m wide, with a dredged depth of 3m.

The N shore of the bay, between Midjik Bluff and **McCann Head** (45°07'N., 67°02'W.), about 5.3 miles W, is indented by Digdequash Harbor and Bobabec Cove, both of which form the mouths of small rivers. Long Island, 29m high, and Hog Island, 12m high, lie at the entrance to Digdequash Harbor.

1.28 Bocabec Bay (45°09'N., 67°01'W.) is entered between Creighton Point and McCann Head, 1.75 miles SW. Vessels can anchor in the bay; the bottom is mud with good holding ground. Good anchorage was reported, in 16.5m, about 0.6 mile SW of Creighton Point.

Hardwood Island, 9.1m high, and Hospital Island, close W, to which it is almost connected by drying ledges, lie E of McCann Head. Fish weirs extend 0.2 to 0.3 mile from the W end of Hospital Island, from the N end of Hardwood Island, and between the two islands.

Chamcook Harbor, on the W side of Passamaquoddy Bay, is entered between McCann Head, off of which there is a rock, awash, and the N point of Minister Island, about 0.5 mile SW. The S end of the harbor is closed by a drying spit which connects the island to the shore. The entrance channel, N of Minister Island, has a depth of 5.5m, is about 91m wide, and is marked by buoys. Anchorage can be taken by small vessels, in depths of 12.8 to 14.6m.

Caution.—The waters of Passamaquoddy Bay and adjoining inland waters contain numerous lobster pots. Small painted wooden buoys of various designs and colors, secured by small lines, float on the surface. In some cases a second buoy, usually not painted and difficult to see, is attached to the lobster trap. Fish weirs are also numerous in these waters, and they may not show at or near HW. Vessels are cautioned against fouling fish weirs and lobster pots.

1.29 Indian Point (45°04'N., 67°02'W.), the SE extremity of the St. Andrews Peninsula, lies about 1.8 miles S of the S extremity of Minister Island. Stony ledges extend 0.5 mile SE of the point. Tongue Shoal, which dries 5.2m, lies from 0.25 to 0.75 mile E of the SE extremity of the above stony ledge, to which it is joined by a bar with depths of 3m or less. Tongue Shoal Light is shown from a red mast, 9m high, near the E end of the shoal.

Navy Island (St. Andrews Island) (45°04'N., 67°03'W.), 12.5m high, lies with its SE extremity about 1 mile SSW of St. Andrews Point. The SE end of Navy Island consists of a wedge-shaped white cliff, 11m high, which is conspicuous from the S or E.

Navy Bar, a stony flat which dries up to 4.3m, extends about 0.2 mile SE from Navy Island, and up to 0.4 mile NE from the NE side of the island. The SW side of the island may be approached to within a short distance.

Niger Reef, about 0.3 mile WNW of the NW extremity of Navy Island, dries 2.1m and is marked by a buoy. Drying stone flats almost join the NW extremity of the island to Joes Point, about 1 mile NW.

1.30 Port St. Andrews (45°04'N., 67°03'W.), formed between Navy Island and the town of St. Andrews, is open all year, restricted by drying flats, and should not be entered without local knowledge. Two narrow channels lead across the drying flats and into the harbor.

The main entrance is the E dredged channel, marked by buoys, with a least depth reported of 3m. North Point lies on the N side of the E entrance, nearly 0.5 mile W of Indian Point. A government wharf, 259m long, with a 46m outer face having a depth of 2.4m, lies about 0.4 mile NW of North Point.

The Western Channel, between the flats extending SE from Joes Point and the NW from Navy Island, has a least reported depth of 2.1m.

The tidal rise at St. Andrews is 7.3m at MHWS, and 6.4m at MHWN.

Lights are exhibited from North Point and from the outer end of the wharf. The Algonquin Hotel, with a red roof and a water tower close W, situated on a hill overlooking the town, are conspicuous.

Anchorage.—There is anchorage, in 18.3m, clay, about 0.4 mile S of Joes Point.

The St. Croix River

1.31 The St. Croix River, from its entrance between **Joes Point** (45°05'N., 67°05'W.) and Liberty Point, extends about 6 miles NNW to Devils Head, 103.6m high. At Devils Head the river turns WNW, decreasing in width, and continues about 6 miles to the head of navigation. Navigation of the river during the winter is usually not hindered by ice, but during severe weather, the river has been reported to be blocked by ice for 1 or 2 weeks in February.

Tides—Currents.—Between the mouth of the St. Croix River and Devils Head, the tidal currents have a velocity of about 2 knots. Between Devils Head and St. Stephen, the velocity is from 3 to 4 knots. In the river, the flood tidal current sets N with countercurrents inshore on both sides where conformation of the land is favorable for them. The ebb current sets S with less marked countercurrents.

Pilotage.—Pilotage is not compulsory. For further information, see paragraph 1.16.

Two shoals, with depths of 4.2m and 3.9m, lie about 0.3 mile NW and 0.4 mile WNW, respectively, of Joes Point. A buoy is moored close SW of the W shoal. About 0.4 mile N of Joes Point, there is a government biological station. The L-shaped wharf at the station is connected to land by a 91m long stem. The W face is 49m long, with a least depth of 4.9m. The N face is 30m long, with a depth of 4.3m alongside.

The E side of the river, from Joes Point to Sand Point, about 4.5 miles NNW, is free of off-lying dangers. A T-shaped wharf, extending 91m from the shore, lies about 1.3 miles N of Sand Point. The outer face is 241m long, with depths of 7.5 to 8.5m alongside. A berth on the inner face is 80m long with a depth of 6.5m.

1.32 St. Croix Island (45°08'N., 67°08'W.) lies in mid-river, about 0.6 mile S of Sand Point. The island is surrounded by rocks and shoals; a bank with several drying ledges extends about 0.5 mile S of the island.

Lower Middle Ground, awash, lies about 1 mile SSE of St. Croix Island and is marked E by a buoy.

Todds Point, about 1 mile N of Devils Head, is the W entrance point of Oak Bay, a shallow inlet of no commercial importance.

Caution.—Mariners without local knowledge should not proceed W of Spruce Point, which lies about 1 mile W of Todds Point.

From The Narrows, about 1.8 miles farther upstream, a dredged channel leads to Calais and St. Stephen. The channel is marked by buoys, but is not maintained. The channel from The Narrows to Todd Point, about 1.3 miles NW, has a depth of 2.1m. From Todd Point to Calais and St. Stephen it has a depth of 1.5m and shoals to 0.9m, about 25m E of the International Bridge.

1.33 Bayside (45°09'N., 67°08'W.) There is a marine terminal with 3 sections. Section 1 has a length of 100m and an alongside depth of 8.5m. Section 2 has a length of 80m and an alongside depth of 6.5m. Section 3 has a length of 140m and an alongside depth of 10m.

Pilotage.—Pilotage is compulsory. Pilots should be ordered via local agents. Pilots board in positions: 44°57.6'N., 66°51.8'W.

Contact Information.—For contact information, see the table titled **Bayside—Contact Information**

Bayside—Contact Information	
Port Authority	
Telephone	1-506-529-3503
Facsimile	1-506-529-3504
E-mail	info@portofbayside.com
Web site	http://www.portofbayside.com

At **St. Stephen** (45°11'N., 67°17'W.), there is a wharf at an inactive fertilizer plant, which in recent years has been used by small coastal tankers to unload petroleum products.

At **Calais** (45°11'N., 67°17'W) most of the wharves are in ruins and dry at LW. There is a town wharf, 13m long, with a depth of 1.2m alongside.

Back Bay

1.34 Back Bay (45°02'N., 66°52'W.), on the E side of the approach to Letite Passage, lies between Frye Island and its off-lying islets, and the mainland NW. The bay is entered between White Head, the W extremity of **White Head Island** (Pain Island) (45°01'N., 66°52'W.), and Greens Point, 1.5 miles NW.

Cailiff Rocks, which dry 3.4m, and are marked W by a buoy, lie about 0.5 mile NNW of White Head. A 0.3m rocky shoal lies about 275m WNW of White Head. A rocky patch, with a minimum depth of 2.1m, lies about 0.8 mile NNW of White Head. A buoy is moored close W of this shoal.

Douglas Island, about 1.4 miles NE of White Head, is bordered by a line of fishing stakes, marked at the E and W ends by a beacon (each a pole with a radar reflector, 0.6m in height), and extending about 0.2 mile SW of the island. Numerous fish weirs and cages are situated on this shoal. A shoal area, with a least depth of 3.7m, lies about 0.4 mile SW of the island. Drying ledges extend about 0.3 mile off the N shore, about 0.7 mile E of Greens Point.

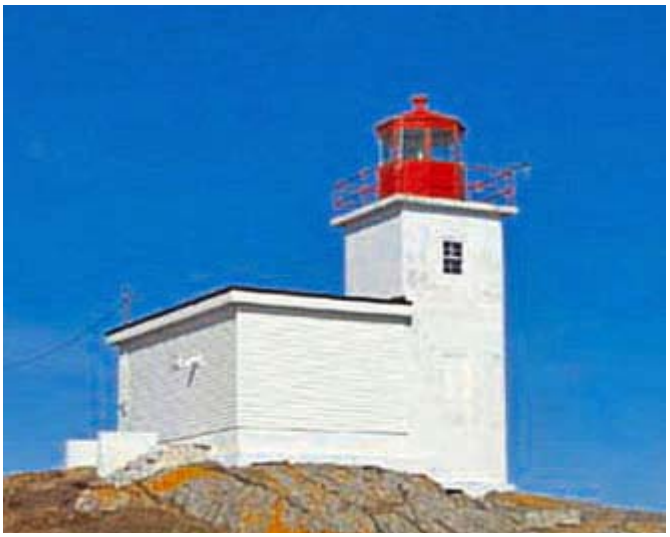
In Back Bay, there is a public wharf about 98m long, with an L-shaped extension about 111m in length. There are depths of 2.7 to 3.7m alongside the outer faces of the wharf. The wharf is protected by a breakwater extending from the shore to Halftide Rock. Back Bay Light is shown from the outer end of the breakwater from a green skeleton tower.

Anchorage.—There is anchorage for small vessels, in 11 to 12.8m, about 0.3 mile S of the breakwater head. Larger vessels may anchor in the outer part of the bay, remaining clear of the submerged power cable laid from Bliss Island Light to the mainland. Mariners are cautioned not to anchor in the vicinity of this cable or an abandoned cable nearby.

1.35 Letang Harbor (45°04'N., 66°49'W.), sheltered, deep, and open throughout the winter, lies on the NE side of the approach to Letete Passage. The SE approach to the harbor lies between **Deadman Head** (45°02'N., 66°47'W.) and the E end of Bliss Island, about 1.8 miles W. The SW approach to the harbor is through Bliss Harbor, NW of Bliss Island.

Deadman Harbor, entered between Deadman Head and Pea Point, about 1 mile W, is a deep indentation, open SW. Halftide Rock lies about 0.1 mile WSW of Deadman Head.

Pea Point (45°02'N., 66°49'W.) is the W end of Pea Island, which lies close off the peninsula, in the E side of Letang Harbor entrance. Drying ledges extend 95m SW of the island, and Pea Rock, which dries, lies about 230m ESE of the island. Pea Point Light is shown from a white square tower on the corner of a white square building, 8m high, on the point.

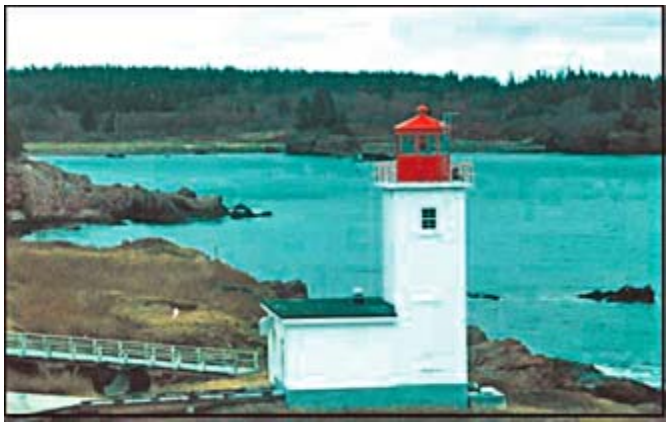


Pea Point Light

Roaring Bull, a rock which dries 7m and is marked by a light, lies about 275m WNW of Pea Point, on the E side of the entrance channel to Letang Harbor.

Green Islet, 6.1m high, on the W side of the entrance, lies about 0.8 mile SW of Pea Point, near the outer end of a ledge extending from the E side of Bliss Island. A shoal, with a depth of 8.2m and marked by a buoy, lies ESE of the islet. It should not be passed within 0.1 mile on its E side.

Colt Rock, which dries 3.7m, lies on the W side of the entrance, about 0.5 mile WSW of Pea Point. Mare Rock, which dries 4.3m, lies about 0.1 mile N of Colt Rock. Mink Island, 6.1m high, lies about 275m WNW of Mare Rock, to which it is joined by a bank.



Bliss Island Light

1.36 Letang Head (45°03'N., 66°49'W.), on the E side of the entrance and about 0.8 mile NW of Pea Point, is the W extremity of a peninsula, 60m high, separating Blacks Harbor from Letang Harbor.

Blacks Harbor, S of the peninsula, provides temporary anchorage for small vessels W of a 1.8m rock, located about 0.5 mile within the harbor. An L-shaped ferry wharf, 122m long, with a depth of 4.6m alongside, lies close within the entrance and on the S side of the harbor.

A patent slip and marine railway with repair facilities is situated on the NW side of the harbor. The length of the cradle is 24m; it can accommodate vessels of up to 24m in length, 6m breadth, and a maximum draft of 3.4m, with a lifting capacity of 60 tons. There is a refitting berth, which dries, adjacent to the slip.

McCann Island, 29m high, lies about 0.2 mile SW of Letang Head, on the W side of the entrance to Letang Harbor. Drying ledges extend from about 0.1 to 0.2 mile N of the island.

Kings Point, the S extremity of the Letang Peninsula, lies about 0.7 mile N of Letang Head.

Letang Harbor lies SW and E of the Letang Peninsula and provides good anchorage anywhere. A good anchorage for small vessels is in 14.6m, mid-channel, about 0.5 mile ENE of Kings Point.

Bliss Harbor

1.37 Bliss Harbor (45°02'N., 66°51'W.) is entered between **White Head Island** (45°01'N., 66°52'W.) and the SW end of Bliss Island. White Head Island, 33m high, wooded with steep cliffs, is steep-to on its S side. Bliss Island Light marks the SW extremity of Bliss Island. A lighted bell buoy is moored about 275m SW of the light. Shoals in the area, including one about 0.5 mile W of Bliss Island Light, with a least depth of 6.4m, can best be seen on the appropriate chart.

Drews Head Light (Lighthouse Point)

Man of War Island, about 0.7 mile NE of White Head Island, lies in the SW entrance to the harbor. Man of War Rock, which dries about 3.7m, and from which drying ledges extend about 275m S, lies about 0.1 mile SE of Man of War Island. A buoy marks the S end of these ledges and a buoy marks the E side of Man of War Rock. Boat Rock, above-water, lies about 0.1 mile N of Man of War Island, to which it is almost joined by rocky ledges.

Flea Island, about 0.8 mile NE of Man of War Island, is the S of three islands, which with McCann Island, about 0.3 mile W, separates Bliss Harbor from Letang Harbor.

Anchorage.—Vessels can anchor, in about 11.9m, out of the strong tidal currents, about 0.3 mile WSW of Flea Island. Smaller vessels can anchor, in 14.6m, in the entrance to Fisherman Cove, a bight formed in Bliss Island, about 0.5 mile SE of Man of War Island.

Vessels proceeding to Letang Harbor steer to pass S of Flea Island, remaining clear of a 5.5m patch, about 137m S of that island, then steer to pass about 0.1 mile SE of McCann Island.

Letang Harbor to Point Lepreau

1.38 Deadman Head (45°02'N., 66°47'W.), about 1 mile E of Peg Point, is the W extremity of a narrow peninsula. The W entrance point of **Beaver Harbor** (45°04'N., 66°44'W.) lies about 2.3 miles E of Deadman Head. The intervening shore is steep-to except about midway, where a shoal on which there is an islet and a reef extends about 275m offshore.

Drews Head (Lighthouse Point), nearly 0.5 mile NE of the W entrance point, is marked by a light shown from a white circular tower. A lighted bell buoy is moored about 0.7 mile SSE

of Drews Head Light.

A rock, with a depth of 2.9m, lies 0.35 mile NE of the light. Another rock, with a depth of 4m, lies about 0.1 mile NE of the same light.

The village of Beaver Harbor is situated on the W shore of the harbor, about 0.5 mile NNW of Drew Head. There are two public wharves in the village. The S wharf and larger being 133m long with a depth of 2.7m at the outer end; the outer 70m of the NW side is dredged to a depth of 5.5m, but there are lesser depths in the approach to the berth. Close W of the S wharf, the other public wharf has an outer section 61m long with a depth of 1.8m at the outer end. A breakwater, about 100m in length, is located S of the main pier.

To the NW, the outer face of the fish plant wharf is 40m long, with a least depth of 1.8m alongside. A submarine pipeline extends about 150m NE.

Anchorage.—Small vessels with local knowledge will find secure anchorage, in 4.6m, off the village, about 0.5 mile N of Drews Head. Additional anchorage, in 40m, is located about 3.2 mile SE of Deadmans Head.

1.39 Seely Cove (Seeleys Cove) lies close N of Sealy Head, about 3.5 miles ENE of Beaver Harbor. A lighted bell buoy is moored about 0.5 mile S of Sealy Head. Good anchorage for mariners with local knowledge lies close N of Sealy Head, in depths of 9.1m, sheltered from SW winds. Rocks, which dry, extend about 0.2 mile S from the N entrance point of the cove.

Red Head (45°06'N., 66°35'W.), about 3 miles farther ENE, is a wooded headland with steep cliffs, 68m high.

Maces Bay lies between Red Head and Point Lepreau, about 5.8 miles ESE. There is anchorage for mariners with local knowledge in the W part of Maces Bay.

Pocologan Islet lies about 0.6 mile NE of Red Head. Mink Ledge, about 0.3 mile ENE, has a small portion of its SE end always above water. A 6.4m patch lies about 275m E of the SE end of the ledge.

Barnaby Head (45°07'N., 66°32'W.) is the W entrance point of Lepreau Harbor, the NE extension of Maces Bay. Mink Island, 32m high, lies about 0.5 mile W of Barnaby Head. A lighted bell buoy is moored about 0.4 mile S of Barnaby Head.

Lepreau Harbor, entered between Barnaby Head and Ragged Head, about 1 mile ENE, provides anchorage for small vessels with local knowledge, in a depth of 5.5m. Close inside Ragged Head, there is a government wharf 99m long and 12m wide at the outer end, with a depth of 1.5m alongside. A slip is situated on the E side of the pier. A breakwater, about 150m in length, lies close W if the pier.

1.40 Point Lepreau (45°04'N., 66°28'W.), the E entrance point of Maces Bay, is marked by a light, shown from a red and white horizontally-banded octagonal tower. The E shore of Maces Bay, N of the point, consists of steep cliffs.

The 44m high concrete dome of a nuclear power plant is situated on Point Lepreau. A microwave tower stands at an elevation of 60m, about 2.5 miles N of the point.

Lepreau Ledges (Maces Bay Ledges), upon which there are several islets, extend about 1.8 miles SSW from a position 3 miles N of Point Lepreau. A lighted bell buoy is moored about 0.2 mile SW of the ledges, and about 2 miles NW of Point Lepreau.

Point Lepreau Light

The Brothers (Salkeld Islands) are two islets NW of Lepreau Ledges. The larger islet is 23.8m high. A shingle bar, which dries, extends nearly to the shore, about 1.3 miles ENE.

The E side of Barnaby Head, bearing 354° and open W of The Brothers, leads W of Lepreau Ledges.

Little Lepreau Basin, a narrow inlet, almost dry at LW, lies about 4 miles N of Point Lepreau. A breakwater-wharf, about 0.7 mile S of the entrance to the basin, has a depth of 2.7m at the outer end.

Point Lepreau to Saint John Harbor

1.41 Dipper Harbor West (45°06'N., 66°25'W.) is entered between Fishing Point, a bold point about 2.8 miles NE of Point Lepreau, and Campbells Point, the S point of a peninsula, 23m high, about 0.4 mile NNE. A lighted bell buoy is moored about 0.5 mile ESE of Fishing Point. Dipper Ledges, which dry 6.1m, lie about 0.2 mile ENE of Campbells Point.

At the village of Dipper Harbor West, on the S side of the harbor, there is a breakwater-wharf, 88m long, with depths of 1.5 to 3.4m alongside the outer 60m.

Little Dipper Harbor, about 2 miles ENE of Campbells Point, is suitable only for small craft; the entrance is obstructed by ledges and rocks. Foul ground, on which there is a rock, 2.4m high, extends almost 0.5 mile ESE of the SE entrance point.

Chance Harbor, open SE, is entered between **Reef Point** (Lighthouse Point) (45°07'N., 66°21'W.) and Cranberry Head, about 0.8 mile ENE. Chance Harbor Light is shown from a circular tower, with red and white bands, on Reef Point. A lighted bell buoy is moored about 0.8 mile ESE of Reef Point.

Mann Rock (Dry Ledge), 5m high, lies about 0.5 mile SW of Reef Point, and is almost joined to the mainland by rocks and ledges, some of which dry. Rocks, above-water and awash, extend about 0.1 mile E of the same point and are marked by a buoy.

Mawhinney Rock, which dries 1.7m and exhibits a radar re-

flector, lies about 0.4 mile N of Reef Rock. Half Tide Rock, on the E side of the harbor, lies about 0.3 mile ENE of Mawhinney Rock.

A breakwater-wharf, 132m long, with a depth of 2.4m at the outer end, which is 12m wide, lies about 0.3 mile NW of Reef Point.

Anchorage.—There is anchorage for small vessels, in about 5.5m, in the inner part of Chance Harbor.

Haleys Cove and Little Musquash Cove, about 0.5 mile and 1.8 miles ENE of Cranberry Head, respectively, provide temporary anchorage, sheltered from N winds, to small vessels. Pork Ledge, a drying flat with a small islet, extends about 275m S of the E entrance point to Haleys Cove.

1.42 Musquash Harbor (45°09'N., 66°15'W.), the estuary of the Musquash River, is entered between Western Head and Musquash Head, about 0.5 mile E. The harbor is open S, and is available only to small vessels. Gooseberry Island, 21.3m high, lies about 0.3 mile SW of Western Head. A rock, awash, and marked by a lighted bell buoy, lies about 138m E of Western Head. Split Rock, 7.6m high, lies close to the shore, about 1 mile E of Musquash Head.

Musquash Light is shown from a white tower with a red horizontal band on Musquash Head.

Musquash Light

Split Rock (45°08'N., 66°13'W.), 8m high, lies close S of a point lying about 0.9 mile E of Musquash Head. Tide rips extend about 0.1 mile S of Split Rock.

Tiner Point (45°09'N., 66°12'W.), on which stands a white rectangular building, lies about 1.3 miles NE of Split Rock. A chimney, 192m high and marked by white strobe lights, is situated close to the shore, about 1 mile NE of Split Rock, in Coleson Cove.

The coast continuing NE to **Negro Head** (45°11'N., 66°09'W.), 41m high, is bold, cliffy, and wooded. A rock, with a depth of 1.8m and marked close NE by a lighted bell buoy, lies about 0.3 mile NE of Negro Head.

A conspicuous gray chimney, 196m high and marked by white obstruction lights, is situated nearly 2.5 miles NW of Negro Head.

Lorneville Harbor (45°12'N., 66°09'W.) is entered between Lorneville Point, located about 0.5 mile N of Negro Head, and Seely Point, the S extremity of a peninsula about 0.8 mile NNE. A breakwater extends 162m N of Lorneville Point. A landing platform, about 43m long, on the W side of the breakwater, has a depth of 4.6m alongside at HW. Most of the harbor dries at LW.

The coast between **Seely Point** (45°12'N., 66°08'W.) and Sheldon Point, about 2.3 miles NE, recedes forming a bight. Two coves, separated by a headland 35m high, lie at the head of the bight. Radio towers, with elevations of up to 116m, are situated about 0.5 mile NW of Sheldon Point.

Manawagonish Island, 30m high, lies with its N end about 1 mile SSW of Sheldon Point. Thumb Cap Island, 11m high, lies about 0.2 mile N of the island. A reef, which dries and on which there is a rock drying 8.5m, extends about 0.2 mile SW of Thumb Cap Island. These islands are joined to the coastal bank, about 0.5 mile W of Sheldon Point, by a bank with a least depth of 3.4m. Temporary anchorage can be taken between Manawagonish Island and the mainland W.

A chimney, 192m high, is situated 1.5 miles ENE of Musquash Light.

Saint John Harbor (45°16'N., 66°03'E.)

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1.43 Saint John Harbor, at the mouth of the Saint John River, is open to shipping all year. It is important as a winter port when the St. Lawrence River is obstructed by ice. Saint John is the most important commercial center in New Brunswick and carries on a considerable trade with all parts of the world. A sugar refinery, oil refinery, pulp and paper mills, and other industries are situated in the Saint John area. The area consists of four sections: Saint John, on the peninsula Courtenay Bay from the Saint John River; East Saint John, E of Courtenay Bay; West Saint John, W of the harbor entrance; and Lancaster, W of West Saint John.

The Saint John River is the largest river flowing through the Province of New Brunswick, and is navigable for small craft as far as Fredericton, the capital of the province. A monobuoy is positioned close W of the bank in the passage between Negro Point and Green Head. It is equipped with a 244m free floating discharge hose marked by two flashing white lights.

Winds—Weather.—During the winter months, the prevailing winds are from the NW. From April through August, winds are usually from the SE, S, and SW. Gales occur in winter and early spring.

Fogs are rather frequent, particularly in the early part of the day, from the middle of June to the end of August. November and December have the least fog.

Ice.—Due to the large tidal range in Saint John Harbor, it is stated that the formation of ice in the harbor is almost impossible and that field ice never drifts into the entrance of the harbor from the Bay of Fundy.

The ice which does form in the Saint John River terminates 3 miles above **Reversing Falls** (45°15.7'N., 66°05.3'W.), at the

head of harbor, and is prevented by them from escaping into the harbor. When the ice does break up in the spring, it is rotten and completely pulverized when coming down over the falls.

Tides—Currents.—Saint John Harbor is noted for extremely high tides, strong tidal currents, and significant currents caused by the outflow from the Saint John River through the harbor and its approach channels, especially during the spring freshet in April and May. At spring tides the range is about 8.8m.

There is a conflict between the strong tidal currents and the river current; when the river is high, the current is stronger and lasts longer against a flood tidal current. The river normally rises 24 hours after a heavy rain, and it is at its highest during the spring freshet. East winds reduce the effect of ebb tidal currents and increase the amount of salt water entering the harbor during the flood current.

During the spring freshet, the great volume of water discharging from the river causes a constant outgoing surface flow to a considerable depth, which at times attains a velocity of 5 knots in the main harbor. When these conditions prevail, vessels entering or departing from Coutenay Bay may be restricted to a maximum draft of 8.5m and daylight movements only.

Even with normal conditions, because of the outflow from the river, the surface flow may be misleading with a rising tide. After half tide, rising, an outward surface flow may still be very evident, while underneath but coming nearer the surface as the tide continues to rise, a strong inward current may exist. From approximately half tide, falling, the whole movement of the water is outward.

The following conditions were observed in the channel opposite **Negro Point** (45°15'N., 66°04'W.), in the month of August with tides of average range:

Saint John Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1014	1012	1013	1014	1014	1013	1014	1015	1018	1017	1015	1015
Temperature (°C)												
Mean	-0.2	-1.3	0.5	3.4	7.0	11.0	15.5	17.6	15.5	11.5	2.1	-5.0
Mean daily max	-2.8	-2.3	2.1	7.9	14.4	19.2	22.1	21.8	17.6	12.1	6.0	-0.2
Mean daily min	-13.2	-13.3	-7.5	-1.5	3.7	8.4	11.6	11.5	7.6	2.9	-1.9	9.9
Extreme high	14.0	11.1	15.8	22.8	30.0	32.0	32.8	34.4	28.9	25.6	21.7	16.1
Extreme low	-31.7	-36.7	-30.0	-16.7	-7.8	-2.2	1.1	-0.6	-6.7	-10.6	-16.7	-34.4
Relative Humidity (per cent)												
Mean	82	80	77	75	72	77	80	82	82	83	85	82
Precipitation (millimeters)												
Mean	128.3	102.6	109.9	109.7	123.1	104.8	103.7	103.0	111.3	122.5	146.2	167.6
Max in 24 hours	83.0	82.3	74.0	125.5	66.5	108.2	79.4	125.2	74.9	85.3	154.4	92.4
Mean amt snow (cm)	71.7	56.5	47.6	23.1	2.2	0	0	0	0	2.4	15.1	64.4
Mean no. of days with precipitiation	17	14	14	13	14	13	12	12	12	12	15	16
Mean no. days snow	14	12	10	4	1	0	0	0	0	1	4	12
Wind Speed (knots)												
Mean	11.4	10.7	11.4	10.1	9.7	9.6	8.3	8.2	8.7	9.9	10.9	10.8
Wind Direction (percentage of observations)												
North	14	11	10	9	7	5	4	5	7	7	9	11
Northnortheast	10	9	11	11	5	7	4	4	5	7	8	9
Northeast	5	4	6	5	3	4	2	3	4	5	5	5
Eastnortheast	3	2	3	3	2	1	1	1	2	2	1	2
East	4	4	4	4	4	4	3	3	3	4	3	2

Saint John Harbor—Weather Charactaristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Eastsoutheast	3	3	4	4	4	4	3	2	3	2	3	2
Wind Direction (percentage of observations) (continued)												
Southeast	1	3	3	4	5	4	4	4	3	4	4	3
Southsoutheast	2	2	2	4	4	4	4	4	3	3	4	3
South	2	4	5	7	12	15	19	16	11	9	7	4
Southsouthwest	3	3	4	9	14	16	17	16	15	9	6	4
Southwest	4	4	5	8	12	12	14	13	10	9	6	4
Westsouthwest	4	5	3	4	4	4	4	4	3	5	3	4
West	8	8	7	4	4	4	5	5	5	8	10	10
Westnorthwest	9	9	8	5	4	3	3	3	5	6	8	8
Northwest	13	5	13	8	6	4	4	5	7	9	11	13
Northnorthwest	12	10	9	6	5	3	3	4	6	6	8	10
Calm	3	4	3	5	5	5	6	8	8	5	4	5
Wind Direction (mean speed in knots)												
North	9.7	9.4	10.7	9.9	9.2	9.6	7.4	7.5	8.6	8.8	9.5	9.1
Northnortheast	9.6	10.4	11.2	10.2	9.2	10.5	7.4	8.9	8.2	10.1	11.0	10.1
Northeast	8.9	7.6	9.4	9.1	7.6	8.2	6.3	6.9	6.5	8.0	8.1	8.2
Eastnortheast	12.1	11.2	11.4	9.0	7.5	7.6	4.9	7.6	7.4	8.1	10.2	9.8
East	13.3	11.2	11.5	10.5	8.9	8.4	6.6	7.2	8.1	9.6	9.5	10.2
Eastsoutheast	13.4	13.3	13.3	10.8	10.0	8.4	7.9	8.2	8.9	11.1	12.0	12.6
Southeast	12.7	10.5	8.5	9.2	9.1	7.6	6.9	6.5	7.3	9.5	11.7	12.0
Southsoutheast	14.2	11.7	9.4	9.6	9.2	8.0	7.5	7.7	7.9	9.0	13.7	14.5
South	14.1	12.9	11.4	9.8	9.2	9.1	8.7	8.2	8.9	10.1	13.5	13.9
Southsouthwest	16.0	14.1	12.5	12.2	11.4	11.3	10.1	10.5	11.6	12.2	15.2	15.5
Wind Direction (mean speed in knots) (continued)												
Southwest	13.8	11.6	11.5	12.0	12.4	11.9	10.6	10.6	10.9	10.9	11.9	12.7
Westsouthwest	11.1	10.6	12.4	10.2	10.9	11.0	9.6	9.2	9.4	10.5	10.2	11.8
West	11.4	10.1	11.8	9.3	8.9	7.9	7.6	8.2	8.2	9.6	9.9	11.3
Westnorthwest	13.1	11.8	13.1	11.8	10.9	10.5	8.7	8.9	9.6	11.2	12.0	12.4
Northwest	12.7	12.1	13.5	12.3	11.7	11.3	9.6	8.9	10.5	11.5	11.8	11.7
Northnorthwest	11.8	11.5	12.6	11.3	11.3	11.1	9.3	9.2	10.3	11.8	11.1	11.0
Temperature and precipitation data courtesy of Environment Canada												

1. On the surface, the ebb rate rose to 2.5 knots, and the flood rate to 1.75 knots; at a depth of 3m, the rates were 1.5 knots and 1 knot, respectively.
2. At a depth of 6.1m, the flood tidal current began 3 hours after LW, and the ebb current about 2 hours 30 minutes after HW.

A density current caused by the hydraulic conditions in Saint John Harbor can best be described as a wedge of salt water that advances and recedes beneath the river water under the influence of the tide. There is a clearly-defined layering of water throughout the area, forming an interface between the two bodies of water. With the difference in the relative density of each layer, mixing between them will occur.

As the deeper and denser salt water mixes upward into a fresher layer, it is carried outward and the water thus lost is replaced by more inflowing deep water. This is known as a densi-

Saint John Harbor

ty current, an undercurrent that has been recorded to be as high as 1.8 knots.

At HW the entire movement is inflowing. While at half tide falling, after the change in flow at Reversing Falls, the entire water movement is outward.

Mixing of salt and fresh water occurs in the main harbor and carries on upstream through the Reversing Falls. At the entrance to **Courtenay Bay** (45°15'N., 66°03'W.), a complex circular motion of water exists. There is a minimal flow of fresh water into the bay, and as a result the density current is not as strong as in the main harbor. These conditions vary somewhat during the freshet.

The salinity of the water in the harbor varies with the state of the tide. During the spring freshet, the water in the main harbor is almost all fresh.

Depths—Limitations.—The channel into the main section of Saint John Harbor is 180m wide and dredged to a depth of 8.4m along the range line. Maximum tidal range in the channel is 9.1m. The channel leading into Courtenay Bay lies to the W of the breakwater and has a dredged depth of 5.3m along the range line. Lesser depths occur along the sides of both channels. The channel to Courtney Bay has a minimum width of 152m.

Small vessels and small craft proceeding beyond the head of the harbor and farther up the Saint John River will encounter a road bridge, with a vertical clearance of 23m, close W of Navy Island Terminal and a road and rail bridge at Reversing Falls, with a vertical clearance of 24m.

The largest dry-dock has a length of 427m, a width of 38m, and a depth of 13m over the sill. When needed, this dry-dock can be lengthened.

Due to continuous silting in the harbor, the dredged depths are subject to change.

The main harbor channel has required little dredging in the past; however, silting is a more serious problem in Courtenay

Long Wharf and Long Wharf Range Lights

Bay, where maintenance dredging is usually done annually.

With the exception of the dredged portions, Courtenay Bay is entirely occupied by drying sand and mud flats.

The bridge across the Saint John River, above the main harbor, has a clearance of 23m. Fixed white lights are fitted on the two bridge piers, one on each side of the channel, visible from both directions.

Canaport Oil Terminal (45°12'N., 65°59'W.), a deep-water oil terminal operated by Irving Oil Company, is situated 0.6 mile S of Mispec Point (45°12'N., 65°59'W.). The largest tanker berth, in the E approach to Saint John Harbor can accommodate ULCCs up to 400,000 dwt in a depth of 37m; vessels are moored during daylight hours only in favorable weather conditions. Generally, the berths at the commercial terminals have 12.2m depth.

The terminal also consists of an SBM connected to the tank farm at Mispec Point by submarine pipelines. A restricted area, with a radius of 0.5 mile centered on the SBM, comes into force when tankers approach, discharge, and depart the terminal.

Information on the port facilities available at Saint John is given in the table titled **Saint John—Port Facilities**

Aspect.—Inner approaches to Saint John.—Partridge Island (45°14'N., 66°03'W.), about 2 miles ENE of Sheldon Point, is 24m high and surrounded by reefs and shoals extending to about 275m NE of the island. A light is shown from the highest part of the island and a monument is conspicuous about 0.1 mile SSW of the light.

A jetty has been established approximately 340m off of the SE shore and 550m ESE of Mispec Point.

Negro Point (Negrotown Point) (45°15'N., 66°04'W.), the SE point of West Saint John, lies about 0.5 mile NNW of Partridge Island, to which it is connected by a breakwater.

Between Negro Point and Sheldon Point, about 2 miles SW, a coastal bank, with depths of less than 5.5m, extends about 0.8 mile from the shore. Shag Rocks, one of which is 1.2m high, lie on this bank, about 1 mile W of Partridge Island.

The entrance channel to Saint John Harbor lies E of Partridge Island and is buoyed. Range lights, in line bearing 333.5°, lead into Saint John Harbor.

Courtenay Bay (45°15'N., 66°03'W.) lies between Red Head and the Saint John Peninsula. A breakwater extends about 1 mile SSW from the NE side of the bay, about 1.3 miles NNW of Red Head. The dredged channel into Courtenay Bay lies W of the breakwater and is marked by buoys; a directional light marks the outer portion of the dredged channel. Courtney Bay Range Lights, in line bearing 021°, are shown from the E side of the bay. Each light is shown from a skeleton tower with a fluorescent red daymark having a black vertical stripe.

Three conspicuous chimneys, each 110m high, painted in red and white horizontal bands, are situated about 1.3 miles NE of the head of Courtenay Bay Breakwater. There are two conspicuous red cranes in the dry dock area to the W of these chimneys.

Saint John—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Bay Ferries Terminal						
A	189m	9.1m	—	—	—	Closed.
Diamond Jubilee Cruise Terminal						
Marginal Berth	237m	10.4m	330m	9.1m	41.4m	Cruise vessels, project/heavy lift cargo, and breakbulk.
Long Wharf Terminal						
Marginal Berth	285m	10.7m	289.5m	9.3m	36.0m	Cruise vessels, project/heavy lift cargo, and breakbulk.
Lower Cove Terminal						
Marginal Berth	225m	10.7m	180m	7.4m	30.0m	Project/heavy lift cargo and breakbulk.
Marco Polo Cruise Terminal						
Pugsley A and B	388m	10.4m	347m	9.2m	43.0m	Cruise vessels.
Navy Island Terminal						
1A/B	378m	10.4m	—	—	—	Closed.
2B	190m	10.4m	—	—	—	Closed.
3A/B	312m	10.4m	226.1m	6.0m	23.7m	Ro/Pax, containers, and breakbulk.
Rodney Container Terminal						
Marginal Berth	369m	12.2m	294m	11.8m	32.2m	Containers, project/heavy lift cargo, breakbulk, and reefer.

Saint John—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Slip Berth	291m	12.2m	224.9m	8.7m	32.3m	Ro/Pax, containers, project/heavy lift cargo, and breakbulk.
Saint John Terminal						
Dolphin Berth	150m	13m	200m	11.7m	32.2m	Salt. Berthing length of 290m (including dolphins).
Lower Westside Terminals						
10	200m	12.2m	190m	12.1m	32.2m	Vegetable oils and general cargo.
11	94m	9.1m	—	—	—	Closed.
12	264m	9.1m	116.9m	6.7m	18.0m	General cargo.
Irving Oil - Saint John East Terminal						
Cargo and Work Berth	176m	—	184.3m	—	27.4m	—
Dock 1	97m	10.9m	199.5m	10.6m	32.3m	Berthing length of 213m (including dolphins).
Dock 2	100m	10.9m	213m	10.6m	32.2m	Berthing length of 184m (including dolphins).

In Courtenay Bay, a number of deep water berths are located around the edge of an irregularly-shaped dredged area in the bay; in other palaces, the bay is occupied by drying sands and mud flats. Major installations include a bulk potash terminal, with conspicuous storage sheds, at Barrack Point; a number of tanker berths and oil depots; and a large shipyard with a graving dock.

Pilotage.—Pilotage is compulsory. The pilot boarding station is in position 45°10.8'N, 66°03.7'W, about 3.5 miles S of Partridge Island. Contact pilots via VHF channels 12 and 16s.

Pilots can be obtained from the Atlantic Pilotage Authority. ETA should be given 12 and 4 hours before arrival and 4 hours prior to ETD.

A large fleet of tugs operate within the port. The use of tugs is compulsory for berthing and unberthing at Canaport Oil Terminal. The use of one or more is recommended when berthing and unberthing in other parts of the harbor.

Regulations.—For vessels approaching or departing from Saint John Harbor, there is a traffic separation scheme (TSS) situated about 15 miles SSW of Partridge Island, in use in the approaches to the pilot boarding station. Its use is compulsory for all ships of 20m in length or more, during both day and night, and in all weather conditions. The International Regulations for Preventing Collisions at Sea must be observed at all times while using the Traffic Separation Scheme.

Vessels maneuvering or otherwise underway in Saint John Harbor, and also while at an alongside berth or at anchor, are subject to the Saint John Port Corporation By-Law Operating Regulations. A copy of these regulations may be obtained from the corporation. The harbor limit extends across the entrance to the harbor, 0.5 mile S of Musquash Head.

These Operating Instructions require that no vessel shall move in a harbor at a rate of speed that may endanger life or property.

The port corporation has wide powers over vessels in its harbors, and may order vessels to move, to use tugs, to berth or anchor in locations which it designates. Certain restrictions on berthing and anchoring are set forth, along with the requirements for vessels to inform the port in advance of their intention to berth or anchor in the harbor.

Vessels are regulated with respect to cargo-handling operations, and the equipment and lighting employed in these operations. Instructions for signaling, action in the event of accidents, cargo or gear lost overboard, and safety requirements are included.

There are specific vessel regulations for the carriage and handling of explosives and dangerous goods, as well as rules to be observed in the prevention of fire.

Due to tidal conditions in the harbor, the average ship's gangway is not long enough; a longer one may be rented from the port corporation.

VTS Reporting Points			
Number	Sector	Description	Position
1A	1	SW entrance to TSS	44°10.67'N, 66°48.27'W
1B	1	SW exit from TSS	44°16.15'N, 66°53.90'W
2A	1	Inbound	44°19.19'N, 66°34.21'W
2B	1	Outbound	44°23.28'N, 66°39.47'W
3A	1	Inbound	44°30.15'N, 66°15.94'W

VTS Reporting Points			
Number	**Sector**	**Description**	**Position**
3B	1	Outbound	44°32.43'N, 66°20.77'W
4A	1 and 2	Sector Boundary Inbound	44°38.89'N, 66°12.73'W
4B	2	Outbound	44°50.30'N, 66°14.32'W
4C	2	Inbound	44°44.82'N, 66°10.54'W
4D	1 and 2	Sector Boundary Outbound	44°39.63'N, 66°18.19'W
5A	2	N entrance from TSS Inbound	45°01.75'N, 66°04.14'W
5B	2	N entrance from TSS Outbound	45°02.75'N, 66°09.59'W
6	2	Saint John Harbor Lighted Buoy J	Bounded by lines joining the following positions: a. 45°13.51'N, 66°05.75'W b. 45°12.92'N, 66°02.61'W c. 45°12.99'N, 66°00.47'W
7	2	Partridge Island	44°32.43'N, 66°20.77'W
8	2	—	44°38.89'N, 66°12.73'W
9	2	—	44°50.30'N, 66°14.32'W
10	2	—	44°44.82'N, 66°10.54'W
11	2	—	44°39.63'N, 66°18.19'W

Vessel Traffic Service.—A VTS center at Saint John administers a mandatory system for all vessels 20m in registered length or more, a tow of 20m or more, or the overall length of vessel and tow is 45m or more, and air cushioned vessels of loa 8m or more. The VTS provides information on traffic weather and other conditions on request. Vessels of less than 20m in length are encouraged to maintain a listening watch on the appropriate VTS channel when navigating in the Fundy Zone. The VTS Center, Fundy Traffic, can be contacted, as follows:

1. Sector 1—VHF channel 14.
2. Sector 2—VHF channel 12.
3. Sector 3—VHF channel 71.

Signals.—Vessels requesting pilots should show the International Signals required for pilots by day or night. In abnormal weather such as fog, snow, or heavy rain, the vessel requesting a pilot should, in addition to the regular signals, sound four long blasts, at intervals until the pilot vessel is situated. The pilot vessel will, in addition to the regular signals, sound four short blasts at intervals.

Contact Information.—See the table titled **Saint John—Contact Information**.

Saint John—Contact Information	
Harbormaster	
Telephone	506-636-4884
Port Authority	
Telephone	506-636-4869
Facsimile	506-636-4443
E-mail	port@sjport.com
Web site	http://www.sjport.com

Saint John—Contact Information	
Pilots	
Call sign	Pilots Saint John
VHF	VHF channels 12 and 16
Coast Guard	
Call sign	VCS
VHF	VHF channel 12, 14, or 16
Telephone	1-800-528-6444
Halifax Marine Radio	
Call sign	VCS and Fundy Traffic
VHF	VHF channel 12, 14, 16, or 71

Anchorage.—Designated anchorage areas (A, B, and D) are established within the port limits in the approaches to the harbor.

Anchorage A, in the SW approaches, is bounded by lines joining the following positions:

a. 45°13.3'N, 66°04.9'W.
b. 45°13.3'N, 66°03.3'W.
c. 45°11.4'N, 66°04.6'W.
d. 45°11.9'N, 66°05.9'W.

Anchorage B, adjoining the S boundary of Anchorage A, is bounded by lines joining the following positions:

a. 45°11.9'N, 66°05.9'W.
b. 45°11.4'N, 66°04.6'W.
c. 45°08.1'N, 66°06.7'W.
d. 45°08.1'N, 66°11.3'W.

Anchorage D, adjoining the S boundary of Anchorage C, is

bounded by lines joining the following positions:

a. 45°10.7'N, 66°02.6'W.
b. 45°10.0'N, 66°00.5'W.
c. 45°10.0'N, 66°00.0'W.
d. 45°08.1'N, 66°00.0'W.
e. 45°08.1'N, 66°04.0'W.

Pilotage is compulsory in Anchorage A and in the N parts of Anchorage B and Anchorage C. A continuous listening watch on VHF channel 12 should be maintained by vessels at anchor, in compliance with the Coast Guard Traffic Center. Vessels should be ready to proceed or maneuver on short notice.

Herring purse seining operations are conducted in Anchorage A from November 1 to April 1. Vessels should exercise caution and avoid fouling nets.

Caution.—A line consisting of foam and small bits of debris stretches across the approaches to Saint John Harbor. Its location changes with the state of the tide, but it should be the most visible at half flood tide before SW at Reversing Falls.

On the outside of this line, the seawater is slightly tainted in color with the yellowish g0reen tinge of fine sandy particles held in suspension. The fresher surface water on the inside is deep brown in color.

Dredged channels are subject to constant silting; mariners are advised to contact the port authorities for the latest information.

There is a whale sanctuary that is active from July to November, for right whales, an endangered species, that exists in Grand Manan Basin within the following positions.

a. 44°45'N, 66°35'W.
b. 44°45'N, 66°18'W.
c. 44°30'N, 66°18'W.
d. 44°30'N, 66°35'W.

Herring purse seine fishing is carried out in Area A between November 1st and April 1st each year. Mariners must use caution as necessary to avoid fouling nets.

The Saint John River

1.44 Reversing Falls (45°16'N., 66°05'W.), at the head of Saint John Harbor, lead to the upper reaches of the Saint John River. This remarkable phenomenon is caused primarily by a ridge of rock, with a least depth of 4m at LW, extending across the river. The ridge rises abruptly from the river bed, with deep water on either side, and has a damming effect on the inward and outward flow of the tidal water.

At LW, the surface of the river above the falls is 3.4 to 4.6m above the level of the harbor, and at HW it is 1.8 to 3m below the harbor level. The falls reverse with the tide, but the effect is more marked during the outward flow.

The falls are navigable by small vessels for about 0.5 hour before and after SW, which lasts about 10 minutes. Small boats should pass during the period of SW. During great freshets, due to the melting of the snow, which usually occurs between the beginning of April and the middle of May, the falls are impassable as the harbor level never reaches that of the river. Meteorological conditions can alter the time of LW or HW from that predicted by an appreciable amount.

There is no requirement to contact the port corporation when berthing to await SW at the Reversing Falls. A temporary berth is available at a pontoon adjacent to the Market Square complex, close N of the Canadian Coast Guard wharf. The pontoon is 30m long, but it is reported that the inner 9m has depths of only 0.6 to 0.9m alongside.

The river above Reversing Falls is navigable as far as **Fredericton** (45°57'N., 66°38'W.), about 70 miles above Reversing Falls. Kennebecasis Bay and the Kennebecasis River join the Saint John River about 3 miles above the Falls. The controlling depths in the river are 4.3m to the head of Kennebecasis Bay, and 2.7m to Fredericton.

Saint John Harbor to Chignecto Bay

1.45 Red Head (45°15'N., 66°01'W.), the E entrance point of Courtenay Bay, has steep cliffs about 19.2m high. Cranberry Point, 1 mile SE of Red Head, is about 3.7m high.

Black Point (45°13'N., 66°00'W.), about 1.5 miles S of Cranberry Point, is bordered by drying reefs extending about 0.1 mile SSW. A shoal patch, mud, used as a dredged spoils dumping ground and marked close SW by a lighted bell buoy, lies about 0.5 mile SW of Black Point. Mariners are advised to use caution as other unreported shoal depths may lie in this area. A light is shown from a red and white tower on Black Point. A lighted whistle buoy, equipped with a racon, is moored about 1.5 miles W of Black Point.

Mispic Point (45°12'N., 65°59'W.), lying about 1 mile SE of Black Point, is a bold projection rising to an elevation of 87m. A tank farm is situated close within the point. A red and white radar tower, 157m high, lies about 1.5 miles N of the point.

Mispec Bay is entered between Mispic Point and Connoly Head, 30.5m high, about 1.5 miles ESE. The bay is open to the S and affords little protection; however, anchorage is available, in depths of 7.3 to 9.1m. Black Rock, 3m high and steep-to, lies about 0.5 mile S of Connoly Head.

1.46 Canaport (45°12'N., 65°59'W.) (World Port Index No. 6545) consists of a SBM, which is moored 0.6 mile S of Mispec Point. Submarine pipelines are laid from the buoy to the shore. An LNG terminal is situated on Mispec Point. It is the first Liquid Natural Gas (LNG) receiving and regassification terminal in Canada.

Canaport—Berthing Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Canaport Deep Water Terminal						
LNG Dock	—	26.0m	345m	15.0m	55.0m	LNG. Berthing length of 420m (including dolphins).

Canaport—Berthing Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Canaport LNG Terminal						
SBM	—	39.6m	339.7m	25.0m	—	Crude.

Information on the port facilities available at Canaport is given in the table titled **Canaport—Berthing Information**.

Canaport LNG Terminal

Pilotage.—Pilotage for vessels proceeding to Canaport is compulsory. The pilot boarding area is near position 45°09'03"N, 66°04'50"W. For vessels departing Canaport LNG Terminal, the pilot will disembark at the same station for Saint John Harbor.

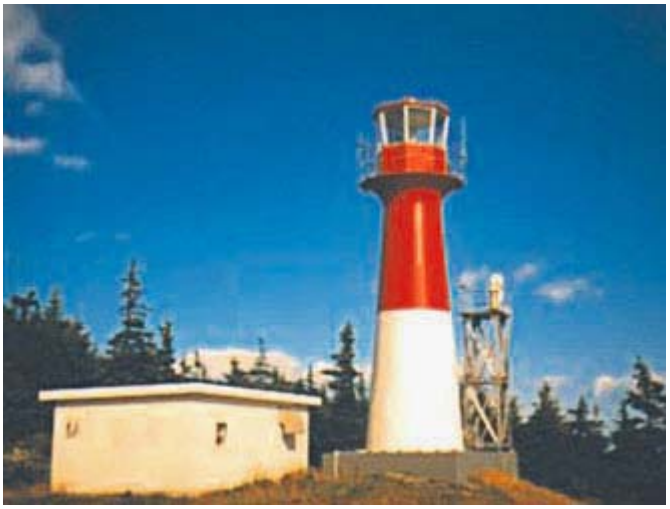
Contact Information.—See the table titled **Canaport—Contact Information**.

Canaport—Contact Information	
Port Authority	
Telephone	1-506-638-1311
Facsimile	1-506-638-1335
Web site	http://www.canaportlng.com

Caution.—There is a restricted area within a radius of 0.5 mile of the Canaport SPM area, restrictions are in force when a vessel is approaching, discharging, and leaving the berth. Under certain weather conditions, vessels may be required to take anchorage outside of the LNG facility.

1.47 Cape Spencer (45°12'N., 65°55'W.), in the E approach to Saint John, about 2.3 miles SE of Connoly Head, is high, bold, and wooded. A light is shown at an elevation of 64m from a red and white circular tower on Cape Spencer.

Caution.—There is a strong tide rip off the cape with a W wind and a W tidal current. Vessels should pass S of the cape in order to avoid this tide rip.



Cape Spencer Light

The coast from Cape Spencer to Cape Enrage, about 54 miles ENE, on the NW side of Chignecto Bay, is bold, thickly wooded, and from 122 to 274m high. It is intersected by numerous valleys, through which small rivers enter the Bay of Fundy. The mouths of the small rivers are very similar in appearance, being composed of bars of shingle and gravel, with a narrow passage on one side through which small vessels may enter at HW and berth on the mud, generally sheltered from all winds; however, local knowledge is required.

During the summer months vessels may anchor, at a reasonable distance offshore, anywhere between Cape Spencer and Cape Enrage.

1.48 McCoy Head (45°15'N., 65°44'W.), a rounded headland, 61m high and covered with trees, lies about 8 miles ENE of Cape Spencer. The coast between the two points recedes forming a bight with the Black River at its head. A government pier, near the E entrance point of the river, is 50m in length, extending to a depth of 7.6m at HW.

The shore between Cape Spencer and the Black River is steep-to, except in the vicinity of a point about 2.5 miles ENE of the former, from which drying rocks extend about 0.1 mile offshore.

The Sisters consist of a small group of rocks 0.6 mile offshore, about 2 miles W of McCoy Head. The outer rocks dry about 3.4m, but the inner rock, about 0.1 mile nearer the coast, from which it is separated by a deep-water channel, only shows at LW. A lighted bell buoy is moored close S of The Sisters.

East Red Head (45°17'N., 65°41'W.), about 2.5 miles ENE of McCoy Head, is composed of red cliffs about 15.2m high. Rogers Head, about 5 miles farther ENE, is 122m high, thickly

wooded, and steep-to, with high perpendicular cliffs on its W side and a steep slope on its S side.

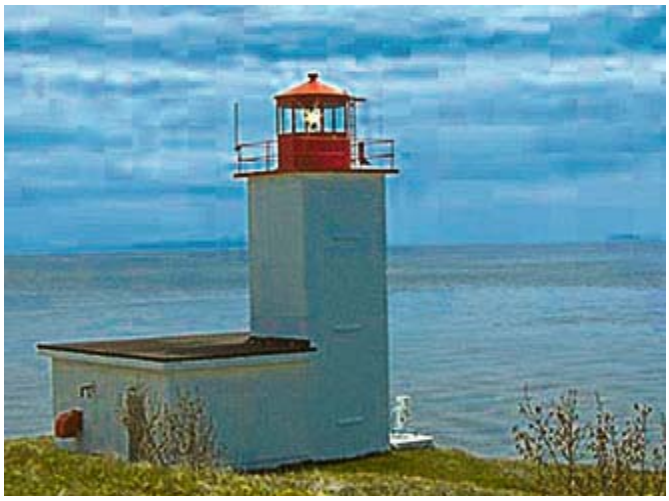
Caution.—A submarine telecommunications cable is laid from the shore W of Rodgers Head and extends SE to the SE shore of the Bay of Fundy, in the vicinity of Port Gerorge.

1.49 Quaco Head (45°19'N., 65°32'W.), 76m high, lies about 2 miles NE of Rogers Head, from which it is separated by a treeless valley. There is a tide rip off Quaco Head. Quaco Head Reef, on which there is an above-water rock, extends about 0.5 mile SE of Quaco Head. A light is shown from a white square tower at the corner of a white square building situated on Quaco Head. A lighted bell buoy, which is withdrawn during the winter, is moored SE of the reef.

A depth of 16.5m lies about 2 miles SE of Quaco Head.

Quaco Shoal, with a least depth of 1.8m, lies from about 0.5 to 1.5 miles NNE of Quaco Head. The S and W ends of the shoal are marked by buoys.

Quaco Bay (45°19'N., 65°32'W.) is entered between Quaco Head and Macomber Point, 2 miles NNE. The mouth of the Irish River, protected by two small breakwaters and accessible by coasting vessels to which it provides shelter, lies 0.7 mile W of Macomber Point, with Macomber Creek between.



Quaco Head Light

There is a public pier close N of the mouth of the Irish River, with the outer face 70m long and depths of 1.5 to 2.4m alongside at HW.

Anchorage.—Good temporary anchorage for mariners with local knowledge can be taken, in depths of 9.1 to 11m, sheltered from N and W winds, about 0.5 mile NE of McCoy Head, with East Red Head in line with Rogers Head. Anchorage is also available, in depths of 9.1 to 11m, mud, between Quaco Shoal and the head of the bay, about 1 mile N of Quaco Head, but this anchorage is unsafe with E winds.

Caution.—Quaco Ledge (45°14'N., 65°22'W.), about 8.8 miles ESE of Quaco Head, consists of a small ridge of rocks surrounded by deep water. The highest part of the ridge dries 4m, and when covered, shows a heavy tide rip. In the vicinity of Quaco Ledge, the tidal currents set parallel to the coast with a maximum velocity of about 2 knots. A lighted bell buoy is moored about 230m NW of the ledge.

1.50 Fownes Head (45°23'N., 65°27'W.), about 5 miles NE of Quaco Head, can be distinguished by its perpendicular red cliffs, 91.4 to 122m high.

The entrance to the Salmon River, about 3.3 miles farther NE, is protected by two breakwaters. A shoal, with depths of 9.1m and less, extends about 1.3 miles S of the mouth of the river.

Tufts Point, about 1.5 miles farther NE, is an earthy headland, 9.1 to 15.2m high, and partly cleared.

Martin Head (45°29'N., 65°11'W.), about 8.5 miles ENE of Tufts Point, is a small, bare hillock, 30.5m high, connected to the mainland, about 0.5 mile WNW, by a gravel and sand causeway. Martin Head, when seen from a distance, resembles an island. A patch of rocks, which dry 1.5m, lies about 0.3 mile WSW of the head.

Tides—Currents.—Between Cape Spencer and Martin Head, the tidal currents run parallel to the coast at an average rate of 2 knots. In the vicinity of Cape Spencer, the W current commences about 2 hours before HW; the E current commences about 2 hours before LW by the shore.

Chignecto Bay

1.51 Chignecto Bay lies between New Brunswick and Nova Scotia, and is entered between Martin Head and Cape Chignecto, about 14 miles SE. Cape Chignecto is a steep-to, bold, conspicuous headland. The land near the cape rises rapidly to over 213m. The bay is free from off-lying dangers, and even in thick weather the gradual decrease of soundings on either side is sufficiently defined to ensure safe navigation to within 5 miles of **Cape Maringouin** (45°43'N., 64°33'W.), where the head of the bay shoals before branching into Shepody Bay and Cumberland Basin.

Caution.—A dangerous wreck lies about 1.2 miles NW of Cape Chignecto.

1.52 Northwest shore.—Matthews Head (45°34'N., 64°58'W.), about 10.5 miles ENE of Martin Head, is a bold and rounded point, 46m high, partially cleared of trees. A thickly-wooded hill rises to an elevation of about 213m close behind the point.

The entrance to the Upper Salmon River, which dries, lies about 2 miles NNE of Matthews Head. At the mouth of the river there are two breakwaters and close within is spanned by a road bridge, vertical clearance 1.5m, at the resort village of Alma which lies on the E bank. The river and its approaches dry for a distance of more than 0.5 mile offshore. A lighted buoy is moored about 0.6 mile SE of the entrance. A channel marked by stakes leads through the drying bank in the approaches to the entrance where a light stands on the head of the NE breakwater at Alma. A tide gauge, with a radar reflector, stands about 0.6 mile SSW of the NE breakwater, on the drying flats W of the approach channel.

Three radio towers, 61m high and fitted with red aircraft obstruction lights at an elevation of 347m, are situated about 3.3 miles N of the river entrance. Owls Head, a thickly-wooded point, lies about 1.8 miles farther ENE.

There is a berth alongside the NE breakwater, 70m long with

Cape Chignecto

depths at the outer end of 3.4m and 4.9m, respectively, at HW neap and spring tides.

1.53 Salisbury Bay (Rocher Bay) is entered between Owls Head and **Cape Enrage** (45°36'N., 64°47'W.), which is thickly wooded and faced with perpendicular cliffs, 30.5m high. A rocky spit, which dries, extends nearly 0.3 mile SSW from the cape; a lighted bell buoy, which is not maintained during the winter months, is moored about 0.6 mile SW of Cape Enrage Light.

Red Head, composed of earthy cliffs, 15 to 30m high, is located near the head of Rocher Bay, 3 miles NW of Cape Enrage. Tidal currents generally set towards Cape Enrage. A depth of 6.4m lies about 2.5 miles SW of Red Head. The bay is not recommended as an anchorage, being shallow towards its head and entirely open to the prevailing S and W winds.

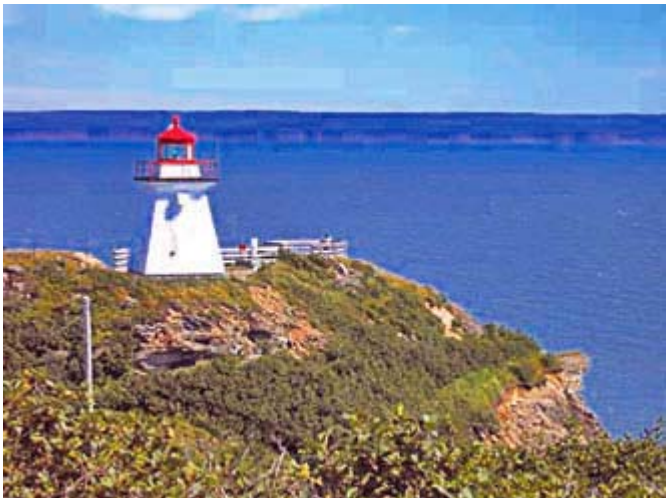
Marys Point (45°43'N., 64°39'W.), the S entrance to the Shepody River, lies about 9.5 miles NE of Cape Enrage. New Horton Flats, which dry 6.7m, fill the bay between Marys Point and the coast SW.

Marys Point Reef (St. Mary Ledge), which dries 8.5m, extends about 0.6 mile NE of Marys Point.

Grindstone Island, 36m high, on which there are several abandoned grindstone quarries, lies about 1 mile ENE of Marys Point. A light is shown from a white six-sided tower, 6m high, standing near the W end of the island. Grindstone Shoal, with a least depth of 2.7m, lies with its N end about 0.3 mile SSE of Grindstone Island, and extends about 1.3 miles SSW. The N and S ends of the shoal are marked by buoys.

Tides—Currents.—The tidal rise at Grindstone Island is 11.9m at MHWS, and 10.4m at MHWN. The tidal currents between Martin Head and Grindstone Island run parallel to the shore with an average velocity of 2 knots, and cause eddies near the projecting points.

Anchorage between Martin Head and Grindstone Island can be taken anywhere along the shore in good weather, but with winds of any strength these anchorages become insecure.



Cape Enrage Light

Cape Chignecto Light

1.54 Southeast shore.—The coast from to Squally Point, about 6.3 miles N, is steep-to. From Squally Point to Pudsey Point, about 2.8 miles NE, the coastal bank, with depths of less than 5.5m, extends up to 0.5 mile offshore. Dudgen Rock lies on this bank, about 0.2 mile NE of Squally Point.

The Apple River, which dries across just above its entrance, is entered between Pudsey Point and **Cape Capstan** (45°28'N., 64°51'W.), about 0.8 mile NNE. Apple River Light is shown on Cape Capstan from a white square tower on the corner of a white square building.

The coast between Apple Head, about 1.5 miles NE of Cape Capstan, and Raven Head, about 10.5 miles farther NE, recedes forming a bight. From a position close NE of Raven Head to **Ragged Reef Point** (45°40'N., 64°30'W.), the coastal bank, with depths of less than 5.5m, extends about 0.3 mile from the shore. A lighted bell buoy is moored about 1 mile WSW of Ragged Reef Point.

Between Ragged Reef Point and Boss Point, about 4 miles NNE, the shore recedes forming a bight, the head of which dries out for about 0.5 mile. The village of Joggins is situated near the head of the bight.

Cape Maringouin (45°44'N., 64°33'W.) is the SW extremity of the peninsula which divides the head of Chignecto Bay into two branches, the Petitcodiac River to the W and Cumberland Basin to the E. A bank, with depths of less than 5.5m, extends about 1.5 miles S of the cape. Maringouin Shoal, with a least depth of 0.3m, lies about 1.5 miles SE of the cape, on the E part of the latter bank.

The Petitcodiac River

1.55 The Petitcodiac River is navigable at HW, as far as **Moncton** (46°05'N., 64°46'W.), 24 miles above Cape Maringouin.

Tidal currents in Shepody Bay, in the entrance to the river, have a maximum velocity of from 3 to 4 knots. Tide rips extend from the vicinity of Grindstone Island in a NNE direction for a distance of about 5 miles.

The Petitcodiac River is noted for its bore, which occurs between Stoney Creek, about 9.5 miles above Fort Folly Point, and Moncton. The bore, with a breaking face, occurs in this section of the river about 3 hours before HW. At Moncton, its rate of progress at spring tides is about 8 knots, and the average height about 1m. After the bore's passage, the tide rises very rapidly until HW. The breaking face of the bore is only a few inches high at neap tides.

The outer edge of drying flats, in the NW part of Shepody Bay, extend from Grindstone Island to Cape Demoiselle, about 5.5 miles NNE. The latter cape rises to 69.2m, and is the S extremity of Hopewell Cape. Middle Ground, which dries 1.8m, lies with its S end about 2 miles SSE of Cape Demoiselle, and on the W side of the channel to the Petitcodiac River.

Shepody Mountain (45°48'N., 64°39'W.), 327m high, is the highest point of land along this coast, and is located about 2.8 miles SW of Cape Demoiselle.

Maringouin Flats, which dry 1.2m, lie about 1.3 miles NNE of Cape Maringouin, and extend about 0.8 mile from the shore on the E side of the bay. Grand Anse Ledge, which dries 6.1m, lies about 4 miles N of Cape Maringouin, near the outer edge of the drying flats which fill Grande Anse.

Cape Sable Light

In the main channel there are two shoal patches, with depths of 4.3 and 4.6m, located about 2.3 and 2.5 miles SSE, respectively, of Cape Demoiselle.

Dorchester Cape (45°51'N., 64°32'W.), on the E bank of the Petitcodiac River about 7.5 miles N of Cape Maringouin, consists of conspicuous red cliffs, about 30.5m high, which in good visibility can be seen S of Grindstone Island. Drying rocky ledges extend about 0.4 mile W of Dorchester Cape.

The Memramcook River is entered between Cole Point (Cole Head), located close N of Dorchester Cape, and Fort Folly Point, about 0.8 mile W. This river dries about 1.3 miles above its mouth, and local knowledge is necessary for navigating the river.

Close N of Cole Point there is an abandoned concrete pier head, 24m wide, at the face which dries 9.1m.

Calhoun Flats, which dry, extend nearly 0.8 mile E from **Hopewell Cape** (45°50'N., 64°34'W.), about 2 miles N of Cape Demoiselle.

Above Fort Folly Point, the Petitcodiac River winds its way for about 18 miles to the head of navigation at **Moncton** (46°05'N., 64°46'W.) where a causeway crosses the river. At Moncton is an Irving Oil Company wharf used by small tank-

ers.

1.56 At **Hillsborough** (45°56'N., 64°39'W.), on the W bank of the river, about 4.5 miles above Fort Folly Point, are the ruins of a pier and gypsum plant, with two conspicuous concrete silos and a water tower adjacent.

On the E side of the river opposite Hillsborough is a small pier with a depth of 4.9m alongside the outer face at HW. Other berths in the river are in ruins or disused.

Local knowledge is necessary for the navigation of the Petitcodiac River. The river dries about 2 miles above Fort Folly Point.

Anchorage.—There is anchorage for vessels, in about 7.6m, mud, about 0.5 mile W of Fort Folly Point. With the wind opposed to the tide there is a heavy sea in this area.

Cumberland Basin

1.57 Cumberland Basin is entered between **Ward Point** (45°44'N., 64°29'W.), about 2.8 miles E of Cape Maringouin, and Boss Point, about 1.8 miles E. Pecks Point, the inner W entrance point, lies about 1 mile NNE of Ward Point. It is navigable at HW as far as **Sackville** (45°53'N., 64°22'W.) and Amherst Basin, which lie about 12 miles NNE and 12 miles NE, respectively, from Cape Maringouin.

Tides—Currents.—The tidal rise at Amherst Basin is 13.6m at MHWS, and 11.9m at MHWN.

In Cumberland Basin, the tidal currents set parallel to the shore with a velocity of 4 to 5 knots.

Cumberland Basin receives the water of several rivers, and is largely occupied by drying flats, but is easily navigable as far as Wood Point, the last treed point on the W shore, about 7.5 miles NE of Peck Point. The narrow and tortuous Tantramar River is entered about 2.5 miles farther NE. Low and marshy land, known as Elysian Fields, extend about 3.8 miles NE of Minudie Point, which lies about 4.5 miles NE of Boss Point.

Anchorage.—There is anchorage for small vessels, in 11m, about 1 mile NE of Peck Point. Anchorage can also be taken in the narrow channel, about 1 mile NE of Wood Point, in depths of about 5 to 7m. Beyond this anchorage vessels have to lie aground at LW.

Local knowledge is required.

Southwest Coast of Nova Scotia—Cape Sable to Outer Island

1.58 **Cape Sable** (43°23'N., 65°37'W.), the SW extremity of Nova Scotia, is the S end of an island composed of shifting sand dunes, 2 to 6m high, almost joined to the S end of Cape Sable Island by a sandy beach. Cape Sable Island, flat and wooded, is joined to the mainland N by a causeway. Cape Sable Light, 29.6m high, with a racon and a fog signal, is shown from a white octagonal tower on the cape. A racon operates and a fog signal is sounded from the light.

From Cape Sable, the coast is indented and trends NW for about 34 miles to Cape Fourchu, the W entrance point for Yarmouth Harbor. Many islands and numerous dangers lie off this part of the coast, the outermost being about 15 miles offshore.

Tides—Currents.—West of Cape Sable, the current sets NW on the flood and SE on the ebb. Heavy tide rips and 4-knot tidal currents have been reported S of Cape Sable.

Caution.—Cape Sable often presents a poor radar image. Mariners are cautioned that due to severe storm conditions the shore line in this area is subject to change, and local knowledge is required for navigation in all inshore waters.

1.59 Horse Race, an extensive shoal with depths of less than 9.1m, extends nearly 2 miles SSE of Cape Sable. Outer Shoal, with a least depth of 3.7m, is located between 1.25 and 1.75 miles SSE of the cape on this bank.

Columbia Rock, with a depth of 0.9m, lies on the same bank, about 1 mile SSE of the cape. Black Rock, 0.6m high, lies about 0.4 mile E of the E point of Cape Sable.

From Cape Sable, a narrow neck of shifting sand dunes, 4.6 to 8.5m high, extends about 1.5 miles NW to Black Point (Black Head), 3m high. Southwest Ledge, with a least depth of 0.6m, extends 2 miles S from Black Point. There are several drying rocks close N of the ledge, and depths of less than 1.8m between the ledge and Black Point. A bank, with depths of less than 11m, extends about 1.3 miles farther S. At the S tip of this bank, called Tail of the Rip, tidal currents of up to 4 knots have been reported.

A lighted buoy is moored about 4 miles SW of Cape Sable, and about 1 mile SSW of Tale of the Rip.

There are many shoals, with depths of 9.1 to 11m in the general area between Cape Sable Island and Seal Island, about 15.5 miles W.

1.60 **Cornwall Rock** (43°23'N., 65°42'W.), about 2.3 miles SW of Black Point, has a depth of 4.3m and is marked by a buoy. Depths of 7.3m and 7.9m lie about 0.5 mile W and 0.4 mile S, respectively, of the rock.

Green Island (43°25'N., 65°41'W.), 6.7m high, about 1.5 miles NW of Black Point, lies on the outer part of a bank, with numerous rocks and ledges extending W from Fish Island.

Green Island Ledge, with a depth of 1.2m and over which there is a tide rip, lies about 1 mile S of Green Island.

Depths of less than 5.5m lie between Cornwall Rock, Green Island Ledge, and Black Point.

Cooks Ledge, with a least depth of 2.7m, lies about 0.8 mile W of Green Island. Doddys Shoal, with a least depth of 7.9m, lies about 0.8 mile farther W.

The common approach to The Sound, Shag Harbor, Bear Point, Newellton, Clarks Harbor, and Barrington Passage lies between Green Island and the S extremity of Outer Island (Bon Portage Island), about 3.5 miles NW.

West Head, the W extremity of Cape Sable Island, is marked by a light shown from a red and white circular tower. Close NE of the head, a breakwater extends 275m NE; at its outer end is a public wharf extending 122m to the E. The wharf has a least depth of 4.9m alongside.

A lighted bell buoy is moored about 1 mile SW of West Head, at the N side of a rocky patch with a depth of 4.9m.

1.61 **Clarks Harbor** (43°27'N., 65°38'W.), about 1 mile SE of West Head, is obstructed by rocks and shoals, and only recommended to mariners with local knowledge. A buoyed channel leads to a restricted anchorage about 0.5 mile ENE of Fish Island, and another buoyed channel leads to the wharves.

At Swim Point, on the N shore near the inner end of the har-

bor, there is a public 70m long. There is shelter along the inside face of the outer end, 55m long, with a least depth of 2.4m alongside. A light is shown from a mast on the outer end of the wharf. Close to the E, there are several private wharves and a floating breakwater.

Barrington Passage, entered W of West Head, lies between Cape Sable Island and the mainland. Through navigation is prevented by a causeway, consisting of a rock-filled embankment, connecting the N extremity of Cape Sable Island to the mainland. The passage is partially buoyed. At Newellton, about 1.3 miles NE of West Head, there is a government wharf, with a depth of 2.4m alongside its head, which is 88m long. On the opposite shore of the passage, and close N of Bear Point, there is a government wharf with depths of 1.5 to 2.1m alongside.

The coast of the mainland from Bear Point, on the W side of Barrington Passage to Prospect Point, about 3 miles W, is fronted at a distance of 2.25 miles by an extensive shoal, on which are numerous islets and rocks.

Stoddart Island (43°28'N., 65°43'W.) and Inner Island (Prospect Island), close N, lie on the W part of this shoal. A light is shown from a white square tower on the NW point of the island.

Shag Harbor lies N of Stoddart Island, and although open SE, the strength of the sea from that direction is somewhat broken by the ledges SW of Cape Sable.

Outer Island (Bon Portage Island), about 1.3 miles W of Stoddart Island, is the S of a group of islands, with surrounding shoals, extending about 5 miles N to the mainland. Duck Island (Gull Islet), which dries 3m, lies near the outer end of shoals extending about 0.8 mile W of Outer Island. A light is shown from the S extremity of Outer Island; a lighted bell buoy is moored about 1 mile S of the light.

Caution.—A submarine power cable is laid between the N end of Outer Island and the mainland in a 033°-213° direction. Mariners are warned not to anchor in the vicinity of this cable.

The Dock at Shag Harbor

1.62 The Sound (Shag Harbor) (43°29'N., 65°44'W.), E of Outer Island, is open S, but the heavy seas from this direction are somewhat broken by the ledges off Cape Sable.

Barrel Rock, with a depth of 3m, and Big Ledge, above-water and marked by a light shown from a white square tower with a white square daymark, lie about 1.8 miles and 2.4 miles N, respectively, of Outer Island, in the S entrance to Cockerwit Passage. The latter passage is shallow, with a least depth of 1.8m, connecting The Sound to Pubnico Harbor. The passage is buoyed and is only recommended to mariners with local knowledge.

Anchorage.—Temporary anchorage can be taken, in about 14.6m, hard bottom, in The Sound, about 0.5 mile NW of Stoddart Island Light. The best holding ground is reported to be at the S entrance to Cockerwit Passage in about 7.3m, about 0.8 mile S of Big Ledge, and NW of Conquer All, a hill 18.3m high. There is also anchorage for mariners with local knowledge, in 9.1m, mud, in Lower Woods Harbor Anchorage, about 0.4 mile SW of Big Ledge.

Caution.—In entering The Sound with the flood current, a wide berth should be given to the S point of Outer Island, as the current sets directly for it at a considerable velocity.

Off-lying Islets and Shoals West of Cape Sable

1.63 Seal Island (43°25'N., 66°01'W.), about 17 miles W of Cape Sable, is the largest and S of a group of five islands extending about 7.5 miles N. The middle of the island is low and sandy, while the N and S ends are wooded and about 15.2m high. Seal Island has been reported to be a good radar target at 14 miles, and to be identifiable with the charted feature from the shape and character of the echoat a distance of 7 miles under normal conditions.

Seal Island Light is shown from a white octagonal tower, 21m high, with two red horizontal bands, near the S point of the island. A rectangular building is situated close S of the light.

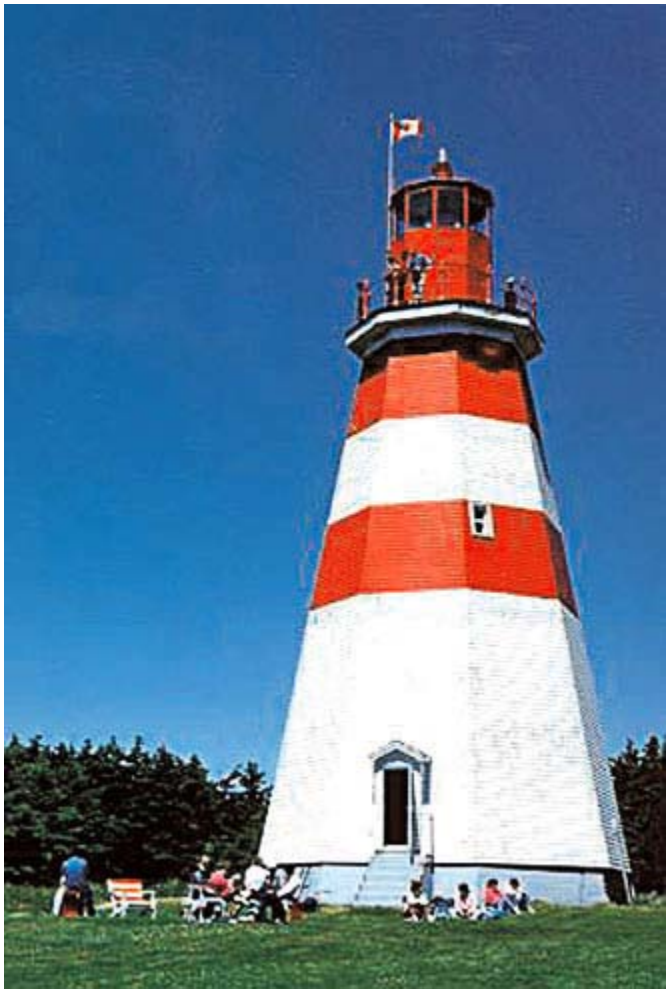
Blonde Rock, which dries and generally breaks, forms the highest part of a rocky bank, located about 3.5 miles SSE of Seal Island Light. Shoals, with depths of 10m and 8.2m, lie about 0.5 mile and nearly 1 mile W, respectively, of Blonde Rock. These two shoals are marked by very heavy tide rips which show like a breaker. A lighted whistle buoy is moored about 2 miles SSW of Blonde Rock.

Purdy Rock (43°23'N., 65°58'W.), with a depth of 4.6m and steep-to, lies about 2 miles ESE of the SE end of Seal Island. The sea breaks on the rock in heavy weather; there is a ripple over the rock in fair weather, during the strength of the tidal current.

Elbow Shoal, with depths of less than 5.5m, lies midway between Blonde Rock and Seal Island. Elbow Rock, with a least depth of 0.9m, lies on this shoal, about 1.3 miles S of Seal Island. Zetland Shoal, with a least depth of 6.1m, lies about 1 mile W of Elbow Rock.

Devils Limb, a rocky islet, 4m high, lies about 1.3 miles WNW of Seal Island Light. Limbs Limb, about 0.5 mile farther N, is a rock which dries 3m. An extensive bank, with depths of less than 5.5m, surrounds the two above-mentioned dangers and connects them to Seal Island.

Anchorage.—Temporary anchorage, in good weather or in an emergency, can be taken, in a depth of about 7.3m, rock and



Seal Island Light

sand, off the E coast of Seal Island, and in Crowell Cove, on the W side of the island.

Caution.—There are many isolated shoal patches between Blonde Rock, Seal Island, and the islands N. Mariners should navigate with caution in this area due to the prevalence of fog and the strong tidal currents.

1.64 **Mud Island** (43°29'N., 65°59'W.), 7.6m high, with its S half wooded, lies about 2.8 miles NNE of Seal Island. Noddy Island, 5.5m high, lies about 0.5 mile S of Mud Island; rocks obstruct the channel between the islands. A 4.3m shoal lies about 0.3 mile SW; a rocky bank, with a least depth of 7.3m and on which there is a tide rip, extends nearly 1.3 miles SSW of Noddy Island.

Black Ledge, which dries about 3m, lies about 1 mile WNW of the S extremity of Mud Island. A group of rocks, one above-water, lies about 0.4 mile N of the ledge, and a 2.1m shoal lies about 275m farther N. Alcor Rock, with a depth of 5.5m, lies about 1 mile W of Black Ledge.

Turbine Shoal (Mud Island Shoal), with a least depth of 4m, lies about 2.3 miles W of the S extremity of Mud Island. This shoal breaks in very heavy weather.

Round Island, 7.6m high, lies about 0.7 mile N of Mud Island. Flat Island, 4m high, lies about 0.5 mile W of Round Island. These islands lie on a bank, with depths of less than 5.5m, extending N and NW of Mud Island. Two islets and a 2.2m shoal lie on this bank, which extends about 0.6 mile N of Flat Island.

Soldiers Ledge, which dries about 2.7m and generally breaks, lies nearly 2.5 miles NW of Flat Island. Two banks, each with a least depth of 2.2m, extend about 1.3 miles S and 0.8 mile ESE from the ledge. A heavy tide rip over several shoal patches extends about 3.5 miles N of the ledge to **Bald Tusket Island** (43°36'N., 66°01'W.). A lighted whistle buoy is moored nearly 2 miles WSW of the ledge.

Jacquards Ridge (43°32'N., 66°09'W.), previously named Jacko Ridge, has a least depth of 7.3m near its N end, about 6.5 miles WNW of Flat Island. The ridge extends about 1.5 miles in a N-S direction and has depths of 9.1m near its S end. The ridge shows a long tide rip in good weather and is reported to break in a heavy sea.

Anchorage.—Temporary anchorage can be taken, in 14.6m, mud, about 0.5 mile SSE of the NE extremity of Mud Island, and also off the E side of Seal Island in about 7m, rock and sand. These anchorages are only recommended in good weather or in an emergency. When approaching from the NW, care is necessary to avoid **Soldiers Ledge** (43°32'N., 66°03'W.), which is connected to Flat Island by a bank with depths of less than 10m.

Pubnico Harbor

1.65 Pubnico Harbor is entered between **St. Ann Point** (Pubnico Point) (43°35'N., 65°48'W.) and the mainland, about 1 mile E. It consists of a narrow inlet 6.5 miles long, the N part of which is encumbered with drying flats. A number of villages, some of which have berthing facilities, lie on both sides of the inlet and anchorage is available. Boat building, fishing, and fish processing are the principal industries.

The harbor is buoyed and navigable by deep-draft vessels for about 2 miles above its entrance, and small vessels can proceed to within 1.5 miles of its head.

Johns Island (43°33'N., 65°48'W.), 29m high and thickly wooded, lies on the E side of the approach to Pubnico Harbor. St. John Ledge, which dries 3.4m and generally breaks, lies about 1.5 miles S of Johns Island. The ledge lies on a shoal bank extending 0.5 mile N and SW from it, and on which the tidal currents set strongly. A rock, awash, lies about 0.4 mile NE of the ledge; a bank with depths of less than 5.5m, extends ENE to the islands off the mainland.

Pubnico Harbor Light, on **Beach Point** (43°36'N., 65°47'W.), bearing 018° and open W of Johns Island, leads W of Johns Island Ledge. The light is shown from a red and white circular tower.

Shoal patches, with least depths of 8.8m and 6.8m, lie about 3 miles W and 2.8 miles NW, respectively, of Johns Island, on the W side of the approach to Pubnico Harbor.

Only mariners with local knowledge should attempt to enter the harbor, except in an emergency.

1.66 Pubnico Ledge, which dries 1.2m, extends about 0.4 mile offshore from the W side of the harbor, about 1 mile NE of St. Ann Point.

A shoal, with a depth of 4m, lies on the E side of the channel,

about 0.8 mile N of Beach Point.

At Denis Point, on the W side of the harbor, about 1.8 miles NNE of St. Ann Point, there is an enclosed boat harbor, with depths of 1.8 to 3.4m, in the outer half of the basin. A shoal, with a depth of 0.6m, lies about 0.1 mile E of the boat harbor.

Most of the N part of Pubnico Harbor is encumbered by drying flats.

Depths—Limitations.—At Lower East Pubnico, about 0.7 mile NNE of Beach Point, there is a wharf, 186m long and 13m wide, with a depth of 4.3m across the outer end.

At Middle East Pubnico, about 3 miles N of Beach Point, there is an L-shaped wharf which extends 46m W, with a least depth of 7.9m alongside the outer face, and is 30.5m wide. There are conspicuous buildings and tanks close E of the wharf.

At the W side of the harbor are three L-shaped piers which extend about 183m S of Denis Point and form two enclosed boat basins, with depths of 1.8 to 3.4m in the outer parts. A light stands on the head of the S pier. Attention is called to a 0.6m shoal close off the entrance of the N basin.

Caution.—A submarine cable is laid across the harbor, 1.5 miles N of Beach Point.

Anchorage.—There is anchorage, in about 17m, mud, about 1 mile N of Beach Point.

Pubnico Harbor to Frenchman Point

1.67 The coast between St. Ann Point and **Frenchman Point** (43°38'N., 66°01'W.), the S end of Tusket Island, about 9.5 miles WNW, recedes to form **Lobster Bay** (43°37'N., 65°55'W.), an extensive bay encumbered by islands and shoals, among which small vessels can find good shelter; however, local knowledge is necessary. No detailed description will be given, and only the more frequented harbors and anchorages and the principal dangers in their vicinity will be mentioned.

The Peak (43°36'N., 65°51'W.), with a least depth of 4m, lies about 2 miles NW of St. Ann Point. Nearly abreast of this shoal, a rocky spit, with a least depth of 1.8m, extends about 0.4 mile W from the mainland. There are tide rips over these dangers and the passage between them is about 0.5 mile wide, with depths of 9.1 to 20.1m. The Brothers are two similar islands, 3m high, lying close to the mainland about 2 miles NNW of St. Ann Point.

Abbot Harbor Light (43°40'N., 65°49'W.), bearing 008° and open W of the S island of The Brothers, leads between the spit and The Peak.

Abbot Harbor, between Abbot Island and the mainland, provides good shelter to small craft.

Whitehead Island (43°40'N., 65°52'W.), 22m high, with conspicuous reddish earth cliffs on its S side, lies about 1.8 miles W of Abbot Island. Whitehead Ledge, which dries 0.3m, lies about midway between Whitehead Island and Abbot Island. The ledge is marked by a buoy.

Caution.—A submarine power cable is laid from Whitehead Island to the mainland N of Abbot Harbor. Mariners are cautioned not to anchor in the vicinity of this cable.

Pumpkin Island, 13.1m high, lies about 0.5 mile N of Whitehead Island. Pumpkin Ledge, which dries 0.3m, lies nearly 0.5 mile E of the island.

Jones Island lies about 1.5 miles NNW of Whitehead Island. Jones Ledge, about 0.4 mile S of Jones Island, dries 0.6m at its N end. Jones Anchorage, about 0.4 mile N of Jones Island, is available to mariners with local knowledge in depths of 11m. Restricted anchorage can also be found in Hog Island Channel.

Abbot Harbor Light

Abbot Harbor Light

The Tusket River

1.68 The Tusket River is entered between **Western Bar Island** (43°41'N., 65°59'W.) and Wilson Point, about 2.5 miles NE. The river provides good shelter; the two entrance channels, narrow and obstructed by dangers, are available to vessels of not more than 4.6m draft and should not be attempted without local knowledge.

Gull Island, about 2 miles W of Whitehead Island, lies in the approach to the Tusket River. A stony spit, named Gull Island Bar (Gull Bar), extends about 0.5 mile N. Gull Ledge, with a depth of 4m, lies about 2 miles S of Gull Island; a buoy is moored S of the ledge. A submerged wreck lies E of the ledge.

Dollard Rock (Dolland Rock), with a least depth of 3.7m, lies about 1 mile NW of the ledge; it is marked close S by a buoy. Angus Shoal (SW Shoal), with a depth of 4.6m, lies about 1 mile SW of Gull Island.

Eastern Bar Island (Gooseberry Island), located about 0.5 mile SW of Wilson Point, lies near the S extremity of an extensive bank, with depths of 0.9 to 5.2m, which separates the two entrance channels. Fish Ledge, which dries 2.7m, about 0.5 mile farther W, lies on the SW part of the bank.

Tusket River Light is shown from a white square tower, 11m high, on Big Fish Island, on the W side of the above-mentioned bank, and about 1 mile NW of Eastern Bar Island. Big Fish Rock, which dries, lies on the E side of the W channel, about 0.3 mile WNW of the same Big Fish Island.

On the E side of Tusket Wedge, about 1.3 miles ENE of Wedge Point, there is an enclosed harbor for small fishing craft. Tusket Wedge Light is shown from a mast situated at the above-mentioned harbor for small fishing craft.

Tides—Currents.—The tidal current has a velocity of about 2 knots, about 1.5 miles N of Tucker Island. The tidal current, about 5 miles above the island, has a velocity of 5 knots.

Anchorage.—There is anchorage, in about 11m, mud, about 0.4 mile N of Tucker Island. There is also anchorage in the same depth, about 1.5 miles farther up the river.

Caution.—A submerged power cable is laid between Big Fish Island and Tusket Wedge, close S of the harbor.

Tucker Island lies near the N end of the bank, and about 0.5 mile N of Big Fish Island. Tucker Island Ledge, with a depth of 1.5m, about 0.3 mile W of the island, lies on the W side of the W channel.

The Tusket Islands

1.69 The Tusket Islands is a group of islands lying close S of the mainland on the W side of the entrance to the Tusket River. **Big Tusket Island** (43°39'N., 66°01'W.), the highest island, has an elevation of 30.5m. Schooner Passage and Ellenwoods Passage lead through the group in a general NW-SE direction, but should only be used by small vessels with masters having local knowledge. Only a general description of the islands and dangers will be given.

Tides—Currents.—Among the Tusket Islands, the general direction of the flood current is NW and the ebb current SE, but the direction is influenced by the land. Heavy tide rips and eddies are numerous. The average velocity of the tidal currents is from 2 to 4 knots, and probably more in the vicinity of some of the points. In Schooner Passage, the current velocity is 3 knots, and off the NE point of Ellenwood Island it runs at a velocity of 4 knots.

Caution.—Many submarine cables are laid between many of the Tusket Islands and to the mainland. Mariners are cautioned not to anchor in the vicinity of the cables.

1.70 Frenchman Point (43°38'N., 66°01'W.) is the S extremity of Big Tusket Island. A light is shown from a red skeleton tower on a rock about 0.5 mile SW of the point. Peases Island Ledge, about 0.3 mile farther SW, dries 0.9m and lies near the SW extremity of a bank extending SW from the point. A lighted bell buoy marks the extremity of shoals extending SE of the point.

Old Woman, a rock which dries 3.4m, lies about 1.3 miles E of Frenchman Point. The rock and surrounding shoal is marked S by a buoy. A rock, with a depth of less than 1.8m, lies 0.5 mile NNE of Old Woman.

Old Man, a rock which dries 1.5m, lies about 1.8 miles S of Frenchman Point and is marked E by a buoy. Little Bald Tusket Shoal, with a depth of 2.7m, lies about 0.7 mile NW of Old Man.

Peases Island, about 1 mile SW of Frenchman Point, is marked by a light on its SE extremity.

Outer Bald Tusket Island (43°36'N., 66°02'W.), 16m high and bare, about 1.8 miles S of Peases Island, is the S island of the group. With a steep cliff and a single dwelling at its S end, the island, which is radar conspicuous, is easily recognized from the other islands in the group. The bottom everywhere is uneven and irregular with numerous dangers.

Cleopatra Shoal, with a least depth of 3m, lies nearly 1.8 miles SSE of Outer Bald Tusket Island.

A 3.2m rocky patch lies about 2 miles SSW of Outer Bald Tusket Island. There is also a heavy tide rip between the shoals S of the latter island and Soldiers Ledge, which was previously described in paragraph 1.64.

The **Spectacle Islands** (43°38'N., 66°04'W.) are the W islands of the group. Spectacle Ledge, with a least depth of 3m, lies about 0.8 mile S of the islands. A lighted bell buoy lies about 0.8 mile farther S.

Candlebox Island, marked by a light, lies about 2 miles NW of Frenchman Point, near the N entrance to Schooner Passage, on the E side of the fairway.

Murder Island, with its SE extremity about 0.5 mile farther NW, is the N island of the group. Murder Island Shoal, with a least depth of 3m, lies about 0.7 mile SW of the island. Holmes Spit, with a least depth of 1.8m, lies about 0.8 mile farther S.

Ellenwoods Passage branches from Schooner Passage, N of Peases Island, passing W of Allen Island and Owls Head.

Off-lying Dangers West of the Tusket Islands

1.71 Gannet South Shoal (43°34'N., 66°07'W.), about 5.5 miles SW of Peases Island, with a depth of 4.6m, sometimes breaks in a very heavy sea and shows a small ripple in good weather. Gannet Southwest Shoal, about 2 miles NW of Gannet South Shoal, with a least depth of 3.6m, shows a small ripple in good weather, and breaks in a heavy sea.

Gannet Rock (43°38'N., 66°09'W.), about 3.5 miles W of the Spectacle Islands, has a sugar loaf peak, 15m high, near its S end, and a hillock, nearly the same height, near its N end. Two rocks, the higher of which dries 4m, lie close together, about 275m S of the peak. North Rock, which dries 1.8m, and Peter Stewarts Rock (South Rock), which dries about 1.8m, lie about 0.2 mile N and 0.7 mile S, respectively, of Gannet Rock. The sea generally breaks over both these rocks.

Gannet Dry Ledge, marked close E by a buoy, about 1.8 miles SW of Gannet Rock, dries 3m and generally breaks. A lighted bell buoy is moored nearly 1.8 miles W of the ledge. Southeast Breaker (Southeast Rock), about 1.8 miles E of the ledge, has a least depth of 1m and breaks in a heavy sea.

Green Island, 15.2m high and marked by a light, lies 3 miles N of Gannet Rock. An above-water ledge extends nearly 0.3 mile from the S end of the island, and a bank, with depths of

1.8 to 5.8m, extends about 0.5 mile farther S. A submarine cable is laid from Green Island NE to the mainland.

The Tusket Islands to Yarmouth Harbor

1.72 Pinkney Point (43°42'N., 66°04'W.), the S extremity of Pinkney Island, lies about 1.5 miles N of Murder Island. A lighted bell buoy is moored about 0.3 mile SSE of Pinkney Point, on the edge of the shore bank with a depth of 3.7m. Shoals, with least depths of 3.7m, lie about 1.3 miles WSW and 0.8 mile WNW of the same point.

Pinkney Point Light is shown from the rubble extension at the end of a 235m long breakwater on the SE side of Pinkney Island. Ram Island Light is shown about 1 mile farther E. On the E side of Pinkney Point, a rock breakwater protects two L-shaped wharves with depths of 0.9 to 1.5m along their outer faces.

The village of Little River Harbor lies about 1.5 miles ENE of Pinkney Point, and about 0.3 mile E of the SE extremity of Big Cook Island. Little River Harbor Light is shown from a small island close W of the village. A government wharf at the village is 79m long, with a depth of 1.8m at the outer end; the wharf is protected by a breakwater about 57m long.

Chebogue Harbor (43°44'N., 66°06'W.), which provides shelter for small vessels, is entered between Reef Island, 16m high and located about 0.8 miles W of the N extremity of Pinkney Island, and Chebogue Point, flat, treeless, and on which there is a conspicuous silo, nearly 1.5 miles further WNW. A depth of not more than 3.4m can be carried over the bar W of Garden Head, which lies nearly 1 mile E of Chebogue Point. At Central Chebogue, about 3.8 miles NNE of Chebogue Point, there is an L-shaped government wharf, 53m long, with a least depth of 3.4m along its outer face and 1.8m along its inner face. The channel through Chebogue Harbor is buoyed from Chebogue Point to the N end of Clemment Island; however, only mariners with local knowledge should attempt this passage.

Chebogue Ledge, drying 0.7m and marked by a buoy, lies about 1 mile SW of Chebogue Point. There is a tide rip over this ledge, and it generally breaks at LW. Chebogue Point Shoal, with a least depth of 3.7m, lies about 0.8 mile S.

Foul Ground, with a least depth of 1.9m and over which there is a tide rip, lies about 1.3 miles NW of Chebogue Point. A 7.7m patch lies nearly 0.8 mile SSW of Foul Ground. Roaring Bull, a rock which dries 0.9m and is marked on its W side by a buoy, lies about 0.7 mile NW of Foul Ground, to which it is almost joined by a bank.

Sunday Point (43°47'N., 66°08'W.), the E entrance point of Yarmouth Harbor, lies about 3 miles NNW of Chebogue Point. Foul ground, with an islet 12m high on it, extends about 0.3 mile SSW of the point. Two shoals, with depths of 8.6m and 8.7m, lie about 0.5 mile SW and 1 mile SSW, respectively, of Sunday Point.

Vessel Traffic Management.—The S limit of the Bay of Fundy Vessel Traffic Management System extends in a 270° direction from Chebogue Point. All vessels of 20m or more in length are required to report when crossing the S limit in any direction.

1.73 Yarmouth Harbor (43°50'N., 66°07'W.) is open throughout the year and is available to vessels of moderate draft. It is an important transfer point for goods and passengers between Nova Scotia and the United States, via Bar Harbor and Portland, Maine. Lumber, fish, and pulpwood are exported. There is a large fishing industry in the town, as well as a cotton mill.

/Yarmouth Harbor—Berth Information			
Berth	**Length**	**Depth at Low Tide**	**Remarks**
Lobster Rock Marine Terminal			
Outer Berth	152.4m	6.0m	T-shaped jetty. There is a float and stairway in place inside the NE end of the wharf, suitable only for small vessels.
Inner Berth E	31m	5.8-6.4m	—
Inner Berth W	109m	5.8-6.4m	—
Ferry Terminal			
The Bay Ferries Terminal	122m	5.7-6.7m	Ro-ro ramp available. Provides services to Bar Harbor and Portland, USA. Vessels with a maximum loa of 122m with a stern-loading platform can be accommodated at the S end.
Old Public Wharf			
Outer Berth	121m	5.1-5.8m	L-shaped wharf. Shore power available.
Inner Berth	—	2.1m	L-shaped wharf. Shore power available.
Marginal Wharf	106.7m	—	Suitable for deep keeled vessels over 12m as a temporary berth at half tide or more.
Lumber Wharf	61.0m	4.8m	—
Fishing Wharf	39.0m	6.0m	Fishing and general cargo wharf.

Tides—Currents.—The tidal rise at Yarmouth is 4.6m at MHWS, and 3.8m at MHWN.

The tidal current changes its direction shortly after HW and LW by the shore. Between the Tusket Islands and Yarmouth, the inshore flood currents run NW at a maximum velocity of 3 knots. About 4 miles W of the entrance to Yarmouth Harbor, the flood currents run N with a velocity of up to 2 knots, and ebb currents run S with velocities of up to 1.65 knots.

Depths—Limitations.—The berths in the inner harbor are approached by a dredged channel with a limiting depth in 1994 of 6.5m; there is a limiting depth of 6.3m in the turning basin off the berths. Mariners are advised to obtain the latest information from the Harbor Authority.

There is also a turning basin 304m long and 243m wide.

Aspect.—Yarmouth Harbor is entered between Sunday Point and Cape Fourchu, the S extremity of a group of islands connected by drying flats, about 0.8 mile WNW of Sunday Point.

Cape Fourchu, high, rocky, treed, and almost an island to itself, has a decidedly different appearance from the surrounding coast. It derives its name from having two narrow, rocky forks that extend to the S. East Cape, the E fork, is joined to West Fork, about 0.5 mile NW, by a low, narrow beach. A light is shown from a 23m high red and white vertically striped hexagonal tower about 0.3 mile N of the S extremity of East Cape. A lighted bell buoy is moored about 0.5 mile S of East Cape. The channel to the wharves is buoyed.

Hen and Chickens, a group of rocks, one of which dries 3m, lies close to the E side of the entrance, about 0.5 mile N of Sunday Point. A lighted bell buoy is moored close W of the rocks.

Ships Stern, a conspicuous headland, 15.2m high, marked N by a light, lies about 1 mile N of Cape Fourchu Light.

Cape Fourchu Light

Little Bunker Island, 6.1m high, lies about 0.3 mile NE of Ships Stern, and is connected NW to Bunker Island, 22.6m high, by a drying reef. Bunker Island Light is shown near the outer end of a drying reef extending about 110m SW of Little Bunker Island. There are a number of white oil tanks near the center of Bunker Island.

Sollows Rock, which dries 0.6m, lies on the W side of the channel, about 275m WNW of Little Bunker Island. A monument, 4.6m high, stands on Johnson Point (Fish Point), located about 0.3 mile NNE of Sollows Rock.

The harbor N of Bunker Island is almost entirely occupied by drying flats of mud and sand, through which a channel leads to the inner harbor and wharves at the town of Yarmouth. Doctor Island, 4.6m high and wooded, lies on the drying flat abreast the town.

A tower, painted in red and white bands, marked by red aircraft obstruction lights, and with an elevation of 78m, is conspicuous about 5.5 miles NE of Cape Fourchu.

Pilotage.—Pilotage is not compulsory, but recommended for vessels not familiar with the port. Pilot contact information can be found in the table titled **Yarmouth Harbour—Contact Information**.

Contact Information.—See the table titled **Yarmouth Harbour—Contact Information**.

Yarmouth Harbour—Contact Information	
Harbormaster	
Telephone	902-742-1803
	902-740-4780 (mobile)
Facsimile	902-749-0375
Web site	https://www.portofyarmouth.ca
Pilots	
Telephone	902-742-9580
	902-749-6482 (mobile)

Anchorage.—There is no safe anchorage in Yarmouth Harbor. The channel is narrow and affords no swinging room.

In good weather, anchorage is available outside the harbor in varying depths in an established anchorage area W of Cape Fourchu, reported good holding ground.

At Yarmouth Sound, there is an outer anchorage, in depths of 12.8 to 18.2m at LW; an inner anchorage lies W of Bunker's Island, in 12.8m, mud.

Caution.—Yarmouth Harbor is subject to constant silting due to strong tidal currents, and all depths are uncertain and should be checked with local authorities.

A submerged pipeline extends in a NW direction about 0.8 mile NE of Johnson Point. A headwall is visible at the outer end of the pipeline at LW.

Yarmouth Harbor to St. Marys Bay

1.74 Lurcher Shoal (43°51'N., 66°29'W.), an off-lying danger, consisting of two separate shoal heads, lies about 14 miles WNW of Cape Fourchu. Southwest Shoal, the larger of the two shoal heads, has a least depth of 2.1m. A bank, with uneven depths of 12.8 to 18.3m, extends 1.75 miles NNE and N, and 0.75 mile SW, from the shoal.

There is a heavy tide rip over the N part of the bank.

Northeast Shoal, about 2.5 miles NNE of Southwest Shoal, has a least depth of 8.5m and is marked by heavy tide rips. Uneven ground, with depths of 11.3 to 18.3m, in places, and over which there are heavy tide rips, extends 1 mile NNW, 0.5 mile NE, and about 0.3 mile S of the shoal.

A lighted whistle buoy is moored about 1 mile SW of the shallowest part of Southwest Shoal.

A lighted whistle buoy is moored about 1.3 miles NE of Northeast Shoal. Fundy Entrance South M Lighted Whistle Buoy, equipped with a racon, is moored at the seaward end of the traffic separation scheme, about 28 miles NW of Lurcher Shoal.

Little Lurcher Shoal, with a depth of 21.9m, is located about 3.8 miles SE of Southwest Shoal.

1.75 Chegoggin Point (43°51'N., 66°10'W.), about 3.5 miles N of Cape Fourchu (West Cape), is 13.1m high and lies at the N end of an open bight. Three radio towers, marked by red lights, are situated about 1 mile SE of Chegoggin Point. A lighted bell buoy is moored about 0.8 mile SW of the point.

Caution.—It has been reported that Chegoggin Point and the West Cape, Cape Fourchu appear almost identical on a radar display at short range. Caution should be exercised when navigating this part of the coast.

Between Chegoggin Point and Cranberry Point, about 2.5 miles N, rocks and shoals, with depths of 1.8 to 9.1m, extend about 0.6 mile off the low and partially wooded coast.

The coast between Cranberry Point and the village of Standford (Sanford), about 1.5 miles NNE, rises to hills with an elevation of 33.5m a short distance inland. A sector light is shown from a tower. The white sector indicates the preferred channel to the breakwater-wharf at Standford. A lighted bell buoy is moored about 1.3 miles NW of the breakwater-wharf.

Red Head, 21.3m high, lies about 2.5 miles N of Standford. Burns Point lies about 0.8 mile farther N.

Black Point, 6.1m high, lies about 3.5 miles N of Burns Point. Between the points is an open bight from which a bank, with depths of less than 9.1m, extends about 0.7 mile seaward. A 7.1m patch lies about 1.3 miles SSW of Black Point.

Port Maitland (43°59'N., 66°09'W.) is a small drying harbor formed by three breakwaters near the S end of the abovementioned bight. A light is shown from a mast at the outer end of the N breakwater. A lighted bell buoy is moored nearly 1 mile NW of the light.

Caution.—Trinity Ledge (44°00'N., 66°18'W.), about 6.5 miles W of Port Maitland, consists of three rocks, the highest drying 0.9m. The ledge breaks in a heavy sea. There is a heavy tide rip over the ledge and also for a distance 1.5 miles NE of it. A 9.9m patch lies about 1.8 miles ENE of the ledge.

A lighted whistle buoy is moored nearly 1 mile S of Trinity Ledge. A dangerous wreck lies in position 43°57.7'N, 66°19.0'W.

Trinity Ledge lies near the outer edge an extensive bank extending E and NE to the mainland, with depths of less than 18.3m, on which there are numerous shoal heads from 4.6 to 11m. Mavillette Shoal, with a depth of 6.7m, lies on this bank, about 1.5 miles S of Cape St. Mary.

Tides—Currents.—Near Trinity Ledge, the flood current sets N and the ebb current S, with a velocity of 2.5 knots.

St. Marys Bay

1.76 St. Marys Bay (46°14'N., 62°30'W.), entered between Cape St. Mary and Brier Island, about 11 miles NW, is sheltered W by Brier Island, Long Island, and Digby Neck, which are separated from each other by Grand Passage and Petit Passage, respectively. The bay extends about 32 miles NE from its entrance, and is encumbered with shoals for a distance of 12 miles from its head, but the remainder is deep and clear of dangers, except within 1 to 2 miles of the SE shore. The NW shore is steep-to.

The level of the water in St. Marys Bay is raised by SW winds and lowered by NE winds.

Cape St. Mary (44°05'N., 66°13'W.), the SE entrance point of St. Marys Bay, is marked by a light shown from a white tower on the NW corner of a white building. On the E side of Cape St. Mary there is a T-shaped public wharf, 70m long and 10m across the outer face, having a depth of 0.9m at the outer end. Close S a mole extends 130m NE from the shore, with a berthing length on the NW side of about 70m. The depth alongside the head of the mole is 0.9m and about 0.3m along the outer part of the NW face. Close S of the mole a rubble breakwater, which exhibits a light and radar reflector from a mast at its head, extends E from the cape and provides protection to the pier and the mole. A buoy lies about 183m E of the mole. A lighted buoy is moored 0.8 mile S of the cape.

A drying rocky ledge extends about 0.3 mile S of the cape, and a shoal spit, over which there is a heavy tide rip, extends 0.75 mile SSW of the cape.

1.77 Whipple Point (44°14'N., 66°24'W.), lying about 12 miles NW of Cape St. Mary, is the SW extremity of Brier Island. Brier Island Light is shown from a white tower, with three red horizontal bands, about 0.8 mile N of Whipple Point. From the SE point of Brier Island, rocky ledges, some of which dry, extend to Gull Rock, 1.8m high, about 1.5 miles SSW. A detached 5.5m patch lies about 0.2 mile SSW of Gull Rock. A lighted bell buoy is moored nearly 0.5 mile S of Gull Rock.

Brier Island (Southwest Ledge), with a least depth of 4.1m, lies about 2 miles SW of Gull Rock. The ledge is surrounded by a bank with depths of less than 18.3m extending nearly 0.8 mile S and 0.8 mile NE from it. A heavy tide rip extends about 1.5 miles SSW from the ledge and NE to Gull Rock. A lighted whistle buoy is moored about 1.8 miles SW of the ledge.

McDormand Patch (44°05'N., 66°29'W.), a rock with a depth of 24m, lies 9.5 miles SSW of Whipple Point.

Anchorage.—Suitable anchorage can be found in almost any part of St. Marys Bay, except with SW winds, when it is necessary to proceed to the head of the bay to obtain good shelter.

Large vessels can anchor in the upper part of the bay and ride out a SW gale, in depths of 18.3 to 21.9m, between **East Sandy Cove** (44°29'N., 66°05'W.) and the mouth of the Sissiboo River.

Vessels of moderate draft can anchor, in 10.1m, about 0.7 mile NNW of the entrance to the Sissiboo River, or in 7.3m, about 0.7 mile N of **Gilbert Point** (44°30'N., 65°57'W.).

St. Marys Bay—East Side

1.78 The E side of the bay, from Cape St. Mary to close S of the village of **Meteghan** (44°12'N., 66°10'W.), about 7 miles NE, is from 21.3 to 30.5m high and free from off-lying dangers. At Meteghan, there is an L-shaped breakwater, 293m long, constructed of large boulders and marked by a light. East of the breakwater, there is an L-shaped public wharf used pri-

Brier Island Light

marily by fishing vessels. The wharf is about 213m long with a 152m long outer end that has depths of 2.1 to 4.2m alongside. A lighted bell buoy is moored nearly 1.5 miles WNW of the government wharf.

Grand Passage Light on North Point

A patent slip and marine railway, with a lifting capacity of 600 tons, and a machine shop for minor repairs, are situated close E of the public pier. The slip can accommodate vessels with maximum dimensions of 53m in length, 12m width, and 5.2m draft. It is generally used by vessels about 40m in long.

About 2 miles farther NNE, a small harbor formed by two breakwaters lies at the mouth of the Meteghan River. In the sheltered area, there is a government wharf with a depth of 6.1m at the outer end at HW.

From Meteghan to Church Point, about 8.5 miles N, houses and villages are scattered along this section of coast. Rocky shoals, with depths of 2.7 to 9.1m, extend in places from 0.25 mile to about 1.8 miles W from the coast. A lighted bell buoy is moored about 1 mile WNW of the breakwater at Saulnierville, which is situated about 2.5 miles N of the Meteghan River.

1.79 At **Saulnierville** (44°16'N., 66°08'W.), a public mole extends N for 210m. The inside face of the wharf is 100m long, with alongside depths of 2.1 to 3.7m. A ligth is shown from the head of the breakwater. A lighted buoy is moored 0.8 mile WNW of the mole.

At **Church Point** (44°20'N., 66°08'W.), a conspicuous steeple rises from a large Roman Catholic church near the point.

Shoals and mud flats, which dry in places, extend up to 0.75 mile offshore between Church Point and Cape Firmain, about 6 miles NE. A rock, with a depth of 14.1m, lies about 1.8 miles W of Church Point. A privately-maintained light is exhibited about 1.5 miles SW of Cape Firmain at Belliveau Cove.

The **Sissiboo River** (44°27'N., 66°01'W.), a very shoal estuary, can only be entered by mariners with local knowledge a short time before HW. Sissiboo Light is shown from the S side of the entrance to the river. A dredged and buoyed channel, with a least depth of 1.1m in mid-channel in 1992, leads to the wharf at the village of Weymouth North, about 0.8 mile above the bar. The L-shaped wharf here has an outer face 85m long,

with a least depth of 2.1m alongside. Pilotage is not compulsory; however, a local pilot is available. A lighted bell buoy is moored about 1.5 miles NW of Sissiboo Light.

The coast between the Sissiboo River and Gilbert Point, about 4 miles NE, is fronted by a shore bank, with depths of less than 5.5m, extending about 0.5 mile offshore.

St. Mary Shoal, an extensive bank with depths of less than 5.5m and a least depth of 2.9m, lies on the NW side of the bank opposite Gilbert Point.

St. Marys Bay—West Side

1.80 The SE coast of Brier Island is steep-to from its SE extremity to **South Point** (44°15'N., 66°21'W.), about 2 miles N. A lighted bell buoy is moored nearly 1 mile S of South Point and marks the fairway of the S approach to Grand Passage.

Grand Passage

1.81 This passage, between Brier Island and Long Island, has a depth of 11m in the fairway. The tidal currents, both ebb and flood, attain a rate of 5 or 6 knots and constitute the principal difficulty in the navigation of the passage. Slack water occurs 57 minutes and 1 hour 18 minutes, respectively, before the times of HW and LW at Saint John, New Brunswick.

Peter Island lies on the W side of the S entrance. The channel between the island and the W shore has a depth of 4.9m. A light is shown from a white eight-sided tower, 12m high, on the island. A drying reef extends about 0.1 mile N of the island.

The village of Freeport lies at the head of a bay, dry at LW, on the E side of the passage. A breakwater on the S side of the bay protects a government wharf, with a depth of 6.7m at the outer end at HW. A government pier extends from the N entrance point of the bay to a depth of 5.2m at HW.

The village of Westport lies on the SW side of Grand Passage. An L-shaped government wharf at Westport has a depth of 4.6m at the outer end. Westport Harbor is open through the year and provides anchorage for small vessels, ESE of the pier head, in 9.1 to 12.8m, sand, about 0.4 mile ENE of the Baptist Church in the village. Vessels using the anchorage are recommended to moor with a swivel to avoid fouling their cables due to the eddies.

Grand Passage Light is shown from a white tower on **North Point** (44°17'N., 66°21'W.), the N extremity of Brier Island, and the W entrance point for the N entrance to the passage.

Passage Shoal, marked N by a buoy and with a depth of 2.6m, lies in the middle of the passage, about 0.4 mile N of Peter Island. There is a channel on either side of this shoal.

Cow Ledge, which dries, and Bald Rock lie near the shore of Long Island, on the E side of the N entrance to the passage. Shoals extend N of Cow Ledge and terminate in Cow Ledge Shoal, with a depth of 5m, about 0.3 mile SE of North Point. The latter shoal is marked NW by a lighted bell buoy.

Directions.—Vessels approaching Grand Passage from S should steer to pass E of Peter Island and Passage Shoal. After clearing Passage Shoal, steer in mid-channel until W of Bald Rock, where Peter Island Light, bearing 180° and open the breadth of Peter Island W of Sand Point, leads in mid-channel W of Cow Ledge and Cow Ledge Shoal and E of the bank extending about 275m NNE of North Point.

Vessels approaching the passage from the N should reverse the above directions.

Caution.—Mariners without local knowledge should exercise caution in navigating Grand Passage due to the strong tidal currents and eddies.

Submarine cables lies between Sand Point (Long Island) and Brier Island. Another cable extends from Sand Point (Long Island) to Peter Island, then to South Point. An underwater turbine is situated between Sand Point (Long Island) and Peter Island.

1.82 The E coast of Long Island is steep-to from **Dartmouth Point** (44°15'N., 66°20'W.), the S extremity of Long Island, to Petit Passage. The bold SE shore of Digby Neck, from Petit Passage to abreast St. Mary Shoal, is steep-to and indented by three coves. At Little River Cove, a wharf extends 46m to a depth of 3m and is sheltered by a breakwater. At Mink Cove, about 1.5 miles NE of Little River Cove, a fish meal plant is visible from seaward.

In East Sandy Cove, the channel to the wharf is buoyed and dredged and had a least depth of 4m. The channel leads to a T-shaped concrete wharf with an outer face 110m long and a depth of 4.3m alongside most of its length. A depth of 2.8m is located close off the S corner. The inside face is 76m long, with a least depth of 3m alongside. The dredged area extends 55m off the outer face of the pier. A wooden wharf, from which a light is exhibited on its outer end, lies SE of the concrete wharf.

Petit Passage

1.83 This passage between Long Island and Digby Neck is almost straight, with a least width of about 410m, and is the shortest route from Cape Fourchu to Saint John. The land on either side of the passage is high, rising to an elevation of 73m on the E side. The passage has a least charted depth of 11m. The navigable channel narrows to a little more than 0.1 mile between **Eddy Point** (44°24'N., 66°13'W.), on the W side, at the middle of the passage, and the drying bank extending about 0.1 mile from the opposite shore.

Tides—Currents.—The direction of the tidal currents in the passage is N with a rising tide and S with a falling tide. The maximum flood current is 8 knots, while the maximum ebb current is 7 knots. Slack water occurs 1 hour and 1 hour 3 minutes, respectively, before the time of HW and LW at Saint John.

A ledge, which dries 3m, extends about 0.1 mile S of the E point of the S entrance of the passage. A lighted bell buoy is moored about 0.2 mile S of the same point.

The village of Tiverton, close W of Eddy Point, has a government wharf, 152m long and 12m wide at the outer face, with a depth of 5.5m alongside. Tiverton Light is shown from a skeleton tower, 3m high, near the outer end of the wharf.

At East Ferry, on the opposite side of the passage from Tiverton, there is a wharf, 73m long, and 11m wide at the outer face, with a depth of about 4.9m alongside the outer face. There is a breakwater N of the wharf; a submerged rock lies about 0.1 mile SW of the breakwater.

Overhead power cables, with a vertical clearance 43m, cross

Petit Passage from Tiverton to East Ferry.

Caution.—Due to submarine cables, anchorage is prohibted in Petit Passage.

Boars Head (44°24'N., 66°13'W.), marked by a light, forms the W side of the N entrance to the passage. A 2.1m shoal, marked by a ripple during the strength of the tide, lies about 0.3 mile N of the head.

A radar tower, with an elevation of 75m, is situated about 1 mile SSW of Boars Head Light. A microwave tower is situated close NW of the radar tower.

Brier Island to Annapolis Basin

1.84 Lighthouse Cove (44°15'N., 66°24'W.), on the W side of Brier Island, lies about 0.8 mile N of Whipple Point, the SW extremity of the island. Brier Island Light, previously described in paragraph 1.77, is shown from the S entrance point of the cove. A rock, which dries 1.2m, lies about 0.3 mile offshore and 0.4 mile N of the light.

The NW coast of Brier Island, from Lighthouse Cove to North Point, the N extremity of the island, is fringed with rocks and the 9.1m curve extends 0.25 mile from the shore in places.

Traffic Separation Scheme.—For vessels entering or departing from the Bay of Fundy, there is a compulsory traffic separation scheme about 11 miles NNW of Brier Island.

Caution.—Northwest Ledge, an extensive shoal bank, lies 3 miles NW of Brier Island. Northwest Rock, its shallowest spot, with a depth of 2.6m near the N end, lies about 3.3 miles NW of North Point. A buoy is moored about 0.3 mile N of this rock. Beatson Rocks, each with a depth of 4.7m, are located in the SW part of Northwest Ledge, about 1 mile SW of Northwest Rock. Frenchmans Elbow, with a least depth of 9.6m, lies about 1 mile SE of Northwest Rock. There are heavy tide rips over the above dangers and also over the uneven ground between them.

A lighted whistle buoy is moored nearly 0.5 mile SW of Beatson Rocks.

North Point, in line bearing 134° with Mourilyans Mark, a large granite boulder on Long Island, leads NE of Northwest Ledge.

Moore Ledge (Moores Ledge), with a depth of 20.1m, over which there is a heavy tide rip, lies about 3.3 miles N of North Point.

Tidal currents set over Northwest Ledge with a maximum velocity of about 4 knots, setting N when the tide is rising in Grand Passage, and S when the tide is falling.

1.85 The NW coasts of Long Island and Digby Neck, from Grand Passage to **Gullivers Head** (Gulliver Point) (44°37'N., 65°56'W.), about 27 miles NE, ares bold, wooded, and free of off-lying dangers. The coastal hills increase in elevation from about 46m near the S end of Long Island to over 122m near Gullivers Head.

Sandy Cove, about 7 miles NE of Petit Passage, affords good shelter for small craft from S winds. A rock, with a depth of 1.8m, lies about 0.3 mile NNE of the W entrance point of the cove. On the E side of the cove there is a mole, 88m long with a depth at the outer end of 5.5m at HW. A gridiron is situated alongside the mole.

Trout Cove, about 4.5 miles NE of Sandy Cove, has a small drying basin formed by breakwaters at its head. Centreville Light is shown from the W entrance to Trout Cove. A lighted bell buoy is moored nearly 0.5 mile NW of the W entrance.

Gullivers Cove (Gulliver Cove), close E of Gullivers Head, affords good shelter from S winds in depths of 12 to 14.6m.

From Gullivers Head to Prim Point, about 7.5 miles NE, the coast is bold with the coastal hills rising to elevations over 122m.

Tides—Currents.—Between Grand Passage and Prim Point the tidal currents set parallel to the coast. The tidal currents have a velocity of 2 to 2.5 knots S of Gullivers Head, and a velocity from 1.5 to 2 knots between Gullivers Head and Prim Point.

Annapolis Basin

1.86 Annapolis Basin, the SW portion of the estuary of the Annapolis River, is protected and open throughout the year; however, gales from the N and NW raise a heavy sea, which when drift ice is present, may damage a vessel. The basin affords good anchorage to deep-draft vessels. The harbor of Digby is located in the SW part of the basin.

Digby Gut (44°41'N., 65°46'W.), a deep passage about 0.4 mile wide between high steep shores, leads to Annapolis Basin. **Prim Point** (44°42'N., 65°47'W.), the W entrance point of Digby Gut, is marked by a light shown from a white tower, with red vertical stripes, on the corner of a square building. Digby Gut Light is shown from a skeleton tower on the E side of the entrance. A lighted whistle buoy is moored about 1.3 miles NNE of Prim Point.

Man of War Rock, with a depth of 6.7m, lies about 0.1 mile from the W side of the passage, about 1 mile SE of Prim Point. Close S of Man of War Rock, banks extending about 0.1 mile from either shore reduce the width of the passage.

At Victoria Beach, a light is shown near a drying basin formed by two breakwaters, each about 100m long. A large fish processing plant stands near the N breakwater. There is a groin, 61m long, close N of the N breakwater.

At Rattling Beach, about 1 mile farther S and on the W side of the passage, there is the Marine Atlantic ferry terminal and from it is operated a regular ferry service to Saint John. The berth is 140m long with a least depth of 4.9m alongside. A ro-ro ramp is situated at the N end. A privately-maintained light is exhibited at each end of the berth.

Tides—Currents.—The tidal rise at Digby is 8.2m at MHWS, and 7.1m at MHWN.

In the Bay of Fundy, across the entrance to Digby Gut, the tidal currents run parallel to the shore, with a maximum velocity of about 2.5 knots, turning inshore a little before, and offshore a little after local HW and LW. The current runs NE with a rising tide and SW with a falling tide.

In Digby Gut, the currents have a maximum velocity of about 5 knots, turning approximately at local HW and LW. Both currents cause whirlpools and eddies, which are particularly strong on the W side of the channel, in the vicinity of Man of War Rock. Turners Eddy, over a shoal with a depth of 7.9m, lies about 0.7 mile SE of Prim Point.

A SW swell in the Bay of Fundy will propagate into Digby Gut; when combined with the ebb current, large waves will be

encountered on the seaward side of Man of War Rock. This effect is reported to be at its greatest about 2 hours 30 minutes before LW.

Pilotage.—Pilotage is not compulsory. Local pilots for Digby and the Annapolis River are available day and night, and should be applied for through the shipping agent or by radiotelephone to the Pilotage Commission at Digby.

Pilot usually meets vessels at the entrance to Digby. As long as a 12-hour notice is given, no waiting is experienced.

Annapolis Basin is occupied by extensive shoals with depths of less than 1.8m in the S part, and the inner or NE part is filled with shoals through which flows the channel of the Annapolis River. Port Wade, on the NW side of the basin, has a wharf in a state of disrepair near the village.

1.87 **Digby** (44°38'N., 65°46'W.) (World Port Index No. 6470) lies in the SW part of Annapolis Basin. The local industries are commercial fishing, lumbering, and farming. The ferry terminal, located approximately 4,000m N of the fishing port, operates a ferry on car, passenger, truck, Ro-ro ferry service to Saint John, New Brunswick. The fishing port, located, on the shore front of Digby town, consists of a single F-shaped pier of which only the main stem is used for commercial traffic.

Information on the port facilities available at Digby is given in the table titled **Digby—Berth Information**.

Pilotage.—Pilotage is not compulsory but available; VHF channel 16 is used.

Contact Information.—See the table titled **Digby Harbor Port Association—Contact Information**.

Digby Harbor Port Association—Contact Information	
Port Authority	
Telephone	1-902-245-1867
Facsimile	1-902-245-2194
E-mail	digbyharbour@ns.aliantzinc.ca

Anchorage.—There is good anchorage for small vessels, in depths of 11 to 14.6m, about 1 mile N of the wharves at Digby. There is anchorage nearer to the pier in a depth of 7.0m. Deep-draft vessels can anchor, in depths of 16.5 to 18.3m, in the central part of Annapolis Basin.

1.88 The Annapolis River is navigable by vessels of moderate draft, with local knowledge, as far as Annapolis Royal, about 5 miles above **Goat Island** (44°42'N., 65°37'W.). The latter island, 7.6m high and wooded, lies nearly in the middle of the river entrance, and on the S side of the principal channel. An extensive shoal, which dries in places, extends nearly 4 miles SW from the island. The channel leading to the river entrance lies along the N side of this shoal, and is marked by buoys. Schafner Point, on the N side of the river entrance, is marked by a light.

Annapolis Royal (44°45'N., 65°31'W.) has several wharves which dry alongside at LW. A causeway and dam cross the river close above Annapolis Royal. The public wharf, which dries, is 117m long; vessels up to 110m long, with a maximum draft of 10.3m, can be accommodated. The ballasted wharf is currently unusable for vessels due to shallow water alongside. Vessels may anchor about 1 mile below the town, in a depth of about 11m; however, because of the tidal eddies, it is a poor anchorage.

Caution.—Changes in currents in the Annapolis River may occur without notice due to the operation of turbines and sluice gates at the hydroelectric power plant at Annapolis Royal. Off the power station, a current of up to 4 knots can be expected. Pilot is available and recommended.

Annapolis Royal Wharf Association—Contact Information	
Port Authority	
Telephone	902-665-4083
Facsimile	902-665-2878

Annapolis Basin to Minas Channel

1.89 The coast from Digby Gut to Chute Cove (44°55'N., 65°21'W.), about 22 miles NE, is free of off-lying dangers. The ridge, separating the coast from the valley of the Annapolis River, rises to heights of 122 to 213m, and is partially covered with trees.

Parkers Cove, about 12.5 miles NE of Digby Gap, has an L-shaped wharf protected by two breakwaters. The E and larger of which is curved and 160m long. A light is shown from a framework tower, 7m high, from the head of the E breakwater. Two rocks, which dry, lie about 275m NW and 0.4 mile NE of the outer end of the E breakwater.

At Chute Cove, about 9.5 miles NE of Parkers Cove, there is a small boat harbor formed by breakwaters. Hampton Light is shown close E of the W breakwater. Small vessels can anchor, in 8.2m, mud, about 0.4 mile NW of the light with offshore winds.

Tidal currents between Parkers Cove and Chute Cove, with a velocity of 1.75 to 2 knots, turn a little before local HW and LW. The current runs to the NE on the flood tide and to the SW on the ebb tide. In the offing, the tides turn about 30 minutes later.

Ste. Croix Bay, about 1.5 miles NE of Chute Cove, affords good anchorage, in a depth of 7.3m, mud, about 0.5 mile NE of the W entrance point of the bay.

Digby—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Ferry Berth	94m	4.9m	Ro/Pax. Berthing length of 125m (including dolphins).
Main Pier	100m	3.0m	Fishing vessels, breakbulk, and bunkers.

At Port Lorne, a small inlet about 4.5 miles NE of Chute Cove, there is a wharf, 131m long, extending to a depth of 5.5m at HW. A light is shown close E of the inlet. Anchorage can be taken, in 11 to 12.8m, 0.25 to 0.5 mile N of the wharf.

1.90 Port George (45°00'N., 65°09'W.) lies about 6 miles NE of Port Lorne; drying ledges extend about 275m offshore. Anchorage can be taken, in 9.1m, about 1 mile NE of Port George.

Caution.—A submarine telecommunications cable extends NW from the shore about 2 miles ENE from Port George to the NW shore of the Bay of Fundy. The cable lies about 0.5 mile NE of the suggested anchorage described above.

Margaretsville Light

Margaretsville, one of the principal villages on the SE side of the Bay of Fundy, lies about 4.5 miles NE of Port George. There is a breakwater wharf, 70m long with depths of 3 to 4m along the outer 30m at HW. A light is shown from Margaretsville Point, close W of the village.

Margaretsville Bank, with a least depth of 0.3m, lies parallel to and about 0.5 mile from the shore; the shallowest spot lies about 0.8 mile NE of Margaretsville Point. Between the W extremity of the bank and the breakwater there is a channel with a depth of 5.5m. Vessels anchor between the bank and the shore, in a depth of 10.1m, clay bottom.

Morden (45°06'N., 64°57'W.), about 6 miles NE of Margaretsville, can be recognized by its square church tower. There is a government wharf, 91m long, with a depth of 9.1m at the outer end at HW. A 6.4m patch, marked by a tide rip, lies about 0.8 mile NW of the church. Anchorage can be taken, in 11m, about 1 mile NNE of the church.

A tower, marked by red aircraft obstruction lights, is conspicuous about 4 miles ESE of Morden. A high steep reddish cliff lies about 1 mile NE of Morden.

Minas Channel

1.91 Minas Channel, the approach to Minas Basin, is entered between Morden and **Cape Chignecto** (45°20'N., 64°57'W.), about 13.5 miles N. The latter cape is a steep-to bold conspicuous headland. The land near the cape rises rapidly to over 213m.

Caution.—A wreck, with a least known depth of 14.3m, has been reported (2009) to lie 1.6 miles N of Cape Chignecto and 0.4 mile W of the coast. A rock, with a least known depth of 12m, lies 0.5 mile SE of Cape Chignecto.

Ile Haute (45°15'N., 65°00'W.), 97.5m high, lies about 5 miles SSW of Cape Chignecto. The island, marked by a light shown from aframework tower, 12m high, on its highest point, is wooded and bordered by cliffs except at the E and W ends. The light may be obscured when the mariner is closer than 2.5 miles. Its shores are clear of dangers except at its E end, where a rocky spit extends 0.4 mile ENE. There are tide rips close N and S of the island. There is an anchorage, in 21.9m, about 0.3 mile N of the E end of the island. A 23m depth has been reported in an area about 2 miles NNW of the light.

1.92 North shore.—Advocate Bay (45°20'N., 64°47'W.), between Cape Chignecto and Cape D'Or, about 7.5 miles ESE, affords good anchorage in depths less than 28m with N winds, but vessels using it should exercise caution if the wind shifts to the S, when it frequently veers to the W and increases in force. Advocate Harbour, on the NE side of the bay, is muddy, dries, and is protected from the S by a natural wall of stones, 3m high. Near the E end of the wall, there is an entrance through which small vessels can enter at HW. A light is shown from the S side of the entrance to the harbor.

Cape D'Or (45°18'N., 64°46'W.), low and green, is the S extremity of a ridge, 152m high, separated from the promontory to the N by a deep valley. The W side of this ridge, N of the cape, is faced by cliffs, 61m high.

A light is shown from a white square tower on the corner of a white square building on the cape. On the flood tidal current, there is a heavy tide rip close S of the cape.

Cape D'Or and Cape D'Or Light

1.93 South shore.—The S shore of Minas Channel from Morden to **Shoal Point** (45°13'N., 64°35'W.), about 17 miles NE, is bordered by a shorebank, with depths of less than 5.5m, extending up to 0.5 mile offshore in places.

At Ogilvie, about 5 miles NE of Morden, there is a government wharf, 84m long, with a depth of 7m at the outer end at HW. A light is shown at the settlement of Harbourville, about 1.5 miles NE.

Black Rock, which dries 5.2m, lies about 2.5 miles ENE of Harbourville. A light is shown near the settlement of Black Rock, close S of the rock.

Cape D'Or Light

At Halls Harbor, marked by a light and lying about 6.5 miles ENE of Black Rock, there is a breakwater, 116m long, which dries at LW. There are depths of 4.6 to 5.5m alongside at the outer end at HW.

At Shoal Point, about 1.3 miles E, rocks extend about 0.3 mile N.

At Baxter Harbour, about 3 miles farther E, there is a government wharf, 72m long, with a depth of 7.9m at the outer end at HW. A conspicuous tower, at an elevation of 309m and marked by red aircraft obstruction lights, is situated about 5 miles ESE of Baxter Harbour.

Cape Split, the E entrance point of Minas Basin, lies about 6 miles NNE of Baxter Harbour. The intervening coast forms Scots Bay, which dries at its head. Cape Split is described in paragraph 1.95.

Entrance to Minas Basin

1.94 Minas Basin is entered between Cape Spencer and Cape Split, about 9 miles E.

Cape Spencer (45°19'N., 64°42'W.), about 3.3 miles ENE of Cape D'Or, has a conspicuous sugarloaf rock, 6.1m high, which is isolated from the remainder of the cape at HW. A drying rock lies about 90m E of the cape.

Spencer Island, 55m high and wooded, lies about 1 mile NE of Cape Spencer and is separated from the mainland by a passage with a depth of 1.8m. A settlement, known as Spencers Island, is situated on the mainland, about 1.5 miles NW of the island. There is an anchorage, in 9.1m, about 0.8 mile N of the island.

Cape Sharp (45°22'N., 64°24'W.), about 7 miles ESE of Port Greville, is surmounted by a remarkable sharp hill, 116.7m high, from which its name is derived. Black Rock, 4.6m high, lies nearly 0.5 mile offshore, about 0.8 mile W of Cape Sharp. A light is shown from the cape. An underwater turbine, with a known depth of 13.8m, lies about 1.4 miles W of Cape Sharp Light.

Cape Sharp Light

1.95 **Cape Split** (45°20'N., 64°30'W.), on the S side of the entrance to Midas Basin, consists of cliffs, 61m high, divided by deep fissures or splits from which its name is derived, and is the termination of a remarkable, tapering promontory, 122m high. A spit, with depths of less than 9.1m, extends about 0.8 mile NW of the cape, with two drying rocks on it, about 0.2 mile and 0.3 mile, respectively, from the cape. During the strength of the tidal currents there is a heavy tide rip over, and a considerable distance NW of, the spit.

Cape Split

Tides—Currents.—The tidal currents along the coast between Chute Cove and Halls Harbor increase in velocity from 2 knots off the former to 3 knots off the latter. As Scots Bay is approached, the velocity of both currents decrease.

From near Cape Chignecto, the E current sets toward Cape D'Or, where it meets an eddy and causes a tide rip which extends about 1 mile S of the cape. With the W current there is an eddy W of the cape.

Around Cape D'Or and Cape Spencer the velocity of both currents is 5 to 6 knots; N of Cape Split, outside the tide rip,

the velocity is 7 to 8 knots.

Anchorage.—In addition to the previously-mentioned anchorages, vessels can anchor, in about 21.9m, from 0.5 to 1 mile from the shore anywhere between Digby Gut and the mouth of Scots Bay. East of Morden, a strong W wind, lasting for more than 6 hours, causes a heavy sea with the first part of the E tidal current, and renders the anchorage bad, especially for small vessels. Strong SW winds make the anchorage uncomfortable for small vessels during the W current.

Vessels waiting for a favorable tide to enter Minas Basin can anchor, in 9.1m, about 0.5 mile from the shore in Greville Bay, which lies between Spencer Island and Port Greville, or they can anchor, in 18.3m, about 1 mile SE of Cape Split, but this anchorage is not recommended during the autumn months, when gales which commence from the E frequently shift to the W. A radar reflector is situated 3.5 miles ESE of Cape Split.

Minas Basin

1.96 Minas Basin, with Cobequid Bay, its E extension, extends about 50 miles E of **Cape Split** (45°20'N., 64°30'W.). The basin has depths of 73m in its entrance and 18.3m in its central part. The estuary of the Avon River, in the SW part of the basin, and Cobequid Bay, at its head, are encumbered by shoals and drying banks.

Ice.—Minas Basin and its approaches, E of Cape D'Or, are ice-covered in average years from about the end of December to the end of March, February being the worst month. The ice in the basin is mainly unnavigable in January and February.

Tides—Currents.—When navigating in Minas Basin, mariners must take into consideration the great rise and fall of the tide. The tidal rise at Parrsboro is 11.3 to 12.5m at neap tides, and 12.7 to 14.2m at spring tides. There is a least depth of approximately 6.7m in the middle of the entrance opposite the light on the breakwater at HWN.

The tidal currents in the middle of the entrance to Minas Basin, N of Cape Split, have a velocity of 7 to 8 knots. In the basin, the velocity is about 3 or 4 knots.

Anchorage.—In moderate weather, vessels can anchor anywhere along the shores of Minas Basin and Cobequid Bay, but off the N shore the bottom is hard. The great rise and fall of tide must be taken into consideration.

Caution.—The various shoals and banks in Minas Basin and Cobequid Bay are composed of loose shifting sand, and their positions can be altered by the strong tidal currents, gales, and the breaking up of the ice in the spring.

1.97 Partridge Island (45°22'N., 64°20'W.), on the N side of the entrance to the basin and about 2 miles E of Cape Sharp, is 81m high and an island only at HW. There are strong tide rips S and SE of the island. A local magnetic anomaly has been experienced in the vicinity of the island.

West Bay (45°22'N., 64°22'W.) is the W part of Parrsboro Roads, the large bay between Cape Sharp and Partridge Island. East Bay is the E part of the bay. Dickson Bar, nearly 1 mile WNW of Partridge Island, is a sandy shoal which dries at extreme LW; a detached shoal bank, with depths of less than 5.5m, extends about 0.8 mile W of Dickson Bar. A small detached shoal, with a least depth of 4m, lies between Dickson Bar and Partridge Island.

There is good anchorage, with local knowledge, in 8.2m, in West Bay, about 0.4 mile and 0.8 mile NE of Cape Sharp, between the detached bank and the shore. There is good anchorage with local knowledge in East Bay, in 7.6m, about 0.1 mile N of the shoal and 0.3 mile ESE of Dickson Bar.

1.98 Parrsboro Harbor (45°23'N., 64°19'W.) at the mouth of the Farrells River (Parrsboro River), is entered between Crane Point, about 0.8 mile NE of Partridge Island, and McLaughlin Bluff, about 1 mile farther ENE. Clarke Head rises to a height of 116m, about 2 miles E of McLaughlin Bluff. A conspicuous light gray cliff, 58m high, lies S of this headland. Lighthouse Bar, which is covered at extreme HW, and a breakwater extend about 0.5 mile NE from close N of Crane Point and shelter the harbor. Parrsboro Light is shown from the breakwater on the W side of the harbor entrance, about 0.1 mile S of the N extremity of Lighthouse Bar. The government wharf lies about 0.1 mile NNW of the N extremity of Lighthouse Bar. The navigation season is from April 1 to December 31. Lumber and pulpwood are exported.

Depths—Limitations.—Owing to the large range of tide, the harbor is accessible by vessels of moderate draft which are capable of taking bottom. In 2009, it was reported that drafts of 4.9m at neaps and 8.5m at springs can be safely carried. There is a least depth of approximately 6.7m in the middle of the entrance opposite the light on the breakwater at HWN.

A public pier with a length of 118m handles general cargo. This pier can accommodate vessels with a maximum draft of 8.5m at HW and 4.9m at LW.

Pilotage.—Pilotage is not compulsory. Local pilots are available and will board vessels off Ile Haute or Spencer Island, if arranged in advance. Entrance to the harbor should not be made without local knowledge.

Anchorage.—Vessels awaiting tide may anchor 2nm SE of Parrsboro Light. Another anchorage with a depth of 18m is located 1 mile SE of Cape Split. Anchoring off Cape Split is not recommended during autumn as E gales will frequently shift to the W.

Minas Basin—North Side

1.99 Moose Island (45°23'N., 64°05'W.), 107m high and thickly wooded, with steep earth cliffs on its S side, lies about 6.5 miles E of Clarke Head.

The shore between the East River and Economy Point, about 8 miles ESE, is composed of high red cliffs. **Brick Kiln** (45°21'N., 63°57'W.) an islet, 15.2m high, lies about 2.5 miles W of Economy Point. Brick Kiln Ledges, the W one of which dries about 3.7m, lie about 0.5 mile S and 0.8 mile SW of the islet.

On the W side of the mouth of the **Bass River** (45°24'N., 63°47'W.), about 5.5 miles ENE of Economy Point, there is a government wharf with a pier head, 58m in length, with a depth of 5.8m along the face at HW.

From the mouth of the Bass River, the N coast trends E for another 18 miles to where the Salmon River empties into the head of the basin. This part of Minas Basin, E of Economy Point, is known as Cobequid Bay. From the Portapique River, about 3 miles E of the Bass River, the head of Cobequid Bay is obstructed by loose shifting sand banks which dry.

Minas Basin—West and South Sides

1.100 Cape Blomidon (45°18'N., 64°20'W.), about 7.5 miles ESE of Cape Split, is 174m high and steep-to. Pereau Creek empties into the basin about 4.5 miles S of Cape Blomidon. A conspicuous radio tower, at an elevation of 310m and marked with red aircraft obstruction lights, is situated about 0.8 mile NW of the mouth of the creek. At the mouth of Pereau Creek there is a wharf, 30m long, with a depth of 3m along the W side at HW.

The village of Kingsport lies about 0.5 mile SW of **Longspell Point** (45°10'N., 64°21'W.), on the N side of the entrance to Habitant Creek. The navigation season is from March 1 to January 15.

The government wharf at Kingsport is about 158m long, with a berth 126m long and a depth of 4.3 to 6.7m alongside at HW; the outer end of this wharf was damaged in a storm and is not useable. There is good anchorage, in 9.1m, about 0.8 mile N of the island.

The Cornwallis River is entered between Starrs Point, about 2 miles S of Kingsport, and Long Island Head. Wolfville, about 2 miles S of Starrs Point, has a small basin, but the wharves are in a state of disrepair.

1.101 Port Williams (45°05'N., 64°25'W.) lies on the N side of the Cornwallis River, about 2 miles W of Wolfville. A public wharf, 82m long, which dries at LW, lies on the N side of the river just below the highway bridge. A vessel bed alongside the wharf is 102m long, 12.3m wide, with a depth of about 8.5m at HW. A fertilizer plant is situated on the wharf. This wharf was closed to vessels because of the poor condition of the vessel bed. The navigation season is from April 1 to January 15. Pilotage is not compulsory; local pilots are available. The pilot will board at Cross Bar Shoal Lighted Bell Buoy in Minas Basin or, late in the navigation season, off Digby.

Horton Bluff Light

The Avon River

1.102 The Avon River is entered between **Horton Bluff** (45°07'N., 64°14'W.) and Indian Point, about 1.5 miles NE. Boot Island, 13.7m high, lies about 2.5 miles NW of Horton Bluff. The river bed dries about 5 miles above its mouth, but because of the large tides, amounting to over 12.8m at neaps, the river is navigable to Windsor, about 8 miles from the mouth. Only mariners with local knowledge should attempt to navigate the river. Hantsport is situated on the W bank of the river, about 3.3 miles upstream from Horton Bluff. The navigation season is from April 1 to December 31.

Western Bar (45°11'N., 64°15'W.), which dries about 5.2m, composed of shifting sand, lies on an extensive bank extending about 4 miles N from Boot Island. Middle Ground, which dries 6.7m, lies on the E side of the channel in the approaches to the river. Cross Bar, with a depth of less than 0.9m and composed of shifting sand, lies near the N end of Middle Ground.

Aspect.—A lighted bell buoy is moored about 4.5 miles N of Boot Island. Range lights are exhibited from Horton Bluff, on the W side of the Avon River.

Anchorage.—There is good anchorage for small vessels off the mouth of the Avon River, in 8.2m, about 1.5 miles NNW of Horton Bluff. It was reported that anchorage can be obtained, in about 12.8m, about 0.5 mile NE of Horton Bluff.

Caution.—Isolated depths as little as 2m exist close to the Horton Bluff leading line, which passes between Western Bar and Eastern Bar (Middle Ground).

1.103 Hantsport (45°04'N., 64°10'W.) is a tidal port. Vessels arrive and depart on a suitable tide; vessels usually arrive in the vicinity of Cross Bar Shoal 4 hours before HW. A vessel, with a draft of 9.8m, has used the port, although vessels are usually restricted to a maximum draft of 7.6m. Gypsum and pulp products are exported. Fertilizer is imported.

Depths—Limitations.—The Public Wharf is 137m long, with a depth of 4.9m alongside.

Close N of the Public Wharf is the Fundy Gypsum Company Wharf, with a large conspicuous gray warehouse. The wharf is 152m long and dries 4m alongside. There is no vessel bed at this wharf. Vessels dock 3 hours before HW and depart at HW on the same tide. The wharf is equipped with conveyors capable of loading about 20,000 tons of ore to a vessel during the same time. Between the above two wharves is a small wharf used by small craft and tugs.

Pilotage.—Pilotage is not compulsory, but recommended for mariners without local knowledge. Pilots and tugs are available through the Fundy Gypsum Company. The company maintains a listening watch on VHF channel 7A. Vessels normally arrive in the vicinity of Cross Bar Shoal 4 hours before HW.

1.104 Windsor (45°00'N., 64°08'W.) (World Port Index No. 6500), on the Avon River about 5.5 miles further upstream from Hantsport, has a wharf operated by a fertilizer company situated on the St. Croix River near the town. This wharf has a berthing length of 91.3m, with a depth alongside of 6.4 to 7.6m at HW.

1.105 Walton Harbor (45°14'N., 64°01'W.), in the mouth of the Walton River, about 11 miles NE of the entrance to the Avon River, is a tidal harbor which dries at LW. A tower, 62.5m high, is conspicuous in the village of Walton on the E side of the harbor. An abandoned light tower is situated on the E side of the entrance to the river. The harbor is open from April 1 to December 1.

The government wharf has a berthing length of 107m and a depth of 4.6 to 7.3m alongside at HW. The ruins of a gypsum wharf, 84m long, extend from the public wharf and are reported to cover at HW.

Anchorage can be taken, in about 12.8m, 3 miles NW of the abandoned light.

The Hogsback, a sand bank about 1.8 miles long in an E-W direction, the central part of which dries, lies about 2 miles offshore between the mouths of the Avon River and the Walton River. Depths of less than 5.5m cover this narrow sandbank.

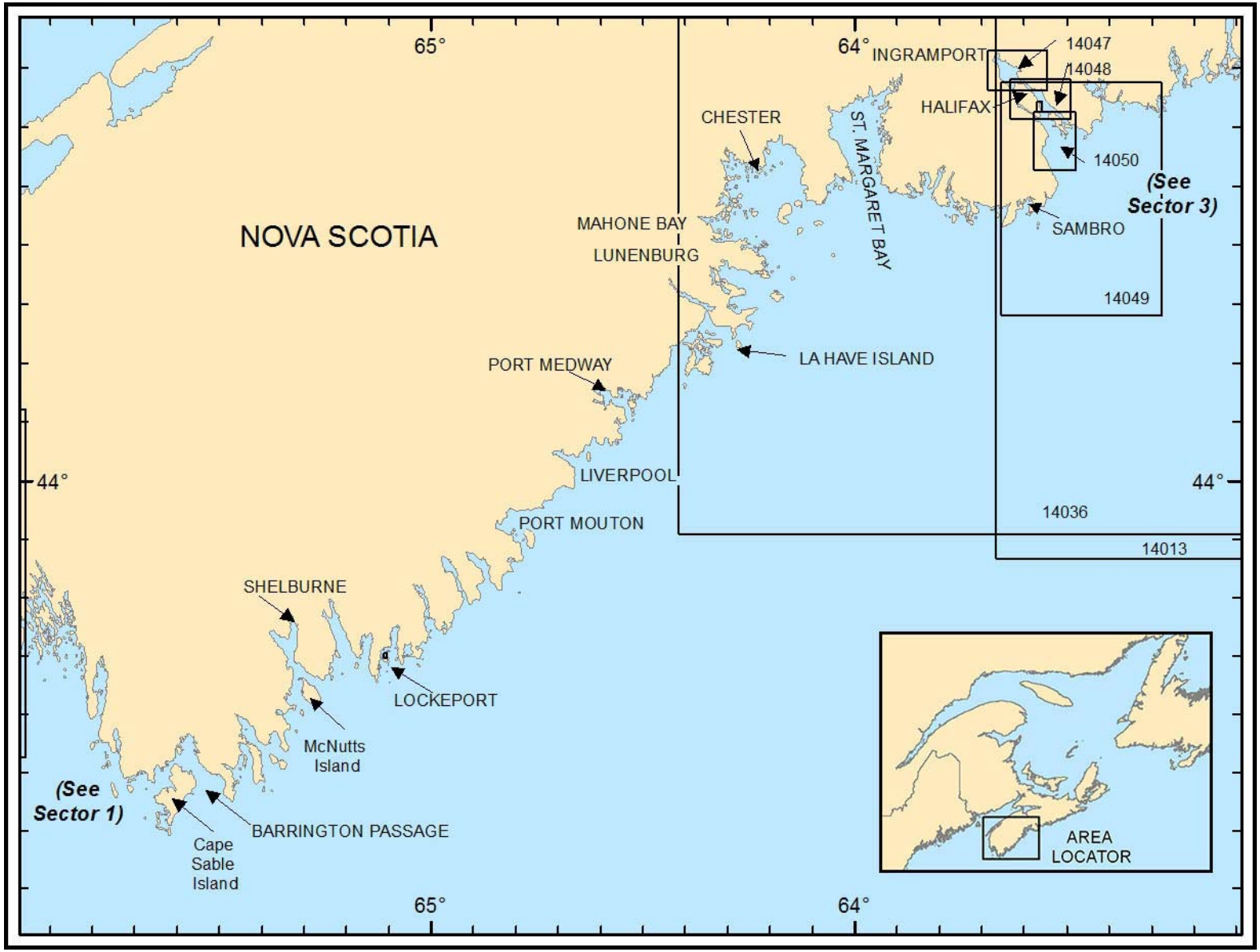
1.106 Cape Tenny (45°17'N., 63°53'W.), about 6 miles NE of Walton Harbor, is the W entrance point of the Cape Tenny River. A wharf, on the W side of the river entrance, is 82.3m long, with a pier head 42.7m in length. There is a depth of 5.5 to 6.1m along the face at HW.

Burntcoat Head (45°19'N., 63°49'W.), 33.5m high and prominently red, lies about 3.5 miles farther NE from Cape Tenny. In the vicinity of Burntcoat Head, the tide rises 13.5m at neaps to 15.5m at spring tides.

Lower Selma, about 10 miles E of Burntcoat Head, has a public wharf, 69m long and 6.1m wide, with depths of 1.2 to 2.1m at the outer end at HW. A rock construction extends 50m from the end of the pier.

Salter Head (45°20'N., 63°32'W.), 14m high, is the W entrance point of the Shubenacadie River. The village of Maitland, about 2 miles SE of Salter Head, has a government wharf, with a depth of 6.7m at HW alongside its outer face, which is 17.8m long. T

The Shubenacadie River is navigable by boats at LW for about 13 miles to within 2 miles of the town of Shubenacadie.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **2** — CHART INFORMATION

SECTOR 2

NOVA SCOTIA—SOUTHEAST COAST—CAPE SABLE TO PENNANT POINT

Plan.—This sector describes the SE coast of Nova Scotia from Cape Sable, the W entrance point of Barrington Bay, to Pennant Point, the W entrance point of Sambro Harbour. The arrangement of the sector is from SW to NE.

Note.—See paragraph 3.59 and paragraph 3.60 for a description of the Nova Scotia Banks.

General Remarks

2.1 Winds—Weather.—In consequence of the frequency with which depressions pass near to or across Nova Scotia, winds are variable. At sea, in autumn and winter, they blow considerably more often from about W and NW than from other directions; in spring and summer they blow more often from the SW quadrant than from any other.

In winter, fog and low visibility occur at sea on 2 to 4 days a month, but during the summer it is frequent and often persistent. Periods of 10 to 14 days a month occur in May to August, and from 5 to 10 days in April and September. It is usually sea fog associated with S winds blowing over the cold water that lies between the coast and the Gulf Stream. Low visibility is likely to improve until the wind veers to the W or NW, unless the ship is proceeding toward the Gulf Stream where warmer water and better visibility will be found.

Ice.—The area from Cape Sable to Halifax is ice-free all year except for new and young ice which forms in bays and inlets during cold spells of January and February. This ice soon melts if it is carried out to sea by wind and tidal current, and it never hinders navigation. Local tugs or government ice-breakers are used to open some of the harbors after ice has formed or to maintain a passage into port despite the weather conditions.

Tides—Currents.—The offshore current along the SE coast of Nova Scotia generally sets SW, but it is more or less influenced by the weak and irregular tidal currents, and also by the wind.

Pilotage.—Pilotage for ports in this sector is obtained through the Atlantic Pilotage Authority. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further information.

Regulations.—A whale sanctuary for right whales, an endangered species, is active annually from 1 June 1 to 31 December. All vessels are asked to avoid passage through the area during this period. If passage through this area is required, decrease vessel speed to 10 knots or less. The sanctuary is located in Roseway Basin and is bounded by lines joining the following positions:

a. 43°16'N, 64°55'W.
b. 42°47'N, 64°59'W.
c. 42°39'N, 65°31'W.
d. 42°52'N, 66°05'W.

Barrington Bay

2.2 The coast between Cape Sable, the SW extremity of Nova Scotia, and Baccaro Point, about 7.5 miles NE, recedes to form Barrington Bay.

Baccaro Point (43°27'N., 65°28'W.) is marked by a light shown from a white tower, 12m high. Two radio towers, marked by red obstruction lights, lie about 0.1 mile N of the lighthouse; two domes are conspicuous about 90m farther N. Baccaro Point is reported to be a good radar target at 16 miles, and to be identifiable with the charted feature from the shape and character of the echo at 10 miles under normal conditions.

Baccaro Point Light

Bantam Rocks, awash and over which the sea nearly always breaks, lie near the outer edge of a bank, with depths of less than 11m extending about 1.5 miles SSW of Baccaro Point. A lighted whistle buoy is moored about 0.5 mile SW of the rocks.

Caution.—Brazil Rock, with a depth of 2.1m, lies about 5.5 miles S of Baccaro Point. The sea breaks heavily over the rock in bad weather, but in good weather it is only marked by a tide rip. A lighted whistle buoy is moored about 0.5 mile S of the rock, and about 8 miles ESE of Cape Sable.

Ocean Data Acquisition System (ODAS) buoys are located in the area covered by this sector. ODAS buoys, which vary in size and have no navigation significance, are used for environmental research. These buoys are frequently moved from place to place without notice and should be given a clearance of at least 1 mile.

2.3 Barrington Bay (43°28'N., 65°32'W.) is sheltered W by Cape Sable Island. Donald Head, 4.6m high, lies about 3.5 miles NNE of Cape Sable, on the E side of Cape Sable Island.

A government wharf, on the N side of the head, is 122m long, with a depth of 2.7m at the outer end. Close to the W, there is a fish plant with a small wharf. A light is shown from a mast on the outer end of the breakwater. A fog signal is sounded from a tower situated about 0.2 mile S of the light.

White Knoll Ledge, with a depth of 1.8m, lies about 1.3 miles SSE of Donald Head and breaks only with heavy seas. A rocky shoal, with a depth of 1.2m, lies about 0.4 mile NW of the ledge. Donald Shoal, with a least depth of 3m, lies about 1 mile NNE of White Knoll Lodge.

2.4 **Bulls Head** (43°28'N., 65°34'W.) lies about 1.5 miles NE of Donald Head. Stony Island, 2m high, lies about 0.2 mile SE of Bulls Head, to which it is joined by a stony bank which dries. Stony Island Shoal, with a least depth of 5.2m, lies about 1.5 miles SE of Little Stony Island.

Congress Shoal, with a least depth of 3.3m, lies about 0.7 mile E of Bulls Head. A lighted buoy is moored about 0.2 mile ENE of the shoal.

Tides—Currents.—The tidal rise at Barrington Passage is 2.6m at MHWS, and 2.3m at MHWN.

Strong NW winds lower and SE winds raise the level of water without much effect on the times of the tides in Barrington Bay.

The W tidal current flows strongly past Baccaro Point and over Bantam Rocks, and then towards Stony Island where it divides. The N branch sets N toward the head of Barrington Bay, while the S branch sets to the S along the SE coast of Cape Sable Island towards the cape.

The village of **Barrington Passage** (43°32'N., 65°36'W.) lies about 1 mile N of North East Point, the N extremity of Cape Sable Island. A buoyed channel leads to the settlement N of Cripple Creek, 1.5 miles N of Little Stoney Island.

Anchorage.—Mariners with local knowledge may find temporary anchorage for small vessels, in about 5.5m, about 1.3 miles ENE of North East Point; however, gales from the S and SE send in a heavy sea.

Local knowledge is necessary for vessels proceeding to the anchorage.

Caution.—Construction of a lighted offshore platform is located about 25 miles WSW of Sable Island.

Port La Tour

2.5 **Port La Tour** (43°28'N., 65°26'W.), entered between Baccaro Point and Green Point, about 3 miles NE, is open S and obstructed towards its head by shoals, islets, and rocks. The harbor is only available for small vessels with local knowledge which may find anchorage, in a depth of about 5.5m, E of Johns Island, which is 3 miles N of the entrance.

Depths—Limitations.—At Port La Tour Village, about 3 miles N of Baccaro Point, there is a public pier, 32m long, with a depth of 2.1m at outer end, extending from near the outer end of the W side of a breakwater. The breakwater was extended NW recently and is about 200m long.

At Upper Port La Tour Village, there are two L-shaped public moles of 99m and 122m in length. The E mole has an outer end 46m long with a depth of 2.1m along the inside face, and the W mole has an outer end 23m long, with a depth of 1.8m alongside. The moles enclose a small basin.

Aspect.—Port La Tour Light, exhibited on the breakwater head, and Upper Port La Tour Light, on the breakwater head opposite the E mole, are useful marks.

Anchorage.—With local knowledge, anchorage can be found N of **Ram Island** (43°31'N., 65°26'W.), in depths of 4 to 6m.

2.6 Blanche Island, 4m high, lies with its S extremity about 1 mile SE of Green Point. A drying spit connects the N end of the island to the peninsula NE of Green Point.

Baccaro Outer Ledge (Outer Rock), with a depth of 4.2m, lies nearly 1.5 miles ESE of Baccaro Point. There is a 4.8m patch 0.25 mile NNE of the ledge and a 5.5m patch lying about 0.2 mile SW of the ledge.

South Ledge, a group of rocks, extends to about 1.5 miles E of Baccaro Point. Stone Horse, with a depth of 1.3m and buoyed, lies near the outer edge of this group.

Taylors Rock, 3m high, about 1.5 miles NE of Baccaro Point, is located near the NE edge of North Ledge.

Page Island, 7.9m high, lies nearly 2.8 miles NNE of Baccaro Point, and is joined to the mainland W by islets, ledges, and shoals. Whale Back, a rock above-water and marked by a light, lies about 183m E of the island. A lighted bell buoy is moored about 0.4 mile ESE of the island.

Negro Harbour—Approach

2.7 The approach to Negro Harbour lies between Green Point and **East Point** (43°32'N., 65°21'W.), 9.1m high, about 4.5 miles NE. Cape Negro Island, in two parts, joined by a narrow shingle neck, divides the entrance into two channels, West Entrance and East Entrance. Cape Negro Island Light is shown from the SE end of the island.

2.8 **West entrance.—**Blanche Island, previously described in paragraph 2.6, lies SE of Green Point. The Salvages, a group of rocks, the highest of which is 3m, lies near the E edge of a bank on which there are many rocks above and below-water which extends about 2 miles E of Green Point. **The Salvages Light** (43°28'N., 65°23'W.) is shown from a white rectangular building, 16m high, with a dwelling attached on the highest rock of the group, in the S part of The Salvages. Northeast Rock, awash, about 1.5 miles NNE of the light, is the NE of the group. Other drying rocks lie between The Salvages and Northeast Rock. Shag Rock, 1.8m high, lies about 1 mile WSW of Northeast Rock.

Cape Roseway Light (43°38'N., 65°16'W.), a white eight-sided tower, 15m high, bearing 026° and open SE of Cape Negro, the SE extremity of Cape Negro Island, leads SE of The Salvages.

Triangle Rocks, lying in the West Entrance, are a group of rocks, one of which dries 0.9m. Mackerel Rock, 0.6m high, lies close off the S end of the N part of Cape Negro Island.

Navigation of West Entrance should not be attempted without local knowledge.

2.9 **East entrance.—**Gray Rocks, the highest of which is 2.7m high, lie near the outer end of a bank, with depths of less than 3.7m, extending about 0.7 mile SE from East Point. Foul ground, with drying rocks, extends about 0.5 mile S of East Point.

Budget Rock, with a depth of 0.9m, lies 0.5 mile S of East Point and is joined to Cape Negro Island by a bank, with depths of 6.7m and less. A lighted bell buoy is moored about 0.1 mile ENE of the rock. There are depths of 10.3m N of Budget Rock.

A 4.5m patch lies about 0.4 mile NE of the NW extremity of Cape Negro Island.

The Nubble (NW Spit), composed of shingle and several drying rocks, extends about 0.5 mile WNW from the N point of Cape Negro Island. A lighted buoy is moored off the W extremity of the spit.

Cape Roseway Light

2.10 Northeast Harbour (43°33'N., 65°22'W.), entered between East Point and John Point, about 2 miles WNW, is shallow and obstructed by rocks and shoals. Apple Island, nearly 1 mile NW of East Point and 0.5 mile offshore, is joined to the mainland by a gravel bar. A breach in the bar, opened by storm action, was closed by a timber structure, 183m in length. Grog Rock, which dries 0.3m, lies about 0.2 mile S of Apple Island. Bartletts Ledge, which dries 1.5m, lies about 0.8 mile W of John Point.

At the village of **Ingomar** (43°34'N., 65°22'W.), about 1 mile N of Apple Island, there is an L-shaped government wharf, 80m long, with an outer end 61m long, having depths of 2.1 to 3.4m alongside. A light is shown from a mast on the outer end of the breakwater, situated close to the wharf. A fish plant is situated near the approach road to the wharf.

Caution.—A submarine power cable is laid across East Entrance, from the cove on the N side of Cape Negro Island to Northeast Harbour, passing W and N of Apple Island. Mariners are cautioned not to anchor in the vicinity.

Negro Harbour

2.11 Negro Harbour (43°33'N., 65°25'W.), entered between John Point and **Purgatory Point** (43°32'N., 65°24'W.), nearly 1 mile SW, affords shelter from all winds to small vessels. Shingle Point, about 0.8 mile WNW of John Point, is bordered by a drying flat extending about 0.5 mile S of the point. A lighted buoy marks the outer end of the flat. Islets and shoals obstruct the harbor from 1.5 miles NW of Shingle Point.

The village of **Port Clyde** (43°36'N., 65°28'W.), at the head of the harbor, is reached by a dredged and buoyed channel. Near the village, there is a public wharf 61m long.

The best anchorage, in 6.4m, mud, lies about 1 mile NW of Shingle Point, with Shingle Point bearing 129°, in line with the NE extremity of Cape Negro Island. A patch, with a depth of 3.7m, lies about 0.2 mile N of this position. Good small craft anchorage is reported, in 3m, off the NW side of Big Island, situated 2 miles NW of Shingle Point.

Directions.—Vessels approaching East Entrance should make for **Negro Harbour Lighted Whistle Buoy** (43°31'N., 65°19'W.) and then steer to pass close N of the lighted buoy marking Budget Rock. Then steer to pass S of the 4.5m patch located N of the N end of Cape Negro Island, and continue to a position about 0.1 mile N of the lighted buoy marking the extremity of The Nubble. Then alter course NW, steering in mid-channel, SW of the lighted buoy off Shingle Point, and then steer for the anchorage.

Negro Harbour to Shelburne Harbour

2.12 The coast from East Point to Cape Roseway, about 6.5 miles NE, is indented by three open bights. Gull Rock, an islet 9.5m high, about 2.5 miles NNE of East Point, lies on the outer end of a bank, with depths of less than 8.2m, which extends about 0.8 mile ESE from the mainland. A rock, which dries 1.5m, lies over 0.2 mile SSW of the islet.

Grey Island, 19.8m high and wooded, lies about 1.8 miles NNE of Gull Rock. From the N point of the island, a drying bank extends to a point on the mainland about 0.8 mile W. A bank, with a depth of 2.4m, extends about 0.4 mile S of the island.

The channel to **Shelburne Harbour** (43°45'N., 65°19'W.), known as Eastern Way, is entered between **Cape Roseway** (43°37'N., 65°16'W.), the SE extremity of McNutts Island, and Government Point, about 2.3 miles N. Western Way, a shallow channel which dries in places, lies W of McNutts Island.

Cape Roseway is a remarkable white granite cliff, and is steep-to. A light is shown from an octagonal concrete tower on the headland. A bank, with depths of 3.7 to 5.8m, extends about 1 mile SSE of the S extremity of McNutts Island. Jig Rock, with a depth of 2.1m, lies near the outer end of the bank, about 1.3 miles S of Cape Roseway. A 7.6m rocky patch lies about 0.3 mile S of Jig Rock. A lighted bell buoy is moored about 0.5 mile ESE of Jig Rock.

Caution.—Two rocky patches, on which the sea breaks in

heavy weather, with depths of 13.4m and 15.5m lie 3.5 miles and 4 miles SSE, respectively, of Cape Roseway.

2.13 Bony Point, about 0.8 mile E of Government Point, is the S extremity of a narrow peninsula called Demings Island (Berrys Island). A bank, with depths of less than 5.5m, extends more than 0.5 mile S of Bony Point. Strap Tub Rock, which dries 1.5m, lies on this bank, about 0.5 mile S of the point. Bell Rock, 0.6m high, lies about 1.8 miles SE of Government Point.

McNutts Island (43°38'N., 65°17'W.), 55m high and wooded, has no off-lying dangers on its E side. A submarine cable crosses the N part of Western Way, between McNutts Island and Carleton Village to the W.

Tea Chest Island, a small rock, 1.2m high, lies about 1.3 miles WNW of Government Point, and about 90m off the N shore of Eastern Way.

Middle Rock, with a depth of 3.9m, lies about 1.5 miles farther WNW. It lies near the outer end of a bank, with depths of 5.5m and less, extending about 0.5 mile WSW from a breakwater on the N shore of Eastern Way. Lower Sandy Point Light is shown from the outer end of the breakwater.

2.14 Shelburne Harbour (43°45'N., 65°19'W.) a landlocked harbor, affords safe anchorage for a large number of vessels. It is easy to access and navigation is seldom interrupted by ice. The town of Shelburne is situated on the E side of the head of the harbor. The principal industries are lumbering, fishing, and boat building

Birchtown Bay, the NW arm of Shelburne Harbour, is shallow and obstructed by rocks, some of which dry, and should only be entered by mariners with local knowledge.

Tides—Currents.—The tidal rise at Shelburne Harbour is 2.1m at MHWS and 1.7m at MHWN.

Depths—Limitations.—There is a least depth of 7.8m in the entrance channel and in the harbor as far as the anchorage close S of Shelburne.

The T-shaped government wharf is at the S end of Shelburne, with a length of 166mand a least depth of 8.5m alongside the outer face. A submerged intake pipe extends 244m from the W side of the wharf.

The Shelburne Marine pier is "F" shaped and used for repairs and refitting. This pier is located 0.6 mile SSE from the public pier and has alongside depths of 5.2m to 9.2m.

Another pier is located 1.2 miles SE of Sandy Point, extending 130m from shore with an outer end of 86m in length and alongside depths of 1.5m to 2.2m.

There are several privately owned wharves in the port with varying lengths and depths.

Aspect.—Shelburne Harbour is entered between **Sandy Point** (43°41'N., 65°19'W.) and Fort Point, about 0.8 mile to the S. An abandoned light tower stands on a sand spit extending about 230m W of Sandy Point. A conspicuous boulder lies off the E extremity of Fort Point.

Surf Point lies about 0.4 mile NW of Fort Point. A light is shown from a red mast situated on a large rock on the N end of a shoal extending from the point.

A tower, at an elevation of 113m, painted in red and white bands and marked by red obstruction lights, is conspicuous about 1.5 miles NNE of the government wharf.

A conspicuous water tower, with an elevation of 83m, lies about 1.3 miles SE of the government wharf. White oil tanks are situated to the E of the fueling dolphins. Another tower, marked with red and white bands, is reported to lie close N of the water tower.

Pilotage.—Pilotage is not compulsory. Pilots should be requested from the Atlantic Pilotage Authority at least 24 hours before arrival at the pilot boarding station. The time used must be GMT. Pilots board at position: 43°39'N., 65°16'W. The ETA must be confirmed or corrected 6 hours before arrival at the pilot boarding station. The pilot boat guards VHF channel 16.

Contact Information.—See the table titled **Shelburne Harbour—Contact Information**.

Shelburne Harbour—Contact Information	
Harbormaster	
VHF	VHF channel 16
Telephone	1-902-845-3316
Port Authority	
VHF	VHF channels 16 and 68
Telephone	1-902-875-4433
	1-902-875-7009 (mobile)
Facsimile	1-902-875-1105
	1-902-875-4433
Email	portmanager@portshelburne.com
Web site	https://www.portshelburne.com

Anchorage.—Vessels can anchor anywhere in the harbor, N of Adamant Rock, in depths of 9.1 to 12.8m, mud, except on the 7.9m rocky shoal lying 0.75 mile NE of Hart Point. There is also safe anchorage between Adamant Rock and Sandy Point, in depths of 7.9 to 8.8m, mud.

Caution.—Adamant Shoal (43°43'N., 65°20'W.) lies about 1.3 miles NNW of Sandy Point. Adamant Rock, with a depth of 2.4m, lies on the E side of the shoal. Man of War Rock, with a depth of 1.2m, lies on the W part of the shoal. A 5.5m rocky patch lies about 0.1 mile SW of this rock. Two buoys mark the E and W sides of Adamant Shoal.

2.15 Harts Point (43°44'N., 65°20'W.) separates Shelburne Inner Harbour from Birchtown Bay. Hart Point Rock, with a depth of 1.8m, lies about 0.2 mile S of the point and is marked S by a buoy.

Hero Shoal, with a least depth of 3m, lies about 0.4 mile WSW of the government wharf. A buoy is moored close NE of the shoal. A 5.5m rock, marked by a buoy, lies close SE of Hero Shoal.

The inner harbor, from about 0.4 mile N of Hero Shoal, is obstructed by islands and shoals.

Jordan Bay (43°40'N., 65°12'W.), the estuary of the Jordan River, lies E of Shelburne Harbour. It is entered between Blue Gull Island and Blue Island (Green Island), 29m high, about 1.5 miles ENE. The bay affords shelter to small vessels in offshore winds, but is entirely open S. Gales send in a heavy sea.

Blue Gull Island is connected with Jordan Point, on the W side of the inlet by a shallow spit, on which are drying rocks. A

lighted whistle buoy is moored about 0.4 mile W of Blue Gull Island.

The Sisters, two rocks which dry 1.8m, lie on the E edge of a bank, with depths of less than 5.5m, which extends about 0.5 mile from the W shore of the bay, about 1.5 miles N of Jordan Point.

The best anchorage is near the W shore, about 1.3 miles N of The Sisters, in 6.4m, sand bottom.

Green Harbour is entered between Blue Island and Western Head, about 2.5 miles SE. It is open to S winds, and in S winds affords shelter to small craft only.

A public wharf, providing good shelter for small craft, is situated on the W side of Green Harbour in a small cove about 1.4 miles N of Pattersons Point. The wharf is 91m long. The channel to the wharf is buoyed.

Lockeport Harbour—Approaches

2.16 The approach to Lockeport Harbour lies between **Western Head** (43°39'N., 65°08'W.) and Heamons Head, about 5 miles NE. A least depth of 3.7m lies in the harbor entrance. Due to the many rocks and shoals in the entrance to the harbor and the uneven nature of the bottom, the sea breaks right across the entrance during gales from the S. Although many of the dangers in the entrance and approaches are buoyed, the entrance is intricate and should only be attempted by mariners with local knowledge. **O**nly the more important of the numerous dangers in the entrance will be described.

Bull Rock, with a depth of 1.8m, which generally breaks, lies about 1.5 miles S of Western Head. Rocky patches, with depths of 3.6m, 5.8m, and 5.2m, lie N, NNE, and ENE, respectively, of Bull Rock.

Long Shoal, about 1 mile SE of Western Head, consists of two shallow patches. The N patch has a least depth of 6.1m; the S patch has a least depth of 5.5m. An 8.8m shoal lies about 1.1 miles to the S of Long Shoal. Tickey Shoal, with a least depth of 8.2m, lies about 0.8 mile E of Western Head.

Gull Rock (43°39'N., 65°06'W.), an islet 4.6m high, about 1.3 miles E of Western Head, lies on an extensive bank. Gull Rock Light is shown from a white dwelling surmounted by a square tower, 13m high, on Gull Rock. The above bank contains the following dangers:

A submarine power cable and an abandoned cable extend NW from Gull Rock, terminating at the mainland 1.4 miles N of Western Head. Its location can best be seen on the chart.

Ram Island (43°41'N., 65°02'W.), 12m high and bare, lies with its N end about 0.5 mile S of Hemeons Head, from which it is separated by Ram Island Passage, about 0.2 mile wide, with a depth of 5.5m. An extensive bank, with depths of less than 5.5m, extends about 1 mile S of Ram Island. On this bank, Potter Ledge, 2m high, lies about 0.4 mile S of the island, and Emulous Breakers, which dry, lie about 0.4 mile farther S.

Farm Ledge, with a least depth of 5.2m, and Outer Farm Ledge, with a least depth of 7.6m, lie about 1.5 and 2.5 miles S, respectively, of Ram Island. A 6.4m shoal lies about 0.7 mile W of Farm Ledge. A lighted whistle buoy lies about 1.7 miles S of Outer Farm Ledge.

2.17 **Blow Breaker** (Eastern Bull) (43°40'N., 65°04'W.), with a depth of 1.8m, lies about 1 mile S of Black Point. The latter point is only 2.7m high. Black Point Rock, with a depth of 0.6m, lies near the extremity of a shallow bank extending nearly 0.5 mile S of Black Point. A 4.3 and a 5.5m patch lie about 0.5 mile and 0.7 mile WNW, respectively, of Blow Breaker. A lighted buoy is moored about 0.7 mile SSW of Blow Breaker.

McKay Rock, with a depth of 4.2m, lies 1 mile WSW of Black Point. A 5.2m patch lies about 0.3 mile NE of McKay Rock.

The harbor of Lockeport is entered between **Cranberry Island** (43°42'N., 65°06'W.) and Gooseberry Island, about 0.8 mile E. The dangers in the entrance are so numerous that only the more important will be described. Cranberry Island, 13.1m high, is joined to Locke Island, about 0.1 mile W, by a sandy beach which dries 0.6m.

Cranberry Island Light

Round Rock, 1.5m high, lies about 0.3 mile S of the S end of Cranberry Island, to which it is joined by ledges, some of which dry. A 4.3m patch lies about 0.2 mile E of Round Rock and is marked SW by a lighted buoy.

Foul ground, with a depth of 2.1m and marked E by a buoy, extends about 0.2 mile E from the S extremity of Cranberry Island. Laurier Rock, with a depth of 2.1m, lies about 0.2 mile farther E and is marked W by a buoy. Middle Ground, with a rock that dries 0.9m, lies about 0.4 mile NNE of Laurier Rock. There is a rock, which dries 0.3m, midway between Laurier Rock and Middle Ground. Foul ground extends E from Middle Ground to Gooseberry Island.

Lockeport Harbor—Berth Information			
Berth	**Length**	**Depth at Low Tide**	**Remarks**
Inner Harbor			
East Pier	137m	4.6-6.1m	—

Lockeport Harbor—Berth Information			
Berth	**Length**	**Depth at Low Tide**	**Remarks**
North Pier	91m	2.4m	—
West Wharf	49m	4.9m	—
Osborne Harbor			
Fishing Pier	93m	1.5m	Pier privately owned by fishing companies.
Lockeport Station			
Fishing Pier	41m	2.4m	Pier privately owned by fishing companies.

Carter Island, marked by a light, lies about 0.5 mile N of Cranberry Island. The light is shown at an elevation of 15m from a white circular tower, 9.1m high, with two red horizontal bands. A conspicuous water tower, 50m high, with red and white bands, is situated a little over 1 mile W of Carter Island.

Carter Island Light

2.18 Lockeport Harbor (43°42'N., 65°07'W.) affords good shelter for vessels drawing less than 4.6m. The tidal rise is 2m at MHWS and 1.8m at MHWN. There is good anchorage, in about 5.5m, sand, about 0.2 mile NW of Clam Island, near the head of the harbor.

The inner harbor at Lockeport Harbour is sheltered by two breakwaters, and is adjacent to the town of Lockeport, an important fishing center.

Lockeport Harbor to Port Mouton

2.19 Black Rock (43°42'N., 65°01'W.), 4.6m high, lies about 0.4 mile E of Hemeons Head and appears as two rocks at a distance. An isolated rocky shoal, with a depth of 4.8m, lies nearly 1.5 miles NE of the same headland. A lighted whistle buoy is moored about 0.3 mile E of the shoal.

The Sable River, entered between **Raspberry Head** (43°39'N., 65°00'W.) and Harding Point, about 1.5 miles ENE, is available to only small craft. About 1.3 miles within the entrance, drying flats constrict the course of the river to a narrow and tortuous channel. Local knowledge is required to enter the river.

Caution.—Bantam (Bantam Rock), which dries 0.6m, lies over 0.75 mile S of Harding Point and is the NE of a group of rocky patches, of which the remainder have depths of 4.9 to 9.1m. A 6.4m shoal lies about 0.3 mile ESE of Bantam.

Bastard (Bastard Rock), with a depth of 4.8m, lies about 0.7 mile S of Bantam. A 7.6m patch is situated about 0.5 mile W, and an 11m patch about 0.3 mile S, respectively, of Bastard.

2.20 The approach to **Port Hebert** (43°47'N., 64°55'W.) lies between Harding Point and Thrum Point, about 4.5 miles NE. Green Island, 13m high, lies nearly 2 miles NE of Harding Point, and near the outer end of bank with depths of 1.8 to 5.2m extending about 0.8 miles from the coast. A rock, which dries 0.9m, lies about 0.2 mile SW of the island, and shoals, with depths of less than 9.1m, extend about 1 mile S and SSW from the island.

Hebert Rocks, which dry 0.3m, lie about 1.3 miles NNE of Green Island, near the outer end of a spit that extends about 0.4 mile SE from the W entrance point of Port Hebert.

The entrance to the harbor can be identified by **Richardson Head** (Tillys Head) (43°48'N., 64°56'W.), 40m high, thickly wooded and falling steeply E, about 1 mile WNW of Thrum Point. A bank, with an island on it, extends S of Thrum Point; there is a depth of 2.1m about 0.3 mile S of the point.

A lighted whistle buoy is moored about 0.8 mile SE of Hebert Rocks.

Tides—Currents.—Tidal currents in the entrance change direction shortly after HW and LW by the shore and have a velocity at springs of 1 knot. In the harbor it is safe to count on a rate of at least 1.75 knots at spring tides and 1 knot at neap tides in the channel between Shingle Point (Lighthouse Beach) and Shingle Reef.

Depths—Limitations.—Two public piers extend from the E shore near a fish plant about 0.4 mile N of Shingle Point. The more N and larger pier is L-shaped, with depths of 2.4 to 4.6m alongside the outer face, which is 29m long. The S pier, 27m long, has depths of 2.1 to 4m alongside both sides. Submarine pipelines extend from the shore in the vicinity. An obstruction extends 82m from the shore close N.

Anchorage.—The harbor, open all year, affords good shelter to small vessels, but local knowledge is considered necessary to enter the port. A bar, with a least depth of 3m in the fairway, on which these a breaks in heavy weather, lies across the entrance from close inside Richardson Head to Shingle Point, about 1 mile N.

There is good anchorage for small vessels, in 5.8m, mud, about 0.2 mile NW of Shingle Point.

Caution.—A submarine cable is laid from Shingle Point in a SW direction to the opposite shore.

2.21 Lesser Hope Rock (43°47'N., 64°53'W.), 3m high, lies about 1 mile E of Thrum Point. Foul ground extends from the rock to the mainland about 0.5 mile NW.

Port Joli, entered between Lesser Hope Rock and **Joli Point** (43°49'N., 64°50'W.), about 2.5 miles NE, contains no safe anchorage and is only available to small vessels. This inlet is a bird sanctuary.

Little Hope Shoal, with a least depth of 3.3m, which breaks in bad weather, lies about 1 mile S of Joli Point. A lighted bell buoy is moored about 0.5 mile S of the shoal.

Little Hope Island, 3.4m high and composed of small boulders on rock, lies about 2 miles E of Joli Point, on a rocky bank, with depth of less than 11m, extending about 0.5 mile SE and nearly 1 mile NW of the island. A light is shown on the island from a 23m high, white circular tower, which from a distance appears as a large chimney. A lighted whistle buoy is moored about 0.4 mile SSE of the island.

Cadden Bay and Little Joli Bay, both open seaward, indent the coast between Joli Point and Mouton Head, about 4 miles NE. Black Point, which separates these bays, has a rock, 1.8m high, and shoal with a depth of 3m about 0.2 mile and 0.3 mile SE, respectively, of it. A patch, with a depth of 2.1m, lies in the middle of the entrance to Cadden Bay.

Port Mouton

2.22 Port Mouton is a large bay, entered between **Mouton Head** (43°52'N., 64°47'W.) and White Point, about 6 miles NNE. Mouton Island, with its S extremity about 1.5 miles NE of Mouton Head, lies in the entrance to Port Mouton and shelters the harbor. The harbor affords anchorage for large vessels, in a depth of 12.8m.

2.23 Western Channel.—This channel, lying SW of Mouton Island, is available only to vessels drawing less than 2.1m.

Mouton Head, the S entrance point, is bordered by a bank which dries in places and extends nearly 0.2 mile S and SE from the headland.

Western Channel is obstructed with rocks and shoals. Bull Rock, 0.9m high, about 1.8 miles N of Mouton Head, lies on a bank extending E from the mainland. Middle Rock, with a depth of 0.9m, lies in mid-channel, about 0.1 mile NE of Bull Rock. Jacket Island (Jackies Island), 7.3m high, farther NE, lies on the E side of the channel.

South Rock, which dries 0.6m, lies about 0.2 mile S of **South Point** (43°53'N., 64°46'W.), the S extremity of Mouton Island. Banks, with depths of less than 5.5m, extend about 0.4 mile S of the point.

Devastation Shoal, with a least depth of 3.9m, extends to about 1 mile E of South Point. Another shoal, with a least depth of 8.8m, lies about 0.5 mile NE of Devastation Shoal.

Caution.—A wreck, with a depth of 4.5m over it and which is used as a recreational diving site, lies about 0.3 mile NW of Jacket Island.

2.24 Eastern Channel.—This is the main entrance to the harbor, entered between the E coast of Mouton Island and White Point, about 3 miles NNE.

White Point (43°57'N., 64°44'W.), the N entrance point of Port Mouton, has a spit, parts of which dry, extending about 0.4 mile SE from it. White Point Shoal, with a depth of 6.7m, lies about 1.5 miles ESE of White Point. A 10.3m patch lies about 0.8 mile N of White Point Shoal. White Point Rock, with a depth of 3.3m, lies about 1.4m miles SE of White Point. A lighted bell buoy is moored about 0.5 mile S of White Point Rock.

Caution.—A 12.2m patch and a 10.5m patch lie about 3 miles and 3.4 miles SE, respectively, of White Point.

Brazil Rocks are located about 1 mile NE of Mouton Island. Round Rock, 0.6m high, lies near the W extremity of the group. Two rocks in the group dry to a height of 1.8m. The SE rock of the group, with a depth of 0.9m, lies about 0.5 mile SE of Round Rock. A 6.4m patch and a 3.3m patch lie about 0.5 mile SSE and 0.5 mile N, respectively, of Round Rock.

Port Mouton Harbour

2.25 Spectacle Ledge, with a least depth of 3m, extends about 1.1 miles NW from the N end of Mouton Island. A lighted bell buoy is moored nearly 0.5 mile NNE of the N extremity of Spectacle Ledges.

The Spectacle Islands, about 1 mile W of the NW extremity of Mouton Island, are almost joined at LW. The N island is fairly steep-to on its NW side. Spectacle Rock, 1.2m high, lies about 0.1 mile E of the N island. Rocks and shoals extend SW from the S island, and Massacre Island, 7.3m high, lies about 0.4 mile SE of the same island, to which it is joined by foul ground with ledges and rocks above-water.

Port Mouton Light is shown from a white square tower, 4.6m high, near the N point of the N Spectacle Island. Mink Island, 3.4m high, lies about 1 mile W of Port Mouton Light.

Port Mouton Light

Port Mouton Village (43°56'N., 64°51'W.) lies on the shore of Jones Cove (Jones Creek), at the extreme W end of the harbor. Charley Island lies about 0.3 mile SW of Bell Point, the N entrance point of the cove. A breakwater extends S from Charley Island, and then SW to the shore. Two wharves on the W side of the breakwater extend to a depth of 3m. A smaller breakwater, about 67m in length, parallels the two wharves on the NE side closest to Charley Island. There is a boat basin, with a depth of 3m, off the end of the wharves. A buoyed channel, with a least reported depth of 2.1m, leads into these wharves; however, the depths are subject to silting.

There is good anchorage, in 12.8m, mud, about midway between Mink Island and the Spectacle Islands. Smaller vessels can anchor, in about 12.8m, mud, about 0.5 mile S of Massacre Island. This anchorage is exposed to considerable swell in gales from the E, but the holding ground is good. A light is shown from a mast close SW of the Spectacle Islands; passage S of the islands is not recommended without local assistance.

2.26 Western Head (43°59'N., 64°40'W.), lying about 3.7 miles NE of White Point, is steep-to on its E side.

The coast between White Point and Western Head recedes and is divided into two small bays by Black Point, located about 1.3 miles NE of White Point. Gull Bay is the NE of these two bays.

Gull Shoal, a sand bank which dries 1.5m, lies on a shoal bank which extends 0.25 mile offshore, about 0.8 mile NE of Black Point.

Liverpool Bay (44°02'N., 64°39'W.), the estuary of the Mersey River, is entered between Moose Point, 2 miles N of Western Head, and Eastern Head, about 1.3 miles further NE.

The approach to Liverpool Bay lies between Western Head and Coffin Island, about 3 miles NNE.

Sow and Pigs, rocks which dry 0.6m, lie on a bank extending about 320m offshore, about 1.5 miles N of Western Head.

Coffin Island, thickly wooded, is joined to the mainland NNW by a shoal bank with depths of less than 4.6m. Another bank, with depths of less than 5.5m, extends about 0.3 mile S of the island. At the N end of the island, there is a small boat harbor, dredged to 1.8m, with several small wharves. Coffin Island Light is shown from a white octagonal tower, 16m high, situated on the S end of the island.

Black Point (Mersey Point) (44°02'N., 64°41'W.), about 0.8 mile NW of Moose Point, is a projection on the S side of Liverpool Bay. Rocks, above and below-water, extend about 137m NE of the point. A patch, with a depth of 6.4m, lies about 230m NE of the point.

Fort Point lies about 1.5 miles farther NW. A spit, with a depth of 1.5m over its outer extremity, extends about 137m NE of the point. A lighted bell buoy is moored about 0.3 mile NE of Fort Point.

Forbes Point, on the N side of Liverpool Bay, lies about 1 mile W of Eastern Head. Foul ground extends up to 0.3 mile offshore between the two points.

Caution.—Liverpool Bay is open to the SE and a considerable swell is experienced with SE gales. Vessels unable to enter Liverpool Harbour or to obtain shelter off Brooklyn should avoid entering Liverpool Bay, especially in the autumn and winter.

2.27 Liverpool (44°02'N., 64°43'W.) (World Port Index No. 6410), which is not visible from seaward, is located at the mouth of the Mersey River, at the outflow from Lake Rossignol. The port is one of the few along this stretch of coastline that has a year round navigation season. The entry to Liverpool also includes the facilities located at Brooklyn which permits a larger draft than Liverpool.

Liverpool Harbor is located SW of Fort Point. The approach and entrance has a dredged channel.

Brooklyn Harbor is protected by a breakwater, the outer part of which is in ruins and extends approximately 0.2 mile SW from the E side of the entrance to Herring Cove.

Tides—Currents.—Mean spring range is about 2.2m with mean neap range about 1m.

Depths—Limitations.—The area in the approach to Brooklyn and the buoyed channel into Liverpool Harbour are subject to silting. In 1998, the buoyed channel to Liverpool had a limiting depth of 4.5m.

Range lights are shown near the outer end of the newsprint-loading wharf. The range, privately maintained, leads to the wharf. A marine slip, formerly operated by Steel and Engines Products Ltd., has fallen into disrepair and is no longer in use. Mariners are cautioned that rails from the slip extend into the main channel.

Information on the port facilities available at Liverpool is given in the table titled **Liverpool—Berth Information**.

Liverpool—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Liverpool Harbor			
Fishplant Wharf	138m	2.4-3.7m	Lies on the N side of the harbor adjacent to the bridge crossing the Mersey River.
Shipyard Quay (STENPRO)	275m	4.0m	Used for fitting out and repairs.
Brooklyn			
Abitibi Bowater Paper Co. Newsprint	168m	7.3m	Loading pier extends SE. Vessels up to 198m loa may use this berth.
Abitibi Bowater Lumber	137m	8.3m	—

Aspect.—Brooklyn Breakwater, the outer part in ruins, extends about 0.2 mile SW from the E entrance point of Herring Cove, about 0.7 mile WNW of Fort Point. Brooklyn Pier Light is shown at an elevation of 9.1m from a red mast, 6.7m high, situated on the outer end of the breakwater. A lighted buoy is moored about 90m SW of the light.

A conspicuous tower, with an elevation of 126m, painted in red and white horizontal bands, and marked by red aircraft obstruction lights, is conspicuous about 1.8 miles NW of the head of Brooklyn Breakwater.

Pilotage.—Pilotage is not compulsory but can be obtained through the Atlantic Pilotage Authority. The pilot should be requested 24 hours before arrival at the pilot boarding station. The time used must be UTC. The ETA must be confirmed or corrected 6 hours before arrival at the pilot boarding station.

The pilot boards in position 44°01'34.2"N, 64°38'55.2"W.

Contact Information.—See the table titled **Liverpool—Contact Information**.

Liverpool—Contact Information	
Harbormaster	
Telephone	902-354-5530
Pilots	
VHF	VHF channel 10

Anchorage.—There is good holding in 26m in a position near the pilot boarding station, approximately 1 mile respectively from Coffin Island and Eastern Head and 0.6 mile from Moose Point. A good anchorage is located in 13m, mud, midway between Spectacle Islands and Mink Island or closer inshore towards the beach, for vessels with a shallower draft. Vessels may also anchor in the area around Forbes Point, in depths of approximately 13m, but clear of Buoy UM50. There is anchorage with good holding ground, mud, W of Brooklyn Breakwater in approximately 5.5m. Both of these anchorages are susceptible to sea and swell. To the SW, there is an anchorage in 13m, 0.5 mile NW of Bull Point in the small bay off the village of South West Port Mouton. This provides good holding in mud but is exposed to considerable swell in strong E winds. Vessels using this anchorage and constrained by draft should approach from the N and should be aware of shoals, least depth 6.7m, which are located at the entrance to the bay.

Caution.—Currents produced by the flow of the Mersey River into Liverpool Harbour are of varied strength. In addition, the harbor is subject to silting. All depths are uncertain and should be checked with local authorities.

2.28 Wolfs Point (44°04'N., 64°37'W.), located about 1 mile N of the N point of Coffin Island, is the W entrance point of Eagle Bay, a shallow bay obstructed by rocks. Eagle Point, about 1.5 miles E of Wolfs Point, is the W entrance point of Blueberry Bay, which is also shallow and obstructed by rocks.

Blueberry Point, the E entrance point of Blueberry Bay, lies about 1 mile ESE of Eagle Point. **Puddingpan Island** (44°04'N., 64°34'W.), about 0.5 mile ENE of Blueberry Point, lies near the outer end of foul ground extending about 0.8 mile S from the mainland.

Andrews Head (44°04'N., 64°33'W.) lies about 1 mile NNE of Puddingpan Island. The point is fronted by a bank, with depths of less than 5.5m, extending about 595m NE and SE. A 5.8m shoal lies nearly 0.5 mile E of Andrews Head. Medway Ledge, with a least depth of 12.8m, lies about 3 miles SE of Andrews Head. A lighted bell buoy is moored about 1.8 miles SE of Andrew Head.

Medway Head, the W entrance point to Medway Harbour, is 46m high and lies about 1.8 miles NNE of Andrew Head. Medway Head Light is shown from a white pyramidal tower situated on the headland.

Medway Head Light

Rugged Rock (Ragged Rock), with a depth of 2.1m, lies about 0.8 mile S of Medway Head. A patch, with a depth of 8.8m, and a rock, with a depth of 1.2m, lie about 0.2 mile S and 0.1 mile N, respectively, of Rugged Rock.

Southwest Breaker, a rock with a depth of 1.8m, lies about 1.3 miles SE of Medway Head. A bank, with a depth of 4.9m, extends about 0.4 mile NW of Southwest Breaker. A lighted whistle buoy is moored about 0.3 mile SSW of Southwest Breaker.

Fryingpan Island, 3.4m high and marked by a light, about 0.7 mile E of Medway Head, is the S island of a group which shelters the entrance to Medway Harbour from the E. Fryingpan Island Light is shown from a skeleton tower, 4.6m high, with a red and white daymark. Stonehorse Rock, with a depth of less than 1.8m, lies about 0.4 mile ESE of the island. Great Island, the largest island of the group, is joined to the mainland about 0.5 mile N by rocky ledges and sandbanks, some of which are above-water.

Caution.—A submarine cable is laid from the W shore of Medway Harbour, positioned in mid-channel between Neil Point and Great Island, to a position in mid-channel between Medway Head and Fryingpan Island, and then to seaward. Mariners are cautioned not to anchor in the vicinity of this cable.

2.29 Medway Harbour Entrance (44°06'N., 64°32'W.) is entered between Medway Head and Fryingpan Island, about 0.8 mile E. The harbor provides good shelter to vessels with a draft of less than 5.4m, but mariners without local knowledge should not attempt to enter except in an emergency.

Medway Harbour has once wharf. Government Wharf is a L

shaped wharf with alongside depths of 1.2m to 6m. The W side has a length of 77.5m. The E side has a length o f 61m. And the outer face has a length of 33.5m.

Stony Ridge (Stoney Ridge), with a depth of 2.4m, lies about 0.1 mile offshore, about 0.5 mile N of Medway Head. A 2.7m shoal lies about 0.3 mile farther N, and about 0.1 mile offshore.

Middle Island Rock, with a depth of 1.5m, lies about 0.3 mile SSW of the SW extremity of Great Island. A 5.5m patch lies in the entrance channel, about 0.2 mile W of Middle Island Rock.

Neils Point (Neil Point) (44°07'N., 64°33'W.) lies about 1.3 miles NNW of Medway Head. Medway Harbour, N of the point, is obstructed by rocks and shoals. Middle Ledge, which dries 0.6m, lies about 0.8 mile N of Neils Point.

A narrow buoyed channel, with a least depth of 6.1m and entered about 0.5 mile N of Neils Point, leads to the wharf at Port Medway. The wharf has an outer face, 34m long, with depths of 4.3 to 6.1m alongside. The outer berth on the W side is 37m long with depths of 1.8 to 3.4m alongside. The E berth, 61m long, has depths of 1.2 to 5.5m alongside. There is a slipway at the inner end of this berth. A breakwater, 172m long, and a fish plant are situated to the E of this wharf.

Pollock Point (44°08'N., 64°30'E.), lying about 1.3 miles NE of the E extremity of Great Island, separates Hell Bay to the SW from Apple Cove to the N. A bank, with a depth of 8.5m, extends about 0.8 mile SE from Pollock Point. Duck Shoal, with a least depth of 16.1m, lies about 2 miles SE of Pollock Point.

The coast between Pollock Point and Green Point, about 3 miles NNE, is indented by three small coves, Apple Cove, Cherry Cove, and Broad Cove, respectively. The coast is foul to a distance of 0.3 mile in places and should be given a wide berth. A lighted whistle buoy lies about 0.5 mile E of Cherry Cove.

Green Bay

2.30 Green Bay is entered between Green Point and **Seal Point** (44°11'N., 64°24'W.), the SW extremity of Cape La Have Island, about 2.8 miles E. The bay has general depths of 5.5 to 14.6m and is bounded N by Crescent Beach, a low and narrow strip of land extending from the mainland, and connected to Bush Island by a causeway.

Indian Island lies with its N end about 1 mile S of Seal Point. A 4.9m patch lies about 320m N of the island. A lighted whistle buoy is moored about 1.3 miles E of the S extremity of the island.

Green Point Rock, with a depth of 3.3m, lies about 0.4 mile WNW of Seal Point.

Green Ledge, which dries 0.6m and is steep-to on its E side, lies about 1.5 miles WNW of Seal Point, and on the W side of the entrance to the bay.

Halfway Rock, with a depth of 5.5m, lies nearly 0.7 mile SSE of Green Ledge. A 5.8m rocky patch lies about 0.7 mile SW of Halfway Rock.

Directions.—To enter Green Bay, steer to pass W of Indian Island, and then in mid-channel between Green Point Rock on the E, and Halfway Rock and Green Ledge on the W.

The La Have River

2.31 The approach to the La Have River lies between **Cape La Have** (44°11'N., 64°21'W.) and Point Enrage, about 6.3 miles NE. Cape La Have, a steep red cliff, 30.2m high, is the SE extremity of Cape La Have Island. The latter island is the largest of the La Have Islands which extend about 4.5 miles N to the mainland.

Cape Rock, with a depth of 4m, lies about 0.3 mile S of Cape La Have. Black Rock, 1.5m high, lies about 1 mile ESE of the cape. Two rocks, with depths of 5.5 and 6.1m, lie about 0.2 mile and 0.4 mile S, respectively, of Black Rock.

Halibut Head, a small peninsula 23m high, lies about 1.3 miles NNE of Cape La Have. A 4.2m shoal lies about 0.3 mile NNE of Halibut Head. Outer Island, 20m high, lies about 1 mile NW of Halibut Head.

False La Have, entered N of Outer Island, is suitable only for small vessels.

A lighted bell buoy is moored about 0.8 mile NE of Halibut Head.

Mosher Island, 44.5m high, is marked by a light at its NE point (44°14'N., 64°19'W.), about 2.5 miles NNE of Halibut Head. Its NE point forms the W entrance point to the LaHave River. Gaff Point, about 1.3 miles ENE of Mosher Island, is the E entrance point of the river.

2.32 **West Ironbound Island** (44°14'N., 64°16'W.), 32m high near its N end, lies with its N end about 0.5 mile SE of Gaff Point. A conspicuous clay cliff marks the W side of the N end of the island. A light is shown from a white square tower, 10.4m high with two horizontal bands, on the S side of the island. Ironbound Breaker, with a depth of 1.2m, lies on the outer end of a spit which extends about 0.3 mile W from the SW extremity of the island. A lighted bell buoy is moored close S of a patch, with a depth of 10.1m, about 0.2 mile SW of Ironbound Breaker. Shag Rock, which dries 1.8m, lies about 0.3 mile ENE of the N extremity of the island.

Gaff Point (44°15'N., 64°17'W.), the E entrance point of the La Have River, treed and with rugged black cliffs, is the S extremity of a narrow peninsula separating the river entrance from Hartling Bay to the E. A bank, with depths of less than 5.5m, extends nearly 0.3 mile ESE of the point.

2.33 **Point Enrage** (Hell Point) (44°16'N., 64°15'W.), 22m high, lies about 2 miles NE of Gaff Point. Hell Reef, which dries 0.3m, lies about 0.3 mile SSW of Point Enrage. Pollock Shoal, with a least depth of 4.3m, lies about 0.8 mile SSE of the same point. A lighted bell buoy is moored about 0.3 mile SE of the shoal.

The La Have River is entered between the E side of **Mosher Island** (44°14'N., 64°19'W.) and Gaff Point, about 1.3 miles ENE. The river affords shelter to vessels of moderate draft.

The river is spanned in Bridgewater by bridges, the first or E, with a vertical clearance of 1.3 at the NE end and 1.8m at the SW end at HHW. The second bridge, 0.2 mile upstream, has a vertical clearance of 0.9m.

Night navigation of the river is possible, but not recommended. During winter months, navigation of the river is seldom hindered by ice; however, should this occur, icebreaking assistance is available.

The La Have River is subject to silting. Mariners are cautioned that depths in the river may be less than those shown on the chart.

La Have Fairway Lighted Bell Buoy is moored about 0.8 mile NNE of the NE extremity of Mosher Island.

East Spectacle Island, 21m high, and West Spectacle Island, 20.7m high, lie about 0.5 mile N of Moshers Island and are joined by a drying bank.

French Rock, with a depth of 3.6m, lies about 0.3 mile S of the E end of East Spectacle Island. Mosher Ledge, which dries, lies about 0.4 mile S of West Spectacle Island. Both dangers are buoyed. Mosher Harbour, an area with general depths of 6.1 to 9.1m, lies between French Rock and Mosher Ledge.

The Shoughbac (Felsen Kap) (44°16'N., 64°20'W.), a conspicuous cliff, 26m high, is located about 1.4 miles N of East Spectacle Island. A broad bank, with depths of less than 5.5m, extends about 1 mile SW from the shore in the vicinity of The Shoughbac. Cockawee Shoal, with a least depth of 1.2m, lies on the SW extremity of the bank.

Bull Rock, which dries 1.8m, lies on the foul ground extending about 0.3 mile from the W shore, about 1.3 mile NNW of West Spectacle Island.

The principal channel is somewhat tortuous, and runs W of Cockawee Shoal and E of Bull Rock, but there is an alternative and more direct channel across the bank E of Cockawee Shoal, which joins the main channel near Bull Rock.

Mariners without local knowledge should not proceed beyond Cockawee Shoal.

Fort Point, about 1.3 miles NW of The Shoughbac, lies on the W side of the narrows. Krout Point, about 0.3 mile ENE of Fort Point, lies on the E side of the narrows. Romkey Hill rises to an elevation of 38.4m, about 0.4 mile SE of Krout Point.

2.34 Riverport (44°18'N., 64°20'W.) lies at the head of an inlet entered between Krout Point and Parks Island, about 0.5 mile N. A buoyed channel, with a least depth of 4. 3m, leads to the wharves at Riverport.

From Fort Point, the La Have River leads 6 miles NW to Green Point, on the SW shore, then 3 miles WNW to Bridgewater. The channel is not buoyed, except for a short stretch commencing about 1 mile above Green Point and extending to Railway Wharf, which is situated on the N shore, about 0.8 mile below Bridgewater.

Tides—Currents.—The tidal rise at Krout Point is 2m at MHWS, and 1.7m at MHWN. The tidal rise at Bridgewater is 2.1m at MHWS, and 1.6m at MHWN.

The tidal currents have a rate of 0.5 knot at Mosher Harbour.

Depths—Limitations.—At Dublin Shore, about 1 mile NW of West Spectacle Island, there is an L-shaped government wharf, 61m long, with a least depth of 2.4m along the inside of the L-end. A light is exhibited from the pier head.

At Krout Point, there is a T-shaped public wharf with a 143m long outer face; there are depths of 4.6 to 6.1m alongside. The inside face, on the SE side, over a length of 82m, has depths of 2.4 to 5.8m alongside. A shoreline quay extends SE from the root of the pier which connects to the wharf to the land. A light, framework tower, 4m high, is exhibited from the outer end of the breakwater. A water intake pipe extends 85m W from Kraut Point to a submerged obstruction with a depth of 4.9m.

Submarine power cables cross the river about 0.3 mile above and below the wharf. A submarine pipeline extends into the channel 0.15 mile downstream of the wharf, terminating in an obstruction which stands 0.6m above the river bed.

At La Have, the Himmelman Supply Company Wharf at Lee Point, about 0.5 mile NW of Fort Point, has a depth of 3 to 4.6m at its outer face.

At Riverport, the S wharf is 76.2m long, 10.7m wide, with reported depths of 3.4 to 5.5m along the outer 30m of its S side.

The Railway Wharf, about 0.8 mile below Bridgewater, is 326m long, with a depth of 4.6m at the outer berth.

Pilotage.—Pilotage is not compulsory. Pilots can be ordered through the Atlantic Pilotage Authority and must be requested 24 hours in advance and confirmed or corrected 6 hours prior to arrival. Pilots normally board vessels in the vicinity of **La Have Fairway Lighted Bell Buoy** (44°15'N., 64°19'W.).

Anchorage.—Good anchorage in W winds can be taken, in 9.1m, mud, N of Mosher Island, about 0.1 mile E of French Rock, with the E extremity of East Spectacle Island bearing 343°, in line with Krout Point.

Small vessels can find good shelter in Mosher Harbour, in depths of 6.4 to 7.3m, 0.5 mile W of French Rock, with the E extremity of West Spectacle Island bearing 351°, in line with Fort Point Light.

There is also good anchorage, in depths of 6.4m, mud, 0.5 mile NW of West Spectacle Island, midway between that island and **Bell Point** (44°16'N., 64°22'W.).

Vessels with local knowledge and a draft of less than 5.5m may obtain secure anchorage in the river, in depths of 7.6 to 8.5m, mud, about 1 mile NW of Fort Point. Anchorage may also be obtained, in 8.2m, mud, about 0.5 mile NW of Green Point.

Directions.—Approaching the La Have River, make for La Have Lighted Whistle Buoy, moored about 3.3 miles S of West Ironbound Island, then steer to pass about 0.2 mile NE of Mosher Island Light, taking care to give a wide berth to the dangers extending W from West Ironbound Island. After passing Mosher Island Light, vessels bound for the anchorage E of French Rock should steer for the anchorage. Vessels bound for the anchorage NW of West Spectacle Island should remain about 0.3 mile N of the Spectacle Islands. No vessel should proceed beyond the latter anchorage without local knowledge.

2.35 The coast between **Point Enrage** (44°16'N., 64°15'W.) and Ovens Point, about 3.5 miles N, is indented by Kings Bay and Rose Bay. Rose Point, on the W side of the approach to Lunenburg Bay, separates the two bays.

Rose Bay is open E, but provides temporary protection from other directions. The bay extends about 2 miles W, but its head is encumbered by a drying bank, on which lie Conrad Island, 10.7m high, and a number of islets and rocks. A causeway connects Conrad Island to the mainland.

Lunenburg Bay Entrance (44°20'N., 64°14'W.) is entered between **Ovens Point** (44°19'N., 64°15'W.) and East Point, about 3 miles NE. The bay is open SE, but the force of gales

from that direction is broken by Cross Island to a large extent. There is no clear channel to the entrance of Lunenburg Harbour, because of the numerous shoal heads which encumber the bay; however, there is no great difficulty in avoiding all shoals of less than 6.7m depth to the harbor entrance.

Cross Island (44°19'N., 64°11'W.), 27.4m high, divides the approach to Lunenburg Bay into two channels. The S approach between Cross Island and Rose Point is deep and free of dangers. The N approach between Cross Island and East Point is narrow and intricate.

Cross Island Light is shown from a 10m high white tower on the E point of Cross Island. A lighted whistle buoy is moored about 0.8 mile S of Cross Island.

Caution.—A submerged wreck, with a depth of 6.7m, lies about 1.5 miles WNW of the W extremity of Cross Island. The wreck is part of a marine dive site. Diving activity may be in progress 24 hours from June 1 until December 1; diving tender boats monitor VHF channel 16 when diving is in progress. Mariners are urged to navigate with extreme caution in this vicinity.

Hounds Ledges, some of which dry, extend about 0.6 mile N of Cross Island. A shallow bank, with some depths less than 5.5m, extends about 0.8 mile farther N.

East Point Ledge, which dries 1.8m, lies with its E extremity about 0.3 mile ESE of **East Point** (44°21'N., 64°12'W.). A 5.2m patch and East Point Rock, with a depth of 2.4m, lie about 0.4 mile SE and 0.3 mile SSW, respectively, of East Point.

A lighted bell buoy is moored in the N entrance to Lunenburg Bay, about 0.8 mile SE of East Point.

2.36 Big Duck Island (44°21'N., 64°09'W.), 12m high and wooded, lies about 2.3 miles E of East Point, in the N approach to Lunenburg Bay. Rocky shoals, with depths of 6.1m, 7m, and 9.1m, lie about 0.2 mile, 0.4 mile, and 0.8 mile W, respectively, of the island. A rock, with a depth of 11m, lies nearly 0.5 mile ESE of the island.

Little Duck Island, 6.1m high, lies nearly 2 miles NW of Big Duck Island, and is almost joined to the mainland W by foul ground; foul ground extends nearly 0.2 mile from the island in other directions.

Rocky ledges, which dry, extend about 0.4 mile NE of **Ovens Point** (44°19'N., 64°15'W.), the SE entrance point of Lunenburg Bay. Ovens Reef, which dries 0.6m, is located 0.3 mile SSE of Ovens Point. The Ovens are a number of prominent caves set into the cliffs 0.5 mile N of Ovens Point.

Sculpin Shoal, with a depth of 1.2m and on which the sea breaks in bad weather, lies nearly 1.5 miles N of the point. A lighted bell buoy is moored off the SW side of the shoal.

Cross Island Light

Mosher Head rises to over 30.5m high about 2.5 miles NW of Ovens Point. The Shingles (Haddock Shoal), a stony ridge which dries, lies on the N end of a bank which extends about 0.6 mile N of Mosher Head.

Outer Middle Rock, with a depth of 5.5m, lies about 1 mile W of Sculpin Shoal. Middle Rock, with a depth of 5.2m, and Inner Middle Rock, with a depth of 4.3m, lie about 0.3 mile NNW and 0.8 mile NW, respectively, of Outer Middle Rock.

Lunenburg Harbour—Berth Information			
Berth	**Length**	**Depth at Low Tide**	**Remarks**
Navy Island Forest Products Terminal			
High Liner Food, Inc	54-115m	5.7-6.7m	Fish plant. Three finger piers.
Lunenburg Marine Railway Company	—	—	Slipway grid. Industrial foundry and engineering.

Lunenburg Harbour—Berth Information			
Berth	**Length**	**Depth at Low Tide**	**Remarks**
Lunendorf Waterfront Association	58-61m	6.4m	Public wharf.
Slipway Railway Grid	61m	5.4m	—
Lunar Fishing Inc.	64m	4.5-6.0m	The wharves extend from the N shore.
Adams & Knickle Ltd.	60 and 67m	4.8-5.4m	Two finger piers located about 0.5 mile N of Battery Point.
Fishery Museum of the Atlantic	39m	4.2m	—
Plus Wharf	152m	4.2m	—
Lunenburg Foundry	106 and 45m	5.4m	—

Long Shoal (43°38'N., 65°07'W.), with a least depth of 1.5m, lies about 0.5 mile S of Battery Point, the E entrance point of Luneburg Harbour. A buoy marks the SE side of the shallowest spot; another buoy marks a 2.1m depth at the NW part of the shoal. A 5.2m patch lies about 0.3 mile SE of the shallowest spot, and is marked about 0.1 mile N by a lighted buoy. A 6.4m patch lies about 0.3 mile E of the 5.2m patch.

The breakwater extending about 150m SW of Battery Point is marked by a light at its head. There is a conspicuous water tower about 0.8 mile N of the breakwater head.

Head Rock (Moreau Point Rock), with a depth of 0.3m, lies in the entrance to the harbor, about 0.4 mile WNW of Battery Point. It lies near the center of a bank extending about 0.4 mile SE from Kaulbach Head (Moreau Point), the NW entrance point of the harbor. The SE extremity of the bank is marked by a buoy.

Directions.—When approaching Lunenburg Bay from the S or SW, from the vicinity of Cross Island Lighted Whistle Buoy, steer for Battery Point Light bearing 309°, passing close SW of Sculpin Shoal Lighted Buoy; Battery Point Light bearing 309° leads NE of Middle Rock. When approaching Long Shoal Lighted Buoy course may be altered W to avoid the 6.4m patch about 0.5 mile ESE of Long Shoal; then pass close NE of the latter buoy, and SW of Battery Point. Course is then altered to pass close of the black buoy marking Head Rock. Then steer for the government wharf at Lunenburg, bearing about 161°, through the dredged channel, or alter course for the piers N of Battery Point.

When approaching from the E, pass about 183m N or S of Lunenburg Lighted Bell Buoy, then steer to pass close SW of Sculpin Shoal Lighted Buoy, remaining S of East Point Rock; then follow the directions of the preceding paragraph.

2.37 Lunenburg Harbour (44°22'N., 64°18'W.), in the inner part of Lunenburg Bay, is open all year. The principal industries are fishing, wooden shipbuilding, and lumbering. It was reported in 1994 that the approach channel had been dredged to a depth of 6.4m. The tidal rise in the harbor is 2m at MHWS and 1.8m at MHWN.

Depths—Limitations.—A dredged channel, 61m wide, with a depth of 6.4m (1994), leads from the harbor entrance. The channel continues W at a dredged depth of 4.9m to the Lunenburg Foundry and Engineering Plant. For more berthing details see the table titled **Lunenburg Harbour—Berth Information**.

Pilotage.—Pilotage is available but is not compulsory. Pilots should be requested from the Atlantic Pilotage Authority 24 hours in advance and confirmed or corrected 6 hours prior to arrival. Pilots board at the mouth of the LaHave River in the vicinity of 44º19.5’N, 64º13.5’W or off Halifax Harbour as arranged.

The master of a ship that is to depart or make a move and requires a pilot must report to Pilots Halifax, 4 hours before the ETD.

Lunenburg Harbour—Pilot Boarding Locations	
Halifax	44°30.4'N, 63°29.5'W.
La Have River	44°15.0'N, 64°19.0'W.
Local Pilots	44°19.5'N, 64°13.5'W.

Contact Information.—See the table titled **Lunenburg Harbour—Contact Information**.

Lunenburg Harbour—Contact Information	
Harbormaster	
Telephone	902-521-2452
Facsimile	902-634-4307
Pilots	
VHF	VHF channels 12 and 16

Anchorage.—No vessel within the harbor limit, except as permitted by the harbormaster, shall be anchored so as to swing nearer than 150m to any wharf, except if necessary when going alongside or leaving a wharf, or in moving from one wharf to another.

There is good anchorage in Luneburg Harbour, in about 5.5m, about 0.3 mile N of Head Rock.

2.38 Mahone Bay (44°27'N., 64°23'W), an extensive bay, is entered between **East Point** (44°21'N., 64°12'W.), the E extremity of East Point Island, and New Harbour Point, about 9

miles NNE. The entrance of the bay is encumbered by islands and shoals. The W side of the bay is also encumbered with islands and shoals, which are so numerous that a complete description is impracticable. There are navigable passages among the islands and shoals, for vessels with local knowledge.

Winds—Weather.—During fogs, which are frequent in July and August, the SW shore of Mahone Bay is usually clear with SW winds.

Tides—Currents.—The tidal rise at Chester is 1.9m at MHWS and 1.7m at MHWN. Southeast gales raise the level of the water in Mahone Bay 0.3m, and NW gales lower it by the same amount.

Tidal currents, both ebb and flood, in the channel between Little Tancook Island and the Aspotogan Peninsula, have a rate of 1 knot. Between Little Tancook Island and Big Tancook Island, the rate is from 1 to 2 knots. The tidal currents are weak in the N part of the bay.

Pilotage.—Pilotage is available, but not compulsory. Pilotage should be requested from the Atlantic Pilotage Authority 24 hours in advance. The ETA should be confirmed or corrected 3 hours in advance.

Anchorage.—There are many anchorages available in the bay, the most important being Chester Harbor and Mahone Harbour.

Caution.—Submarine cables lie across the bay, connecting islands to the shore. These cables can best be seen on the chart.

2.39 Mahone Bay—Approaches.—Pearl Island (Green Island) (44°23'N., 64°03'W.), 12m high, is the most off-lying island off the entrance to the bay, and lies about 5.3 miles SSE of New Harbour Point. A depth of 4m lies about 320m S of the island.

Pearl Island Light is shown from a white square tower on a dwelling in the S part of the island.

East Ironbound Island, 32m high and marked by a light, lies about 1.8 miles S of New Harbour Point. Grampus Shoal, which dries 0.3m, lies nearly 0.1 mile N of the island. Southwest Rock, with a depth of 0.6m, lies about 0.1 mile W of the island. A lighted bell buoy is moored about 0.8 mile S of East Ironbound Light. A bank, with depths of less than 11m, extends about 0.7 mile NW from the W extremity of the island.

Flat Island, 22m high and wooded, lies about 1.5 miles WSW of East Ironbound Island. South Shoal, with a depth of 4.9m, lies about 0.3 mile S of the island. A shoal, with a depth of 7m, extends about 1 mile ESE of South Shoal.

Middle Ledge, with a least depth of 0.9m, lies about 2.5 miles S of Flat Island. The ledge is marked W by a lighted bell buoy. Five Finger Shoal, with a depth of 7.3m, lies about 1 mile S of the ledge.

Bull Rock, which dries 0.9, lies about 1 mile SW of the S extremity of Flat Island. A lighted bell buoy is moored about 0.3 mile SSW of Bull Rock. A shoal, with a depth of 8.8m, lies about 1.5 miles farther SW.

Tanner Island (Gunning Point Island) (44°22'N., 64°12'W.), about 1 mile W of Little Duck Island, is marked by a light shown from a white circular tower with a red band, 6m high. Little Duck Island and Big Duck Island were previously described with Lunenburg Bay in paragraph 2.36.

Hobson Island (Hobsons Island), about 4 miles NW of Little Duck Island, is a remarkable grassy mound, 9.1m high, standing on a gravel spit, which dries. A private residence, with the appearance of a lighthouse, has been constructed on Bluff Head, 0.8 mile WSW. Shoal ground extends about 0.3 mile ENE of the island. A lighted whistle buoy is moored about 1 mile NE of the island. Numerous islets and rocky ledges extend SE from Hobson Island to Little Duck Island.

Northeast Shoal (44°25'N., 64°02'W.), with a depth of 0.9m on Inner Rock, lies about 1.8 miles NNE of Pearl Island. The shoal is surrounded by a bank, with depths of 9.1 to 16.5m, which extends about 1.3 miles SE and 0.5 mile NW of it. Outer Rock, with a depth of 8.8m, lies near the SE end of the bank. A lighted bell buoy is moored about 0.7 mile ENE of Inner Rock.

Seal Ledge (44°28'N., 64°03'W.), which dries 1.2m and generally breaks, lies about 1.7 miles E of New Harbour Point. A bank, with depths of less than 5.5m, extends over 0.5 mile WSW and about 0.2 mile in other directions from the ledge. A 6.7m rocky patch lies about 0.4 mile SSE of the ledge. A lighted bell buoy is moored about 0.6 mile SSE of Seal Ledge.

2.40 Mahone Bay—Entrance.—Big Tancook Island (44°27'N., 64°10'W.), 50.6m high, lies almost in the middle of the entrance to Mahone Bay. Southeast Cove is entered between Southern Head, the SE extremity of the island, and Reef Point, about 0.9 mile N. A ruined breakwater extends about 137m NNE to a depth of 4.6m, from the S side of Southeast Cove.

Rocky ledges extend about 0.2 mile ESE from Reef Point. Grassy Island, 3m high, lies about 0.8 mile SE of Reef Point. Rocky shoals, with depths of 5.2m and 4.6m, lie about 0.2 mile E and 0.2 mile N, respectively, of the island.

West Shoals, with a least depth of 0.9m, extend nearly 0.5 mile W and NW from the W extremity of Big Tancook Island. A rocky bank, with a depth of 3.4m near its outer limit, extends about 0.4 mile SW of the island.

Star Island, 10.7m high, lies about 0.4 mile W of the NW point of Big Tancook Island. Star Island Ledges lie about 0.2 mile and 0.4 mile NE, respectively, of Star Island. The nearer ledge dries 0.3m, and the outer one has a depth of 0.3m.

Northwest Cove lies E of the NW point of Big Tancook Island. A breakwater-wharf extends 95m W, then 78m to the SSW. Along the inside of the outer edge there are depths of 4.3 to 6.1m. A lighted bell buoy is moored about 0.5 mile NNE of Star Island, in the approach to the breakwater-wharf.

Little Tancook Island, 33.5m high and wooded, lies about midway between Big Tancook Island and the Aspotogan Peninsula. On the W side of the island there is a government breakwater-wharf, which extends 156m from shore in a WSW direction, then 30m to the S. In the berth along the inside of the outer section there are depths of 5.2 to 8.2m. A light is shown at the outer end of the breakwater-wharf.

Southeast Shoals lie from 0.5 to 1.5 miles SE of Little Tancook Island. The shallowest part, with a depth of 5.2m, lies about 0.8 mile SE of the island.

2.41 Dares Point (Sandy Cove Point) (44°29'N., 64°07'W.) is the SW extremity of the Aspotogan Peninsula. Rocky patches, with depths of 7.3m and 4.9m, lie about 0.8 mile SE and 0.2 mile SW of the point. A lighted bell buoy is moored about 0.5 mile S of Dares Point.

Submarine cables are laid between the N sides of Big Tan-

cook Island and Little Tancook Island, and between the latter and the mainland, about 0.3 and 0.5 mile N of Dares Point. Submarine cables are also laid between Little Tancook Island and East Ironbound Island.

Directions.—Vessels approaching Mahone Bay should approach the lighted whistle buoy 1.5 miles SSE of Pearl Island and then steer to pass between Pearl Island and Middle Ledge, then alter course W to pass about 1 mile NE of Middle Ledge and SW of the lighted bell buoy moored S of Bull Rocks, keeping N of the 8.8m shoal 1 mile WSW. Vessels should then bring **Quaker Island Light** (44°31'N., 64°14'W.), bearing 338° and in line with the 80m highest point of the black trees on the S side of Haddon Hill, about 2.3 miles NNW. This range leads 0.25 mile W of West Shoal and clear of all dangers into the middle of Mahone Bay.

Vessels approaching from the direction of St. Margarets Bay should pass between East Ironbound Island and Northeast Shoal to join the above-described track, giving a wide berth to the dangers extending SE of Flat Island.

Vessels approaching from the W steer to pass in mid-channel between **Big Duck Island** (44°21'N., 64°09'W.) and Little Duck Island to the W, and Five Finger Shoal and the lighted whistle buoy close W of Middle Ledge to the E. Then pass S of the lighted bell buoy moored S of Bull Rock and join the previously-described track.

Mahone Harbour Approach

2.42 Rafuse Island (44°27'N., 64°14'W.), 28.3m high, lies about 2.3 miles W of Big Tancook Island and is the E of a group of islands extending from the W shore of the bay. East Spit, with a depth of 4.3m, extends about 0.4 mile E of the island, and East Shoal, with a depth of 7.3m, lies about 0.2 mile farther E.

Southeast Shoal, with a least depth of 6.1m, and Haddock Shoal, with a depth of 5.2m, lie about 0.8 mile SE and 1 mile S, respectively, of the S extremity of Rafuse Island.

Bluff Head (44°25'N., 64°15'W.), on the mainland, lies nearly 1 mile WSW of Hobson Island. Middle Patch, with a depth of 5.8m, and Backman Shoal, with a depth of 3.4m, lie about 0.8 mile N and 1.3 miles NW, respectively, of Bluff Head. The latter shoal is marked N and S by buoys.

Caution.—A private residence, in the appearance of a lighthouse, has been constructed on Bluff Head.

Prince Inlet (Princes Inlet) is entered between Bluff Head and Backman Island, 42m high, about 1.7 mile W. The inlet is protected N by several islands. Herman Island, 43m high, the highest, lies about 0.8 mile W of Backman Island, and is joined to the mainland by a causeway. A shallow bank extends about 135m S and E of Little Herman Island, which lies close SE of Herman Island. The inlet provides safe anchorage, in 11 to 14.6m, mud, S of Herman Island.

2.43 Rous Island (44°27'N., 64°18'W.), about 1.3 miles NNW of Backman Island, lies on the N side of the approach to Mahone Harbour. Covey Island lies about 0.7 mile S of Rous Island, on the S side of the approach. Covey Ledge, which dries 0.9m, lies on a bank extending about 0.35 mile E from the N end of Covey Island, and is marked NE by a lighted buoy.

Andrews Island lies about 1 mile W of Rous Island. Trappeans Shoal, with a depth of 7m, lies about 0.5 mile SSE of Andrews Island. Andrews Spit, with a rock awash, extends about 0.3 mile S of Andrews Island; Andrews Shoal, nearly awash, lies about 0.4 mile SSW of the same island.

Strum Island, 34m high, lies about 0.7 mile W of Andrews Island. A lighted buoy lies midway between Strum Island and Eisenhauers Point. Westhaver Island lies about 0.3 mile S of Strum Island and is marked by a light. Strum Shoal, which dries 0.3m and is buoyed, lies about 0.5 mile W of Strum Island.

2.44 The town of **Mahone Bay** (44°27'N., 64°23'W.) lies about 1 mile W, on the W side of Mahone Harbour. The government wharf at the town has a berthing length of 27m, with a depth of 3m alongside. Near the head of the S side of the harbor there are a number of private piers on both sides of the harbor.

There is good anchorage, in about 11m, mud, about 0.3 mile W of Strum Island.

Caution.—A vessel bound for Mahone Harbour should pass N of Backman Shoal and Covey Ledge, then S of Trappeans Shoal and Andrews Shoal, then steer S and W of Westhaver Island to the anchorage. No vessel without local knowledge should proceed W of Strum Shoal. Vessels with local knowledge can use the passage NE of Strum Island, passing between Westhaver Island and Andrews Shoal.

2.45 Chester Harbor Approach.—Quaker Island (44°31'N., 64°14'W.), 25m high and bare, lies in the approach to Chester Harbor. Quaker Island Light is shown from a white pyramidal tower, 6.1m high, with a red horizontal band at the top, on the island. Middle Shoal and Quaker Shoal, with least depths of 4.9m and 5.5m, lie about 1.5 miles SE and 1.3 miles S, respectively, of Quaker Island. Lynch Shoal, a rock with a depth of 3m, lies about 0.5 mile SE of Quaker Island.

Birch Island and Clay Island lie about 0.8 mile SW and 0.5 mile W, respectively, of Quaker Island. Birch Shoal, with a depth of 3.7m, lies about 0.4 mile S of Birch Island. Clay Island Spit, with a depth of 0.9m, extends about 0.4 mile SE from Clay Island. A dangerous underwater rock lies about 290m NW of Birch Island.

The Peninsula, 41m high, forms the W side of Chester Harbor. A submarine power cable is laid E of The Peninsula, about 183m N of Fredas Point.

Mark Island, 19.8m high, lies about 1.3 miles ENE of Quaker Island. Mountain Island and Woody Island, each over 30.5m high, lie close NE and W, respectively, of Mark Island.

Chester Harbor (44°32'N., 64°15'W.), about 5 miles NW of Big Tancook Island, is sheltered SE by **Meisner Island** (44°32'N., 64°14'W.), 23m high and bare.

Two entrance channels, which should only be used with local knowledge, lead to Chester Harbor. The S channel, with a depth of about 7m between Quaker Island and Clay Island Spit, is narrow and tortuous, and crosses the bank extending SW from Quaker Island.

The E channel, though narrow, is deep and leads directly to the harbor. It is approached by passing between Middle Shoal and Coachman Ledge, which is described in paragraph 2.46, then on either side of Mark Island and passing N of Meisner Island to the anchorage.

The government wharf at Chester, at the head of the harbor, is L-shaped and is 50m long, with a face 30m in length, extending to a depth of 3.3m.

Ferry service is provided from Chester to Big Tancook Island and Little Tancook Island, with some crossings to East Ironbound Island. When in Chester, the ferry normally berths along the S face of the government wharf.

Anchorage.—The best anchorage, in 12.8 to 14.6m, mud, lies about 0.2 mile W of the N extremity of Meisner Island. A submarine cable extends NW to the mainland from the N extremity of Meisner Island. Small craft can anchor to the N of Chester Rock.

2.46 Mahone Bay—East side.—Indian Point (East River Point) (44°34'N., 64°10'W.) lies about 3.5 miles NE of Chester. A 46m high water tower lies about 0.5 mile N of the point.

At Indian Point, the public wharf is 53m long and 15m wide, with a depth of 3m at the outer end. A prominent white church and spire are situated close N of the wharf.

Snake Island, 2 miles S of Indian Point, 29m high, is the E of a group of islands which encumber the approach to Chester Island.

Blandford Head (Shoal Cove Head), about 5 miles SSE of Indian Point is the S entrance point of Shoal Cove. Blanford Shoals, with a least depth of 6.4m, lies about 0.5 mile W of the head. A 7.9m rocky patch lies about 1.3 miles WNW of Blandford Head.

At the village of Upper Blandford, about 1.5 miles NNW of Blandford Head, there is an L-shaped wharf, 104m long. The berth on the inside face of the outer end is 20m long with depths of 1.8 to 3m alongside.

Coachman Ledge, which dries 0.6m, lies 2.5 miles W of Blandford Head. The ledge and the surrounding bank are marked by buoys. Southwest Coachman and Northeast Coachman, each with depths of 8.2m, lie about 0.8 mile SSW and nearly 1 mile NNE of Coachman Ledge.

Dares Point (44°29'N., 64°07'W.), the E entrance point of Mahone Bay, lies about 0.8 mile S of Blandford Head, and has been previously described in paragraph 2.41.

The Aspotogan Peninsula

2.47 The Aspotogan Peninsula, with **New Harbour Point** (44°28'N., 64°05'W.) at its S extremity, is a bold headland which rises to a remarkable wooded ridge, 162m high. The peninsula separates Mahone Bay and St. Margarets Bay. Aspotogan has a small public pier, 6m long and 8m wide, with a depth alongside of 2.1m.

White Point (44°30'N., 64°00'W.), the SE extremity of the peninsula, is the W entrance point of St. Margarets Bay.

Gravel Island, 37.2m high and wooded, lies about 1.3 miles SW of White Point. Gravel Island Ledges, which dry 1.8m, extend nearly 0.6 mile S of the island. A 6.7m shoal and a 5.2m shoal lie about 1.3 miles SSE and 0.5 mile ESE, respectively, from the S extremity of the island.

A lighted bell buoy is moored about 1 mile ESE of Gravel Island.

Saddle Island, 22m high, lies with its NE extremity about 0.5 mile WNW of Gravel Island. There is anchorage for small vessels, in 14.6m, to the N of Saddle Island.

St. Margarets Bay

2.48 St. Margarets Bay (44°30'N., 63°58'W.) is an extensive deep bay entered between **Southwest Island** (44°30'N., 64°00'W.) and Middle Point, about 2.5 miles E. Anchorage may be taken in several convenient anchorages as well as in Head Harbour.

Southwest Island, 26.5m high, lies about 0.4 mile E of White Point, the proper W entrance point of the bay. Charley Rock, with a depth of 3.4m, lies about 0.5 mile NE of the S extremity of Southwest Island.

Horseshoe Ledge, which dries 0.6m and is generally marked by breaking seas, lies in the approach to St. Margarets Bay, about 2 miles SSE of White Point. A bank, with depths of less than 18.3m, extends about 0.4 mile NW and 0.5 mile SE from the center of the ledge. A lighted whistle buoy is moored about 0.6 mile SE of the ledge.

The tidal rise at St. Margarets Bay is 1.9m at MHWS and 1.7m at MHWN.

The tidal currents attain a maximum rate of 1 knot in the entrance to St. Margarets Bay. The flood current sets N and the ebb S, but when close inshore the currents follow the trend of the coast.

2.49 St. Margarets Bay—East shore.—Crawford Ledge (44°31'N., 63°57'W.), which dries 0.6m, lies on the outer end of a bank, with depths of less than 3m, extending about 0.2 mile W from a point about 0.5 mile N of Middle Point. Middle Point Rock, with a depth of 6.1m, and a 7.3m shoal lie 0.15 mile SW and 0.25 mile W, respectively, of the ledge. A lighted bell buoy is moored about 0.2 mile W of the ledge.

Paddy Head (44°32'N., 63°57'W.), the NW extremity of Paddy Head Island, 15.2m high, lies about 1.4 miles NNW of Middle Point. Indian Harbour Light is exhibited from a white square tower, 8m high, on the SE end of the island.

Shut-in Island, the most conspicuous island in the bay, 64.6m high, lies about 1 mile N of Paddy Head. The island is steep-to on its SW and NE sides. A shoal patch, with depths of 6.7 to 9.4m, lies within 0.15 mile of the NE shore, about 0.3 mile E of the N point of the island. A spit, with depths of less than 9.1m, extends about 0.4 mile S of the island. A rock, with a depth of less than 1.8m, lies on this spit, about 0.2 mile S of the same point. Only vessels with local knowledge should attempt the passage between this spit and the foul ground W of Mackerel Point, about 0.5 mile SW of the S extremity of Paddy Head.

Anchorage.—There is good holding ground, sheltered from S gales, between Shut-in Island and the mainland E, in 12.8 to 14.6m. Vessels proceeding to the anchorage should pass not less than 0.15 mile NE of the island to clear the shoal off its NE side.

2.50 Lukes Island (44°35'N., 63°56'W.), 13.4m high, lies nearly 1.8 miles NNE of Shut-in Island and about 0.4 mile off the mainland SE and E. The island lies on a bank, with depths of less than 3.7m, extending about 0.1 mile off the island. The N and SE sides of Lukes Island terminate in stony steep-to spits. A detached 8.2m patch lies midway between the island and the mainland SW. Two drying rocks were reported to lie between Luke Island and the mainland SE.

Anchorage.—There is good anchorage, sheltered from all directions, in 12.8 to 14.6m, about 0.3 mile E of the N point of Lukes Island, in Mosher Cove.

Franks George Island, 23m high, lies about 0.6 mile N of Lukes Island. Big Thrum, an islet 6.1m high, lies about 0.2 mile W of the S extremity of Franks George Island. Little Thrum, an islet 0.6m high, about 0.3 mile WSW of Big Thrum, lies on a bank with depths of less than 5.5m extending about 0.4 mile WSW and W of Big Thrum.

Ringdove Shoal, with a least depth of 1.8m, lies about 0.8 mile W of the N extremity of Franks George Island. A lighted bell buoy marks the W side of the shoal.

Wedge Island (44°37'N., 63°57'W.), 9.1m high, lies about 0.8 mile NNW of Franks George Island. A bank, with a depth of 3m near its outer end, extends about 0.2 mile WSW from the S end of the island. John Davies Point (Davy Point), the S entrance point to Village Harbour, lies about 0.8 mile NNE of Wedge Island. Rat Rock, close SW of Wedge Island, shows a light at an elevation of 6.8m from a mast 4.5m high. An L-shaped public wharf, 33m long and 18m wide, extends from the E shore of the harbor. There are numerous fishing sheds and stages.

2.51 French Village Harbour (44°38'N., 63°56'W.) is entered between Davy Point and Indian Point, an islet 3.7m high, about 0.7 mile NNW. The islet is connected to a peninsula of the mainland, about 0.7 mile E, by a drying shoal on which there is a larger islet. A bank, with depths of less than 3.7m, extends about 0.2 mile S of Indian Point. The harbor extends about 1 mile NE to Croucher Point, then about 0.5 mile N. French Village, a fishing settlement and summer resort, lies on the SE shore of the harbor.

John Davies Shoal (Davy Rock), with a depth of 2.7m, lies in the entrance to French Village Harbour, about 0.3 mile NW of Davy Point. Harbour Spit, with a depth of less than 3.7m, extends about 0.1 mile from the shore from a position about 0.2 mile E of Davy Point. Ambrose Rock, with a depth of 6.1m, lies about 0.6 mile NE of Davy Point.

Anchorage.—There is an anchorage, in 20.1m, mud, about 0.4 mile NE of Davy Point. Vessels bound for the harbor pass midway between Davy Point and Davy Rock, then proceed to the anchorage, giving a wide berth to the S shore to avoid Harbour Spit.

2.52 Head Harbour is entered between **Croucher Island** (44°38'N., 63°58'W.) and Indian Point, about 1 mile SE. The harbor has general depths of over 14.6m, but there are shallower patches.

Croucher Island, 18.3m high and marked by a light, is steep-to on its NW and SE sides. A rock, with a depth of 2.1m, lies about 0.1 mile S of the island. A spit, mainly above-water, extends about 0.3 mile NNE of the island. Wood Island lies near the center of the spit. Strawberry Island lies close E of the N end of the spit, about 0.4 mile NE of Croucher Island. A 9.8m patch lies about 0.1 mile SE of Strawberry Island.

Croucher Island Shoal, with a depth of 6.4m, lies about 0.4 mile WNW of the N end of Croucher Island. A 7.6m patch lies about 0.1 mile E of the SE extremity of the same island.

Potato Island, about 0.3 mile N of Strawberry Island, lies on a bank extending from the mainland N. The passage between the two islands is available only to vessels with local knowledge.

Clam Island lies nearly in the middle of the harbor, about 1.3 miles NE of Croucher Island. A rock, with a depth of 1.8m or less, lies about 0.1 mile N of the island.

Sand Cove Shoal, with a depth of 8.2m, lies nearly 0.5 mile E of Strawberry Island. A shoal extends W from the mainland E of Sand Cove Shoal. There is a depth of 6.1m about 0.2 mile from the shore.

Marsh Gutter Rock, with a depth of 6.4m, lies nearly 0.4 mile W of Clam Island. A shoal, with a depth of 7.3m, lies nearly 0.5 mile NE of the same island.

Anchorage.—Vessels may anchor NE of Strawberry Island, but the best anchorage, in 14.6m, mud, lies about 0.3 mile NE of Clam Island.

Directions.—Vessels approaching Head Harbour pass W of Ringdove Shoal Lighted Bell Buoy, then steer to pass midway between Croucher Island and Indian Point, and then midway between Strawberry Island and Sand Cove Shoal. Course is then altered to the anchorage NE of Strawberry Island, or continued NNE, passing W of Clam Island to the anchorage, giving a wide berth to the rock about 0.1 mile N of the island.

2.53 Boutilier Point (Boutiliers Point) (44°39'N., 63°58'W.), about 0.7 mile N of Croucher Island, is the E entrance point of a small bay leading into the Ingram River. Meiseners Point (West Head), the W entrance point, lies about 0.5 mile W of Boutiler Point.

Ingramport (44°41'N., 63°58'W.) lies on the W side of the bay, about 0.7 mile N of West Head. A public wharf, 46m long, extends from the shore 0.4 mile E of Boutiliers Point. There are depths of 3 to 5.5m along the outer 20m length of the wharf.

2.54 St. Margarets Bay—West shore.—Owls Head (44°31'N., 64°00'W.), a prominent headland, 34m high, at the SE end of a peninsula, lies about 0.7 mile NNE of Southwest Island.

Northwest Cove is entered between the N point of the above-mentioned peninsula and Tilley Point, about 0.7 mile NNW. Horse Island lies in the entrance to the cove. Horse Rock, with a depth of 3.7m, and a rocky patch, with a depth of 5.2m, lie about 0.1 mile WNW and 0.1 mile S, respectively, of Horse Island. A government wharf, 66m long and 12m wide, with a depth of 4.6m alongside, lies about 0.5 mile SW of Tilley Point, on the N shore of the cove.

Anchorage.—Small vessels may anchor in Northwest Cove, in a depth of 11 or 12.8m, but this anchorage is very exposed.

Measured distance.—Two pair of beacons marking a measured distance of 1,855.6m in a 154.5°-334.5° direction, are situated on the W shore of St. Margarets Bay, in the vicinity of Northwest Cove. The beacons are white diamond-shaped, with a red vertical stripe. The S front beacon is on Horse Island; the remainder are on the mainland.

2.55 The coast between Tilley Point and Birch Head, 2 miles NNW, then to Fox Point, about 2 miles farther NNW, is bold and rugged.

Mill Cove (44°56'N., 66°54'W.), an open bay in which vessels can find shelter from W winds, lies between Birch Head and Fox Point. A government breakwater, in the S part of Mill

Cove, is 160m long, with a depth of 9.1m at its head.

Midway between Fox Point and Green Point, about 1.3 miles N, there is an L-shaped breakwater-wharf which extends 64m E, then 78m NE from the shore, with depths of 3.4 to 4m along the inner face of the outer section.

Hubbards Cove is entered between **Green Point** (44°37'N., 64°03'W.) and Red Bank, about 0.8 mile ENE. Hubbards Cove Light is shown on Green Point.

Slaunwhites Ledge (Slaughenwhite Ledge), which dries 1.5m, and North Shoal, which dries 1.2m, lie in the entrance to Hubbards Cove on a shallow bank about 0.5 mile E of Green Point. A lighted bell buoy is moored about 0.8 mile SE of Hubbards Cove Light.

Green Point Shoal, with a depth of 5.5m, lies about 0.3 mile N of Hubbards Cove Light.

Hubbards Cove has general depths of 7.3 to 12.8m and affords good shelter. Anchorage may be taken as convenient NW of Green Point Shoal.

Caution.—Vessels proceeding to Hubbards Cove should pass W of Slaughenwhite Ledge Lighted Bell Buoy to avoid fishing nets in the area NE of it. Then steer to pass between Green Point and Slaughenwhite Ledge, then NE of Green Point Shoal to the anchorage.

St. Margarets Bay to Mars Head

2.56 Peggys Point (44°29'N., 63°55'W.), marked by a light, lies about 1.3 miles SE of Middle Point. The picturesque and well-known Peggys Cove, a small shallow inlet, is located about 0.3 mile NE of the point. In the cove is a T-shaped wharf, with an outer end 12m long, having a depth of 1.8m alongside.

Peggys Point Light is shown from a white octagonal tower, 15m high, on the point.

Halibut Rock, which dries 0.9m, lies about 0.1 mile SW of Peggys Point. A bank, with a least depth of 13.4m, lies about 1.3 miles W of the same point.

Between Peggys Point and **Mars Head** (44°26'N., 63°43'W.), about 9 miles ESE, the coast and the islands fronting it are generally composed of bare white granite, and are broken by several inlets which recede some distance into the land. Of these inlets Port Dover; Shag Bay and Blind Bay, with a common entrance; and Prospect Bay are available for shipping. Back Bay, with its entrance about 1 mile NNW of Mars Head, is open SW, obstructed by rocks, and available only to small craft with local knowledge.

Indian Island, 19.2m high, lies about 1.5 miles E of Peggys Point. Taylor Island, 25m high, lies about 0.5 mile farther E. Corney Rock, 6.1m high, lies about 0.1 mile SW of the W end of Taylor Island.

Dover Castle, about 0.3 mile SE of the E end of Taylor Island, is a remarkably bare rocky islet, 14m high.

2.57 Approach to Port Dover, Blind Bay, and Shag Bay.—The approach to these bays lies between Dover Castle and **Shag Head** (44°29'N., 63°49'W.), about 1.7 miles E.

Black Rock, 0.6m high, lies about 0.3 mile ESE of Dover Castle, on a shoal with depths of less than 11m extending SE from the islet. A rocky patch, with a depth of 3.4m, lies about 230m SSE of Black Rock. A lighted whistle buoy is moored about 1.4 miles SSW of Dover Castle.

Shag Bay Breakers, a rocky ridge, with a least depth of 1.2m, lies with its N extremity about 1.1 miles ESE of Dover Castle. A lighted bell buoy is moored about 0.3 mile SW of the S extremity of the ridge, and a black spar buoy is moored at the N end of the ridge.

Green Shoal, with a depth of 1.8m, and marked N by a black spar buoy, lies about 0.3 mile E of the N end of Shag Bay Breakers. A rock, with a depth of 10.4m, lies about 0.2 mile NE of Green Shoal.

White Island, the S side of which is steep-to, lies about 0.8 mile NE of Dover Castle. Islets and rocks extend about 0.3 mile NE of the island, and there are a number of islands and rocks between it and the mainland NW.

Port Dover

2.58 Port Dover (44°29'N., 63°52'W.), entered between Dover Castle and White Island, is protected from the S by several islands, the largest of which is Taylor Island.

Fleming Island, 12m high, lies about 0.2 mile NE of the E extremity of Taylor Island. Long Island lies about 0.5 mile N of Fleming Island. Callahan Island lies close off the SW side of Long Island. Dover Light is shown from the SE end of the island.

Cabbage Garden Shoals lie about 320m NE of Fleming Island. The NW shoal dries and the SE shoal, with a depth of 2.4m, is called Sand Shoal. Fleming Ledge, 0.6m high, lies about 0.2 mile NE of the N end of Fleming Island. The above dangers in the entrance to Port Dover are buoyed.

Depths—Limitations.—There is an L-shaped pier at West Dover, 43m long with an outer face 21m long. There is a least depth of 4.9m along the outside face and 3.4m on the inside face.

Anchorage.—There is anchorage for small vessels, in 16.5 to 18.3m, mud, between Callahan Island and Fleming Island.

Directions.—Vessels bound for Port Dover should pass SE of the can buoy marking the 3.4m shoal SSE of Black Rock, then when clear of the 4.9m patch about 230m N of Black Rock, alter course NW to pass between Fleming Island on the S, and the spar buoys marking Cabbage Garden Shoals and Fleming Ledge on the N. When N of Fleming Island, alter course for the anchorage.

Blind Bay and Shag Bay

2.59 Blind Bay is entered between **Black Point** (44°30'N., 63°50'W.) and Leary Point, about 0.7 mile SW. The bay, although encumbered with numerous islands and rocks, affords good shelter.

Round Rock, with a depth of 1.2m and steep-to on all sides, and Middle Ground, awash at its N end, and 0.4 mile NNE, respectively, of Leary Point. The above lie about 320m ENE, and 0.4 mile NNE, respectively, of Leary Point. The above dangers are marked by buoys.

Black Point Ledge, 0.9m high, lies about 0.3 mile S of Black Point. Frying Pan Rock, which dries 1.5m and is marked by a buoy, lies about 0.1 mile SE of Black Point Ledge.

Myra Island (Christian Island), 12m high, lies about 0.5 mile NNW of Black Point. A ledge, above-water, lies about 0.1 mile N of the island.

Depths—Limitations.—There is an L-shaped pier at East Dover village near the head of Leary Cove, with an outer face 12m long and an alongside depth of 3m. A light stands on the pier head.

Anchorage.—There is good anchorage, in 11 to 12.8m, mud, about 0.2 mile NNE of Myra Island.

2.60 Shag Bay is entered between **Shag Head** (44°29'N., 63°49'W.) and Black Point, nearly 1 mile NNW, and affords good shelter.

The channel at the entrance to the bay is divided into two by Outer Gull, an islet 13m high, located 0.25 mile NW of Shag Head, and Inner Gull, an islet 17m high, which lies about 0.3 mile NE of Outer Gull. Gull Shoal, with a depth of 1.8m and marked by a buoy, lies midway between the islets.

Cochran Island lies near the head of the bay, with its S extremity about 2.5 miles NNE of Shag Head. Cannon Rock, 2.4m high, lies about 275m SE of the S extremity of the island. A 2.4m rocky patch lies midway between them.

There is a public pier, 30m long, on the mainland E of Cochrans Island and about 0.3 mile N of Shad Bay village.

Anchorage.—There is anchorage, in 14.6 to 16.5m, mud, about 0.2 mile SSW of Cochran Island.

Directions.—Approaching from the E, keep Black Point bearing 341°, just open W of Shag Head, which leads between the dangers extending W from Betty Island on the E, and Kitiwiti and Green Shoals on the W. Caution must be used to avoid the 10.4m rock lying midway between Green Shoal and Shag Head.

After clearing the dangers, vessels bound for Shag Bay steer to pass between Shag Head and Outer Gull, and through the E entrance channel passing E of Inner Gull and up the bay to the anchorage.

Approaching from the W, keep the W extremities of Outer and Inner Gull in line bearing about 037°, until past Shag Bay Breakers. Then vessels bound for Shag Bay alter course to pass through the W channel between the Gull Islets and Frying Pan Rock, giving a wide berth to the bank extending about 0.1 mile NW of Outer Gull.

Prospect Bay—Approach

2.61 **Betty Island** (44°27'N., 63°46'W.), 28m high and mainly wooded, lies off the entrance to Prospect Bay. Betty Island Light is shown from a white tower, 12m high, on Brig Point, the S extremity of the island.

Devereux Shoal, with a least depth of 5.2m, and Southwest Shoal, with a depth of 3m, lie about 0.2 mile and 0.3 mile SW, respectively, of Brig Point. A buoy marks the S side of Devereaux Shoal.

Rocky patches, with depths of 9.8m and 5.5m, which break in bad weather, lie about 0.7 mile SSE and 0.5 mile S, respectively, of Brig Point. Southeast Shoal, with a depth of 4.6m, and which breaks, lies about 0.7 mile E of the same point.

A bank on which are numerous shoals and rocks, above and below-water, extends about 1 mile WNW from the W side of Betty Island. Hopson Island, 25.3m high, lies near the outer edge of this bank. A rock, which dries 0.3m, and a 5.5m patch lie about 0.2 mile SW and 0.2 mile W, respectively, of the S extremity of Hopson Island.

Betty Island Light

Norris Bald Rock, 7.3m high, lies about 0.5 mile NW of Hopson Island and midway between them is White Horse Rock, with a depth of 2.7m. A rocky patch, with a depth of 7.9m, lies about 0.2 mile ENE of Norris Bald Rock.

Kitiwiti Shoal, with a depth of 9.1m, on which the sea breaks in bad weather, lies about 0.8 mile W of Norris Bald Rock.

2.62 **Saul Point** (44°28'N., 63°47'W.), the E extremity of Saul Island, lies about 0.8 mile NE of Norris Bald Rock. Saul Island Light is shown from a mast on a rock close to Saul Point.

Prospect Bay is entered between **Redmond Island** (44°28'N., 63°47'W.), close NE of Saul Point, and Hearn Island, 33m high, about 0.4 mile E. The bay affords shelter for small vessels. The times of HW and LW in the bay are affected by the direction of the wind.

A lighted bell buoy is moored about 0.3 mile ESE of Saul Point.

A rock, which dries 1.8m, lies about 135m SE of the S extremity of Redmond Island; there are depths of 9.8 to 10.7m in the entrance between Hearn Island and Redmond Island.

An L-shaped public pier, with an outer face 16m long and a depth alongside of 2.7m, is located at Prospect. It is approached Between Saul Island Light and a rock close N. A light stands on the pier head.

Anchorage.—There is anchorage, in 12.8 to 16.5m, N of Hearn Island.

For vessels approaching from the E and having local knowledge, there is a buoyed channel between Betty Island and Shannon Island, about 0.4 mile NE.

Pennant Bay

2.63 Pennant Bay is entered between **Mars Head** (44°26'N., 63°43'W.), the SE extremity of Mosher Island, 21m high, and Pennant Point, about 3 miles E. The bay, although

occupied by numerous islets and shoals, affords shelter to vessels with local knowledge. Hospital Hill, 76.2m high, about 3 miles NNW of Pennant Point, is the highest hill on the bold N shore of the bay. A lighted buoy is moored about 2 miles SSW of Pennant Point.

Grampus, with a depth of 3.4m, lies near the S end of foul ground extending about 0.5 mile SSW of Mars Head. A lighted bell buoy is moored about 0.3 mile S of Grampus.

Dogfish Ground, with a least depth of 12.8m, lies about 1.5 miles SE of Mars Head.

Woody Island lies about 0.8 mile NNE of Mars Head. Broad Rock, which dries 1.5m, lies about 0.3 mile SSE of Woody Island. Flatroof Shoal, with a depth of 3.7m and marked by a buoy, lies about 0.6 mile ESE of Broad Rock.

The Puffer, a rock nearly 1.3 miles ENE of Mars Head, with a depth of 1.8m or less, always breaks. It is marked SE by a buoy. A shoal, with a depth of 2.4m, lies about 0.4 mile NE of The Puffer and is marked NE by a buoy.

2.64 Pennant Island (44°27'N., 63°40'W.), 27m high, lies about 1 mile NNW of Pennant Point. Black Rock and Bald Rock, each 0.9m high, lie about 0.1 mile SW and SE, respectively, from the S end of the island. The Seven Islands and Mackerel Island lie on the foul ground extending about 1 mile WNW from Pennant Island.

Broad Shoal, on which there are several rocks, awash, extends about 0.2 mile SW and 0.2 mile W of Pennant Point.

Terence Bay, the NW arm of Pennant Bay, is entered NE of **Tennant Point** (44°28'N., 63°42'W.), located about 1.5 miles NNE of Mars Head. Terence Bay Light is shown from Tennant Point.

Church Point lies about 0.5 mile NW of Tennant Point. At Terence Bay Village, W of Church Point, there is a T-shaped public wharf extending 58m to an outer end, which is 38m long and has a least depth of 7.3m along the outer face.

Terence Rock, 6.1m high and steep-to on its W side, lies in the entrance to the bay, about 0.5 mile ESE of Tennant Point; a lighted buoy is moored about 0.2 mile E of the rock. Black Shoal, which dries 1.5m, and a rocky patch, with a depth of 4.9m at its outer end, lie about 0.2 mile SE and 0.2 mile E, respectively, of Tennant Point.

Anchorage.—There is anchorage for small vessels, in 13.7m, about 0.2 mile NNE of the government wharf.

Directions.—Vessels proceeding to Terence Bay should steer for a position about 2 miles SSW of Pennant Point, then Pennant Island, and bring the NE side of Terence Rock in line with Church Point, bearing 310°. Then steer on this range until within about 0.3 mile of Terence Rock, when course is altered to pass about 0.1 mile NE of Terence Rock, and continue to steer NNW until the SW extremity of the Seven Islands is in line with the SW edge of Pennant Island, astern, bearing 125°, which leads clear of all dangers to the anchorage.

Vessels approaching from the W should pass 0.5 mile S of Grampus Lighted Bell Buoy, and then steer for the lighted buoy E of Terence Rock, but this leads close NW of a shoal with a depth of 8.8m, about 1 mile E of Mars Head. When Church Point comes in line with the NE side of Terence Rock, the vessel should follow the previously-described track.

2.65 Pennant Harbour (44°28'N., 63°38'W.), in the NE part of Pennant Bay, lies NE of Saddle Island and Martin Island. The harbor is entered E of Thrumcap Island, 9.1m high, which lies about 0.2 mile E of Martin Island.

Middle Ground, with a depth of 4m and marked E and W by spar buoys, lies in the approach to the harbor, about 0.5 mile E of the NE extremity of Pennant Island.

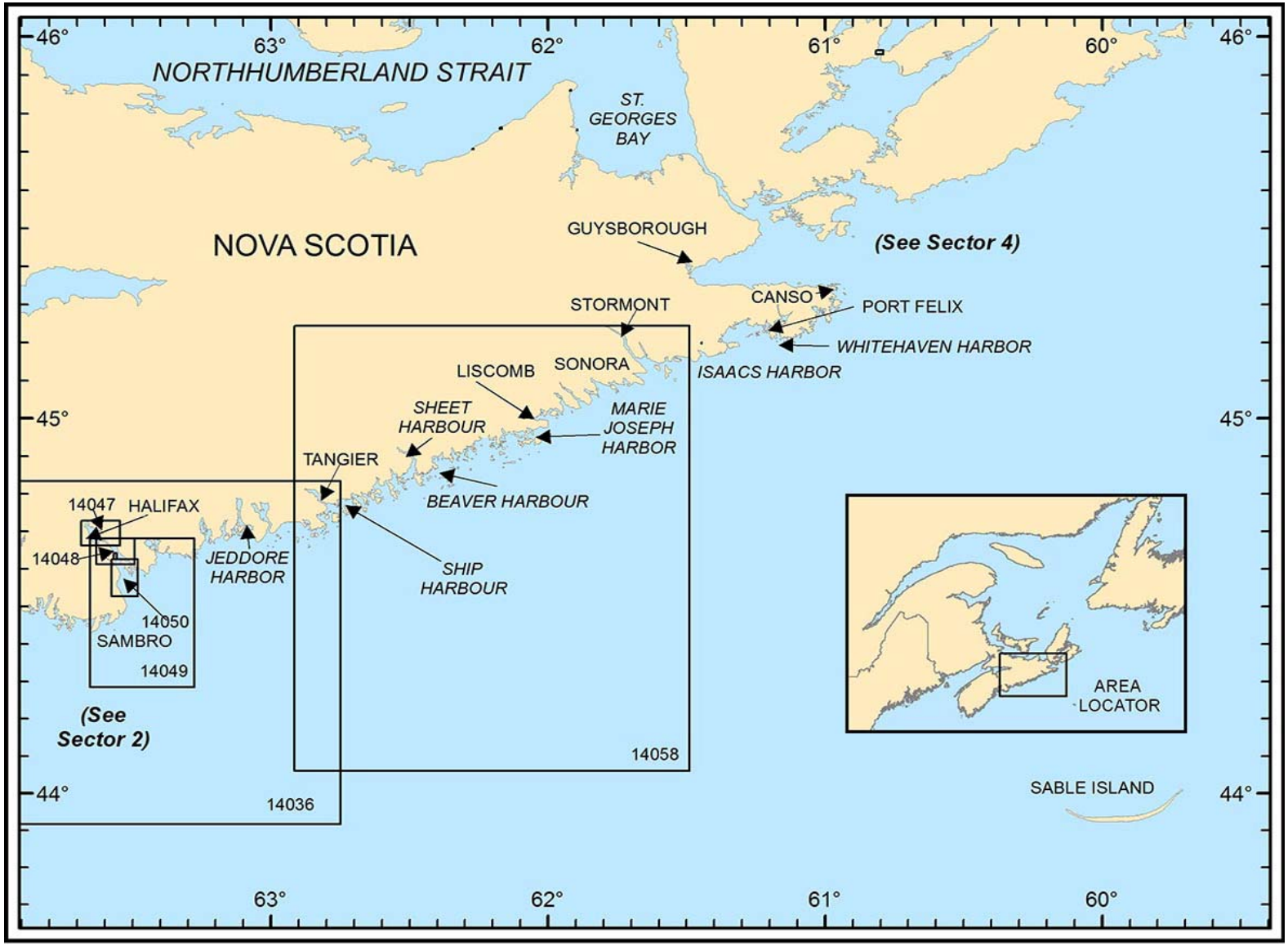
A rocky patch, with a depth of 3.7m and marked N and S by spar buoys, lies in the middle of the harbor, about 0.3 mile NE of Thrumcap Island.

There is anchorage for small vessels, in 11 to 12.8m, mud, about 0.2 mile N of Thrumcap Island.

Directions.—A vessel proceeding to Pennant Harbour should steer for a position about 2 miles SSW of Pennant Point, and then bring the W shoulder of Pennant Island into line with Hospital Hill, bearing about 351°.

When clear of Broad Shoal, steer to pass 0.1 mile E of Bald Rock and then for Thrumcap Island, passing E of Middle Ground. Vessels should then pass E and N of **Thrumcap Island** (44°28'N., 63°39'W.) and steer about midway between that island and the 3.7m rocky patch, and as required for anchorage.

Caution.—Two submarine cables extend SE from Pennant Harbour extending beyond the outer limit of the traffic regulating system.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **3** — CHART INFORMATION

SECTOR 3

NOVA SCOTIA—SOUTHEAST COAST—PENNANT POINT TO CAPE CANSO

Plan.—This sector describes the SE coast of Nova Scotia from Pennant Point, the W entrance point of Sambro Harbour, to Cape Canso, the W entrance point of the Strait of Canso. The sector includes Halifax Harbor, one of the finest natural harbors in the world. The arrangement of the sector is from SW to NE. Sable Island and Nova Scotia Banks are described in paragraph 3.58 and paragraph 3.59, respectively.

General Remarks

3.1 Ice.—The area from Halifax to Canso is ice-free all year except for new and young ice which forms in the bays and inlets during the cold spells of January and February. This ice soon melts if it is carried out to sea by wind and tidal current, and is never a hindrance to navigation. Local tugs or government icebreakers are used to open some of the harbors after ice has formed or to maintain passage into a port despite weather conditions. In mild winters even the harbor ice does not form.

Tides—Currents.—The tidal currents between Cape St. Marys and Cape Canso are weak and irregular. There is usually, though not continuously, a current setting along the coast to the W; sometimes exceeding a velocity of 1 knot.

Pilotage.—Pilotage for ports in this sector is obtained through the Atlantic Pilotage Authority. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further information.

Caution.—Between Halifax and Cape Canso, it is not advisable to approach the coast within approximately the 100m curve; it must be kept in mind that this depth may be found within a distance of 3 miles of some of the most formidable dangers on the coast such as Lockwood Rock, in the approach to Marie Joseph Harbor, which lies within 1 mile of that depth.

Ocean Data Acquisition System (ODAS) buoys are encountered in the area covered by this sector. ODAS buoys, which vary in size and have no navigation significance, are used for environmental reasearch. These buoys are frequently moved from place to place without notice and should be given a clearance of at least 1 mile.

A research project named the Ocean Tracking Network (OTN) is underway off the entrance to Halifax. A line of approximately 40 anchored moorings, which will be extended, with instrumentation rising about 1m off the bottom, are spaced approximately 800m apart and will remain in place until early 2013.

Sambro Harbour Approach

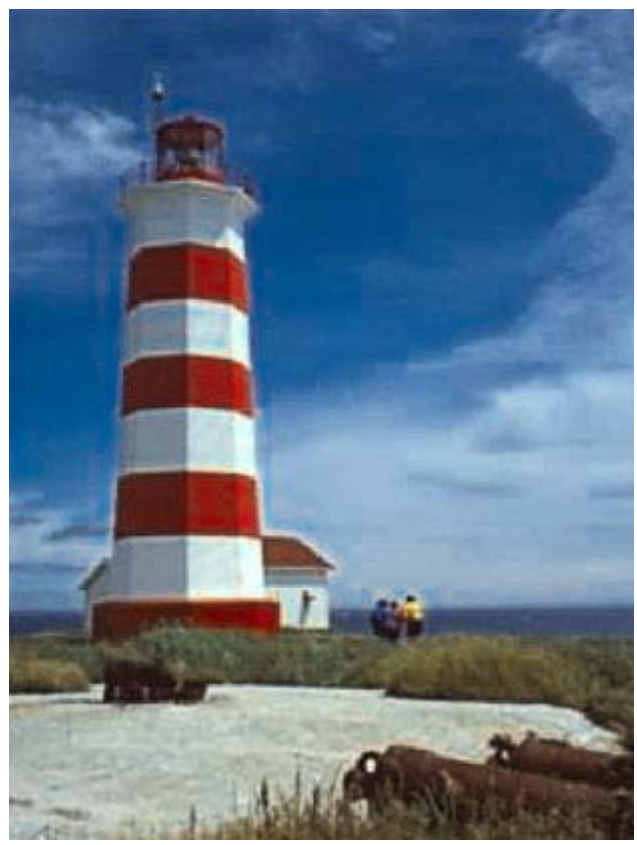
3.2 The approach to Sambro Harbour lies between **Pennant Point** (44°26'N., 63°39'W.) and Sambro Island, about 3.5 miles E. There are numerous banks and shoals in the approach, and only the more important will be described.

A danger area, containing a sunken unexploded torpedo, is charted E of Pennant Point.

Bull Rock, which dries 1.8m, lies about 0.8 mile ESE of Pennant Point. Thrumcap Rock, with a depth of 5.5m, lies about 0.5 mile farther ESE.

Paddle Rock, with a depth of 3m, about 1.5 miles E of Pennant Point, lies on the S part of a bank with depths of 9.1m and less. Bigfish Shoal, with a least depth of 3.4m, about 0.5 mile ENE of Paddle Rock, lies near the E extremity of the bank. Torpey Ledge, with a least depth of 0.3m, lies on the N part of the same bank, about 0.5 mile NNE of Paddle Rock. Thrumcap Rock, Paddle Rock, and Bigfish Shoal are marked SE by buoys.

Smithson Rock, with a depth of 6.1m, lies about 2 miles SE of Pennant Point. A lighted bell buoy is moored about 0.3 mile SW of Smithson Rock.



Sambro Island Light

Merlin Rock (44°25'N., 63°36'W.), with a depth of 6.4m, lies about 1.5 miles SW of Sambro Island. From Merlin Rock, a bank, with depths of less than 18.3m, extends N to the mainland. Colt Shoal, rock, with a depth of 4m, lies on the N end of a bank which extends N of Merlin Rock. Mare Shoal and Horse Shoal, rocks with depths of 2.1m and 1.5m, respectively, lie on this bank. Colt and Mare Shoals are marked W by buoys.

3.3 Sambro Island (44°26'N., 63°34'W.), 15.2m high, is surrounded by foul ground extending about 0.8 mile S and 1.5 miles ENE from it. Sambro Channel, which separates Sambro Island and the shoals in its vicinity from the mainland to the N, is partially buoyed and is used by small craft with local knowledge. Sambro Light is shown from a white octagonal tower, 25m high with red bands, on the island.

Sambro Ledges, with uneven depths, extend 6 miles SSE from Sambro Island. Outer Bank, with a least depth of 21.9m, lies on the outer part of Sambro Ledges, about 4.5 miles SSE of Sambro Island.

Barse Ground, with a depth of 16.8m, and Shoal Ground, with a least depth of 13.4m, lie about 2.3 miles S and 2 miles SE, respectively, of Sambro Island. Hennesy Bank, rock, with a depth of 17.4m, lies about 1.7 miles ESE of Sambo Island. In bad weather, the sea almost breaks on these banks.

Southwest Breaker, at a depth of about 0.3m and which usually breaks, lies about 1.5 miles SSW of Sambro Island.

3.4 Pennel Shoal (44°25'N., 63°34'W.), with a depth of 6.7m, is the S danger on the bank and lies about 0.8 mile S of the island. Shag Rock, 0.9m high, lies about 0.4 mile SW of Sambro Light. Other dangerous shallow and drying patches extend up to 1.25 miles ESE through SSE of Sambro Light.

Broad Breaker, which dries 0.9m, lies about 1 mile E of Sambro Island. Blind Sister, with a depth of 3.7m, lies about 1.4 mile farther ENE.

The Sisters (44°27'N., 63°32'W.), two of which dry 1.2m, lie about 1.5 miles ENE of Sambro Island; a lighted bell buoy lies SSE of The Sisters.

Black Rock, 5m high, lies about 0.3 mile W of the N drying patch of The Sisters. Ede Rock, with a depth of 3m, lies about 0.5 mile N of Black Rock.

Wippy Rock, with a depth of 0.9m, lies about 0.3 mile W of Sambro Island. Gull Rock, 7.6m high, and Whaleback Rock, which dries 1.5m, lie about 0.3 mile NW and 0.7 mile NW, respectively, of Sambro Island.

A submerged power cable lies between Sambro Island and Fink Cove, approximately 2 miles NNE.

Inner Sambro Island, about 1 mile NW of Sambro Island, is about 7.6m high and steep-to on its W end. **Cape Sambro** (44°27'N., 63°35'W.) lies about 275m N of Inner Sambro Island.

Fairweather Rock, 3m high, and Middle Ground, with a least depth of 5.8m, lie about 0.5 mile SSW and 0.5 mile W, respectively, of the W extremity of Inner Sambro Island.

3.5 Sambro Harbour (44°28'N., 63°36'W.) is entered close W of Cape Sambro. Although the heavy seas accompanying SW winds are broken by the many ledges S of the entrance, the harbor affords only limited shelter for vessels with local knowledge.

Cowley Rock, with a depth of 3.7m and marked by a buoy, lies in the entrance to the harbor, about 0.3 mile NNW of the W extremity of Inner Sambro Island. Connor Reef, several rocks, awash, extends about 0.3 mile offshore from the W entrance point of the harbor.

Isle of Man, a small islet, 4.6m high, lies about 0.5 mile NW of Cape Sambro. Bull Point, a low headland, is located near the head of the harbor, about 0.5 mile to the N of the Isle of Man.

Depths—Limitations.—A government wharf at Sambro, about 0.3 mile NW of Bull Point, is T-shaped and 108m long with an outer face 85m long. It extends from the NW shore of Sambro Harbour. There is a least depth of 4.6m along both sides of the outer end of the wharf. A buoyed channel leads to the pier.

Anchorage.—The best anchorage is in 11 to 16m, about 0.1 mile N and NE of the Isle of Man.

Directions.—Vessels approaching Sambro Harbour from the S or E should pass E of **Southwest Breaker Lighted Whistle Buoy** (44°24'N., 63°34'W.), then steer for Inner Sambro Lighted Buoy, moored midway between Fairweather Rock and the W extremity of Inner Sambro Island, taking care to avoid the 7.3 and 5.5m patches about 1 mile and 0.5 mile SSE, respectively, of the W extremity of Inner Sambro Island. After rounding the W end of Inner Sambro Island, alter course to bring its W end in line bearing 202° with Fairweather Rock, astern, to clear Cowley Rock and off-lying shoal. Then steer to pass E of the Isle of Man and then to the anchorage.

Vessels approaching from the W steer to pass midway between **Smithson Rock** (44°24'N., 63°37'W.) and Thrumcap Rock, and then between Colt Shoal and Bigfish Shoal into the previously-described channel. This route should not be used without local knowledge.

Note.—A lifeboat station is situated at the Sambro public wharf and operates within a 50-mile radius of its base. All distress situations and calls for assistance should be communicated to RCC Halifax via the nearest coastal radio station or by any other available means.

Halifax (44°39'N., 63°35'W.)

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3.6 Halifax Harbor is entered between **Chebucto Head** (44°30'N., 63°31'W.) and Devils Island, about 5.5 miles NNE. Devils Island, 4.6m high and treeless, is almost joined to Hartlen Point, about 0.4 mile NNE, at LW by a shingle spit. Chebucto Head, 30.5m high, is composed of whitish rock.

The harbor currently accommodates oil tankers greater than 100,000 tons capacity and has long served as a naval base. Several naval surface and submarine exercise areas are situated in the approaches to Halifax Harbor. Canadian Forces exercise areas are located in the approaches to Halifax Harbor. Naval vessels may be encountered in these areas.

The coast in the vicinity of Halifax is of moderate elevation, the hills near the shore are seldom more than 61m high. To the E of the harbor, as far as Jeddore Head, almost all the headlands are composed of cliffs of reddish sand, clay, and boulders; while to the W, as far as Mars Head, white granite predominates. The color of the cliffs are a good guide as to whether a vessel is E or W of the entrance.

Although the dangers in the approaches necessitate great caution during fogs, which are prevalent and accompany all winds from seaward, the harbor is easier to access than any other large harbor on this coast. Halifax Harbor is a terminus and port of call for shipping all year, as ice is never a problem.

The city of Halifax, the capital of the Province of Nova Scotia, is situated on the W side of the harbor, about 8 miles NNW of Chebucto Head. The city of Dartmouth is situated across the

harbor from Halifax. The Narrows, about 1 mile above Halifax, connects Halifax Harbor to Bedford Basin, an excellent landlocked basin.

Halifax is one of the largest commercial ports in Canada. Over 10 million tons of cargo are handled from the more than 2400 vessels that call at the port every year. In 2011, container traffic through the port was about 410,000 TEU's. Halifax is also a leading port of call for cruise ships operating in eastern North America. In 2011, there were 122 cruise ship calls at the port.

Facilities at the Port of Halifax include two container terminals, a ro/ro facility, a gypsum terminal, oil docks, vehicle handling and trans-shipment facility, a grain elevator, general cargo and multi-purpose facilities. There is over 135,000 square meters of open area and shed space. The port is served by rail, road and air transportation to major destinations in North America.

Under the provisions of the Canada Marine Act, the Halifax Port Authority has the duty to carry out appropriate measures for the maintenance of order and the safety of persons and property in the port. It has the power to control ship traffic for the purpose of promoting safe and efficient navigation and environmental protection. These regulations are published in the Port Authorities Operations Regulations, which are available from the Port Authority.

The regulations require that no vessel shall move in the harbor at a rate of speed that may endanger life or property. The Port Authority may order vessels to move, use tugs, berth or anchor in designated locations.

Vessels are regulated with respect to cargo-handling operations and the equipment and lighting used. Instructions for signaling, action in the event of accidents, cargo or gear lost overboard and safety requirements are covered. There are specific regulations for the carriage and handling of explosives and dangerous goods, and rules for the prevention of fire.

The Halifax Harbor limit lies 0.6 mile SE of Point Pleasant. Jurisdictional control for this area resides with the Halifax Port Authority. Vessel movement in the harbor proper, and in the vessel traffic services zones, is coordinated through the Canadian Coast Guard (CCG), Marine Communication and Traffic Services (MCTS). Known as Halifax Traffic, the MCTS has a Watch Officer who can be contacted 24 hours via VHF channel 12 (156.6 MHz) or VHF channel 14 (156.7 MHz), and by telephone (902-426-9750).

Winds—Weather

Halifax has abundant rainfall, moderate but damp winters, cool summers, and frequent fog. Sudden and unusual changes of weather are a consistent feature of the climate. In early autumn, Nova Scotia occasionally gets the after effects of a hurricane.

The prevailing winds during the year are from the SW to NW.

Fog is common in the late spring and summer so, although the range lights are conspicuous and sensitive, they may not be seen in conditions of low visibility because of their distance. Consideration should be given to making an early afternoon arrival/departure and taking local advise to minimize this risk.

Ice

In extremely severe winters ice may form in the inner part of the harbor, but does not extend S of **Georges Island** (44°38'N., 63°34'W.). Even in these years the ice is rapidly broken up by strong S wind and swell.

Tides—Currents

The tidal rise at Halifax is 2.1m at MHWS, and 1.7m at MHWN.

The ordinary rate of the tidal currents does not exceed 0.5 knot, but the rate and vertical movement are influenced by the wind. A set to the W has been experienced at all stages of the tide between Lichfield Shoal and Mars Rock. In the harbor, the direction generally rotates with the tide, but in The Narrows and other passages, the current is reversing. The greatest rates occur in The Narrows, but even there they seldom exceed 1 knot. Winds of over 10 knots cause large variations from the usual pattern. In the approaches to Halifax Harbor the general flow is to the SW, but a NE set may be expected about 30 per cent of the time. The rate averages 0.25 knot and seldom exceeds 0.5 knot.

Depths—Limitations

Depths—Limitations.—Halifax has modern wharves with up-to-date facilities, such as rail connections, storage (warm and cold) sheds, grain conveyors, and facilities for handling containers and ro-ro traffic. Tankers up to 110,000 tons, with a draft of 15.2m, regularly use the port.

Wharves extend along the waterfront of Halifax, beginning with Pier C, the container terminal, near the mouth of the harbor to the Richmond Terminals in The Narrows.

The berth information is contained in the accompanying table titled **Halifax—Berth Information**.

Two suspension bridges span Halifax Harbor. The Angus L. Macdonald Bridge spans Halifax Harbor from Halifax to Dartmouth, in the vicinity of the naval dockyard. Three red lights are shown vertically from the N bridge abutment. The A. Murray MacKay Bridge crosses The Narrows.

The Angus L MacDonald Bridge has a 50m vertical clearance at HW under the center of the main span SW. The A. Murray Mackay Bridge has 49m vertical clearance at HW in the center of the channel under the main span. Vessels with air draft exceeding 46m will have clearance checked by Air Gap Measurement System (AGMS), this applies to the larger number of post-Panamax vessels passing through the Narrows.

The overhead cables at the Narrows have a vertical clearance of at least 52m.

Protective rock berms, with an elevation of about 1.8m, surround the N abutment of the Macdonald Bridge and the two NE abutments of the MacKay Bridge. The E and W sides of the berms are marked by flashing lights on masts.

Red aircraft obstruction lights are shown from the N and S towers of both bridges; these are at an elevation of 104m on the Macdonald Bridge and 96m on the MacKay Bridge.

A regular ferry service operates between Halifax and Dartmouth.

Overhead power lines cross The Narrows, close E of the A.

Murray MacKay Bridge, with a clearance of 52m.

There are shipyard repairs at both Halifax and Dartmouth; repairs of all kinds can be executed.

Halifax has two floating docks, Panamax, the larger, and Scotiaock. There is also a graving dock, 173m long, 24m wide, with a depth over the sill of 9.1m and a mechanical lift dock with a capacity of 7,000 tons. The Dartmouth Shipyard has three patent slips.

Aspect

Chebucto Head (44°30'N., 63°31'W.), the W entrance point of Halifax Harbor, is marked about 0.4 mile NNW by Chebucto Head Light, shown from a white octagonal tower, 48m high, on the summit of the headland; a radar tower, used for VTS surveillance, lies close W of the light. A light is shown from a skeleton tower is located on the SW end of Devils Island. The light is visible from 155° through south and west to 000°. A racon operates from the Chebucto Head light. A conspicuous radar tower used by Halifax Traffic stands close west of Chebucto Head. Although the dangers in the approaches render caution necessary during fogs, access to Halifax Harbor is easier than any other on this coast. For vessels entering or leaving the harbor, a traffic separation scheme is in effect. A vessel traffic services system is in operation for the approaches to and in Halifax Harbor.

Bell Rock, with a depth of 2.1m, lies about 1 mile S of Chebucto Head. A lighted bell buoy is moored about 0.2 mile SE of the rock. Duncan Reef, on which there is a rock, 0.6m high, extends about 0.3 mile offshore, about 0.5 mile S of Chebucto Head. A lighted buoy is moored about 0.4 mile E of the reef.

Sambro Island, Sambro Ledges, and Outer Bank have been previously described in paragraph 3.3 in Sambro Harbor Approach.

Camperdown Hill coast radar station is situated about 1.5 miles NW of Chebucto Head.

Between Chebucto Head and Tribune Head, the S entrance point to Herring Cove, about 4.3 miles NNW, the W shore of the harbor entrance is steep and barren, with several small indentations.

Sandwich Point (44°35'N., 63°33'W.) lies about 1.3 miles NNE of Tribune Head.

A lighted bell buoy is moored about 2.5 miles N of Chebucto Head, and marks the W edge of Bear Cove Shoal, with a least depth of 14.7m.

Sandwich Point Range Lights, about 0.3 mile SW of the point, in line bearing 336.5°, lead W of Bear Cove Shoal.

Halifax—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Woodside Atlantic Wharf						
No. 1	229m	8.8m	173m	—	—	Ro-ro facilities available. Vessel lay-up, repair, and rebuilds plus offshore oil rig servicing.
Imperial						
No. 3	67m	11.6m	210m	11.0m	—	Aviation fuel, chemicals, clean products, and dirty products.
No. 4	122m	11.0m	219.5m	10.3m	—	Aviation fuel, chemicals, clean and dirty products.
No. 5	67m	15.6m	282m	15.0m	—	Crude, clean products, and dirty products.
Irving Oil (Dartmouth)						
Oil Jetty	35m	—	188.9m	—	—	Aviation fuel and clean products. Berthing length of 85m (including dolphins).
Irving Ship Building						
No. 6 and No. 7	338m	8.0m	—	—	—	Repairs.
Machine Shop Wharf	100m	9.1m	—	—	—	Repairs.
Lay by and Floating Drydock Berth	—	—	—	—	—	Berthing length of 205m (including dolphins).
Richmond Terminals						
No. 9	213m	9.1m	—	—	—	Under renovation.
No. 9A	213m	8.8m	—	—	—	Under renovation. Continuous berthing length of 429m.
No. 9B	216m	9.1m	—	—	—	

Halifax—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
No. 9C	140m	8.9m	—	—	—	Containers, offshore vessels, project/ heavy lift cargo, and breakbulk.
No. 9D	330m	—	—	—	—	Containers, offshore vessels, project/ heavy lift cargo, and breakbulk.
Halifax Seaport (Cruise Terminal)						
No. 20	221m	12.5m	300m	—	—	Cruise vessels. Continuous berthing length of 611m.
No. 21	178m	12.5m	300m	—	—	
No. 22	212m	12.5m	311.1m	—	—	
No. 23 (Ocean Terminals)	213m	10.0m	198.2m	—	—	Cruise vessels, containers, breakbulk, and heavy lift cargo. Continuous berthing length of 355m.
No. 24 (ocean Terminals)	142m	9.2m	99m	—	—	
Ocean Terminals Pier A						
No. 25	171m	12.2m	187.5m	—	—	Grain, containers, breakbulk, heavy lift cargo, and ro-ro. Continuous berthing length of 381m.
No. 26	210m	12.2m	226.1m	—	—	
No. 27	210m	13.4m	244.2m	—	—	Grain, containers, breakbulk, heavy lift cargo, and ro-ro. Continuous berthing length of 381m.
No. 28	171m	13.4m	199.9m	—	—	
Ocean Terminals Pier A-1						
No. 30	190m	8.5-13.1m	120m	—	—	Containers, breakbulk, heavy lift cargo, and ro-ro. Continuous berthing length of 380m.
No. 31	190m	14.0m	244.7m	—	—	
No. 33	190m	13.1m	90.5m	—	—	Containers, breakbulk, heavy lift cargo, ro-ro, and wind turbines. Continuous berthing length of 381m.
No. 34	191m	9.1m	187.5m	—	—	
South End Container Terminal Pier B						
No. 36	190m	13.9m	210m	—	—	Under repair. Continuous berthing length of 380m.
No. 37	190m	14.1m	172m	—	—	
No. 39	190m	14.1m	147.8m	—	—	Ro/pax, contain, project /heavy lift cargo, and breakbulk.
South End Container Terminal Pier C						
No. 41	—	16.2m	368m	—	51.2m	Ro/pax, containers, breakbulk, and heavy lift cargo. Continuous berthing length of 801m.
No. 42	—	16.2m	363.6m	—	48.2m	
Autoport						
Outer Main Berth	85m	13.7m	—	—	—	PCC and bunkers, Berthing length of 220m (including dolphins).
Inner Beth	10m	7.6m	—	—	—	PCC and bunkers, Berthing length of 144m (including dolphins).
NPSI Tufts						
NPSI Berth	82m	12.2m	210m	11.5m	—	Closed.

Halifax—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
National Gypsum Wharf						
National Gypsum Berth	197m	10.3m	230m	—	—	Gypsum.
Ultamar Canada Terminal						
Tanker Berth	92m	12.2m	243.8m	11.5m	42.6m	Closed.
Fairview Cove Container Terminal						
North Berth	370m	16.8m	320.5m	—	—	Containers, heavy lift cargo, and break-bulk. Continuous berthing length of 700m.
South Berth	330m	16.8m	335m	—	—	
McAsphalt Industries						
Asphalt Jetty	—	—	—	—	—	Asphalt.

Portuguese Shoal, rock, with a least depth of 8.4m, lies about 2.5 miles NNE of Chebucto Head. A 9.1m shoal, rock, and a 10m patch, lie about 0.3 mile SW and 0.1 mile S, respectively, of Portuguese Shoal.

Lichfield Shoal, rock, with a depth of 4m, lies about 1.8 miles S of Sandwich Point and is marked on its E side by a lighted whistle buoy. Rocky patches, with depths of 17.1, 14.3, and 16.7m, lie about 0.5, 0.8, and 0.9 mile SSE, respectively, of Lichfield Shoal.

Neverfail Shoal, with a least depth of 8.2m, lies about 2 miles SSE of Sandwich Point and is marked by a lighted buoy.

Head Rock Shoal (Rock Head Shoal), with a least depth of 7.2m, lies about 0.7 mile NE of Portuguese Shoal.

Mars Rock, with a depth of 3.7m, lies about 0.5 mile SSE of Sandwich Point and lies on the E part of a bank, with depths of less than 18.3m, on which there are several shoal patches with depths of from 5.5 to 9.1m, which extends about 0.9 mile SSE from the same point. Holy Stone (Hollystone), 2m high, lies on the W part of this bank, nearly 0.1 mile offshore, and about 0.3 mile S of Sandwich Point.

Big Thrumcap (44°35'N., 63°30'W.), 14m high, lies close SW of the red clay cliff at the S extremity of McNabs Island. Little Thrumcap Hook comprises several small islets on a shingle beach located about 1.5 miles E of Sandwich Point. Thrumcap Shoal, with depths of less than 5m, surrounds a shingle beach, located about 0.7 mile SSE of Big Thrumcap. A lighted bell buoy is moored close S of the S extremity of Thrumcap Shoal.

Mariners should avoid fishing nets in the vicinity of Thrumcap Shoal and Head Rock Shoal.

Eastern Passage is the narrow channel separating Lawlor Island and McNabs Island from the mainland to the E. It has a least depth of 2.1m in the fairway, but due to continual silting, the charted depths are subject to change. The passage is accessible from the S only to small craft through a buoyed channel about 61m wide, formed by a gap in the obstruction between Lawlor Island and the mainland.

The main channel into Halifax Harbor lies W of **McNabs Island** (44°36'N., 63°31'W.). Maugher Beach extends over 0.5 mile W from the W side of McNabs Island. Maugher Beach Light is shown from a white octagonal tower, 16.5m high, situated on the W end of Maugher Beach. A fog signal is sounded from the light.

Halifax Harbor Middle Range Lights, in line bearing 356°, are located on McNabs Island, about 0.8 mile farther N.

Lighthouse Bank, with a least depth of 4.7m, extends about 0.8 mile SSE from the W end of Maugher Beach. A bank, with depths of less than 5.5m, extends about 0.2 mile NW and SW, and 0.12 mile W from the outer end of Maugher Beach.

Outer Middle Ground, with a depth of 10.7m, lies about 0.4 mile SW of the outer end of Maugher Beach and is marked W by a light. Middle Ground, with a least depth of 8.5m at its N end, lies about 1.5 miles N of Sandwich Point and is marked close NNW by a lighted buoy. There is a 10.1m rocky shoal and an 11m shoal about 90m and 275m SSE, respectively, of Middle Ground.

A wreck, with a depth of 21.6m, lies in the main fairway between Outer Middle Ground and Middle Ground.

York Redoubt (44°36'N., 63°33'W.), about 0.8 mile NW of Sandwich Point, stands on a hill, 54m high, and is conspicuous. A church, with two towers, lies close N of the redoubt.

Point Pleasant (44°37'N., 63°34'W.) is the S extremity of the Halifax Peninsula and the N entrance point of the Northwest Arm. Sailors Monument is a conspicuous monument standing about 0.1 mile NE of the point.

Pleasant Shoal is an extensive shoal extending about 0.6 mile E and 0.5 mile SE from Point Pleasant. It has a least depth of 0.6m extending nearly 0.4 mile seaward of the point. Hen and Chickens, which dry 0.9m, lie on the W part of the shoal, about 0.1 mile SE of Point Pleasant. A lighted bell buoy marks the E extremity of the shoal.

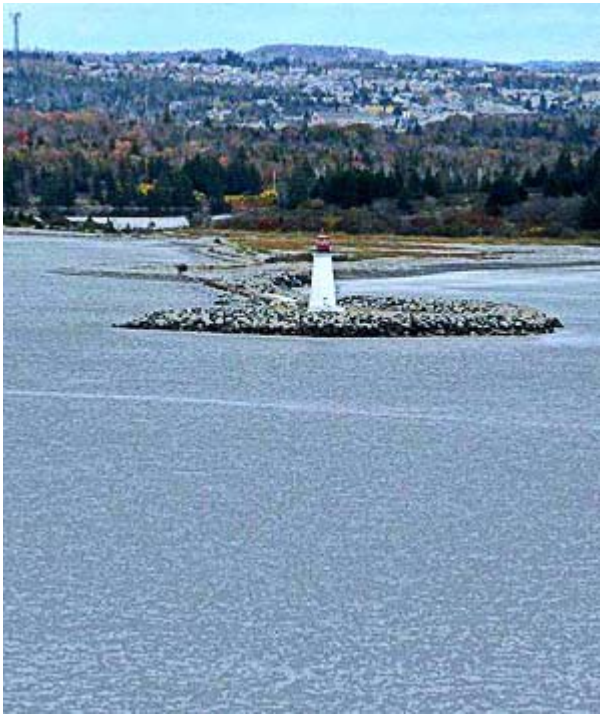
Ives Point (44°37'N., 63°33'W.), the NW extremity of McNabs Island, is a steep clay bank with a shingle beach. Submerged mounds of rocks and boulders extend N from the point. A bank, with depths of less than 9.1m, extends over 0.4 mile NW of Ives Point. Ives Knoll, a rock drying 0.3m and marked by a dolphin, lies on the NW part of the bank, about 0.3 mile NW of the points. A lighted bell buoy and a lighted buoy are moored on the W and N edge of the bank, respectively.

Georges Island, 12.2m high, lies about 1.3 miles NW of Ives

Point. A bank, with depths of less than 5.5m, about 90m in width, surrounds the island. The front light of the Halifax Harbor Inner Range Lights is shown from a white octagonal tower on the W side of Georges Island. The rear light is exhibited from a triangular tower, 17m high, situated in the city of Dartmouth. These lights, in line bearing 339°, lead E of Pleasant Shoal, Middle Ground and Outer Middle Ground, and W of Lighthouse Bank.

A radar tower, 17m high, looking like a golf ball on a tee, is situated on St. Georges Island.

The flame tower at the Imperial Oil refinery, situated about 0.8 mile E of Georges Island, is said to be visible for distances of up to 30 miles. Another flame tower is situated about 2 miles E of Ives Point. Submarine cables lie in the small channel between Georges Island and Halifax.



Maugher Beach Light N of Lighhouse Bank

Bedford Institute of Oceanography Wharf

Georges Island—Communication Tower (center)

Courtesy of USCGC Healy

Georges Island Light

Bedford Basin (44°41'N., 63°38'W.), entered from the NW end of The Narrows, lies at the head of Halifax Harbor and is landlocked. The shores of the basin are indented by a number of coves and bays.

The bottom of the bay, formed between Seaview Point and Sherwood Point, in the S part of Bedford Basin, is reported to be strewn with large boulders to a distance of 0.5 mile offshore.

Wrights Cove lies between **Wrights Point** (44°41.6'N., 63°37.0'W.) and Rent Point. The latter is bordered by an explosives dumping ground. The cove is enclosed SW by Navy Island. A degaussing range and restricted area lies close W of Wrights Point and can be best seen on the chart.

An area strewn with live ammunition lies off Rent Point; diving and anchorage is prohibited.

A naval exercise area extends nearly 0.5 mile from the shore between Rent Point and the W side of Roach Cove, 1.2 miles NW. A naval underwater demolition training area is situated in Roach Cove.

There are two radio towers standing nearly 0.5 mile SW of **Sherwood Point** (44°41'N., 63°39'W.).

A television transmitting tower, 334m high, lies about 1.8 miles S of Sherwood Point.

There is a hydro tower, at an elevation of 95m, on Turple Head, and a second tower, at an elevation of 112m, near the Halifax end of the A. Murray MacKay Bridge. Both towers display red aircraft obstruction lights.

There are three conspicuous chimneys, 152m high, are situated at the power plant near the E entrance to Tufts Cove.

Just N of the A. Murray MacKay Bridge lies the Bedford Institute of Oceanography. It has been reported (2009) that the wharf at the facility has been extended an additional 33m.

Pilotage

Pilotage is compulsory. Vessels entering the harbor shall report their ETA to Pilots Halifax 12 hours and 3 hours prior to arrival at the pilot boarding station. Pilots board at position 44°30'24"N, 63°29'30"W and at position 44°29'N, 63°28'30"W for Esso tankers over 40,000 dwt. For contact information, see table titled **Halifax—Contact Information**.

In heavy weather, it is not always possible for the pilot vessel to be at the above positions, but will proceed as far seaward as possible to embark or disembark a pilot. Pilot boats are equipped with radar and maintain a radiotelephone watch on VHF channels 12 and 14.

The ETA must be confirmed or corrected 3 hours prior to arrival at the pilot station. Vessels departing or moving within the pilotage area must contact the Atlantic Pilotage Authority 5 hours before the departure. The ETD must be confirmed 1 hour prior to the time the ship is to move or depart. Local time should be used. If UTC is used, it must be expressly stated.

Vessels of 50,000 gt and over shall apply for clearance to the VTM Center not less than 24 hours before the vessel is due to enter the Halifax VTM Zone.

In addition to the contact methods described in Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas, the Atlantic Pilotage Authority may also be contacted on VHF channel 23 (call sign: Halifax Pilot Dispatch).

Regulations

Vessels maneuvering or otherwise underway in Halifax Harbor, and also while at an alongside berth or at anchor, are subject to the Halifax Port Corporation By-Law A-1(Operating Regulations). A copy of these may be obtained from the Port Corporation.

The regulations require that no vessel shall move in the harbor at a rate of speed that may endanger life or property. Northwest Arm is designated a No Wake Corridor and mariners are required to adjust their speed accordingly. Vessels should proceed at a speed which does not create a wash when N of **Ives Knoll** (44°38'N., 63°33'W.).

In Halifax Harbor, a specific speed limit of 8 knots has been established. The Halifax Harbor limit lies nearly midway between Pleasant Shoal and Middle Ground.

The Port Corporation has wide powers over vessels in its harbors and may order vessels to move, to use tugs, to berth, or anchor in locations which it designates. Certain restrictions o berthing and anchoring are set forth, along with the requirements for vessels to inform the Corporation in advance of their intention to berth or anchor in the harbor.

Vessels are regulated with respect to cargo-handling operations and the equipment and lighting employed in these operations. Instructions for signaling, action in the event of accidents, cargo or gear lost overboard, and safety requirements are included.

There are specific vessel regulations for the carriage and handling of explosives and dangerous goods, as well as rules to be observed in the prevention of fire.

Direct ship to shore communication with the harbormaster is available 24 hours on VHF channel 65A.

Controlled Access Zones.—Canadian Naval facilities in Halifax Harbor are designated as Controlled Access Zones. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for additional information.

Procedures for vessels transiting The Narrows.—For the purposes of the following procedures, the area referred to as The Narrows is defined, as follows:

1. The navigable water lying between a line through position 44°39'47.5"N, 63°34'11.5"W in a 221° direction and extended to the opposite shore (Calling-in-Point No. 9, Ferry track); and
2. A line through position 44°41'21.5"N, 63°37'01"W in a 197° direction and extended to the opposite shore (Calling-in-Point No. 10, Bedford Institute of Oceanography).

These procedures will apply to all vessels of 20m or more in length.

These procedures are to be followed when two vessels proceed toward The Narrows from opposite directions:

1. Halifax Traffic (MCTS) will inform each vessel of the location, and destination of the other vessel.
2. Except to prevent imminent danger to life or property, a vessel of more than 150m will not transit The Narrows at the same time as another vessel the length of which is also greater than 150m. Vessels will agree to their precedence of transit by means of bridge to bridge contact on VHF channel 12.
3. Vessels will agree to their precedence of transit by means of bridge to bridge contact on VHF channel 12.
4. The northbound vessel will initiate this contact prior to passing George's Island and the southbound vessel immediately on leaving a berth in Bedford Basin.
5. Unless otherwise agreed to by the vessels, the northbound vessel will have precedence and stand on.
6. Where one of the transiting vessels is greater than 150m, the vessels will agree to their transit procedures by means of bridge to bridge contact on VHF channel 12. The northbound vessel will initiate this contact prior to passing George's Island and the southbound vessel immediately on leaving a berth in Bedford Basin. Where one of the transiting vessels is greater than 150m, the vessels will agree to their transit procedures by means of bridge-to-bridge contact on VHF channel 12. In restricted visibility, or winds sufficiently strong to affect maneuverability, a vessel of greater than 150m underway and intending to transit The Narrows will be considered the privileged vessel and may, through the MCTS, request that all other traffic intending to transit The

Narrows be restricted.

7. In cases where the vessels concerned are less than 15m in length, transit procedures will be agreed to by all vessels through bridge-to-bridge contact on VHF channel 12. A vessel requesting a clearance from MCTS to depart a berth within The Narrows is subject to the requirement of vessels in transit and may have such clearance withheld until traffic in transit is past and clear. Commanding Officers of naval vessels will comply with these procedures as far as practicable.

In the event that any vessel in the vicinity of either bridge poses a threat to a bridge, due to mechanical problems or other circumstances, the master, pilot, or commanding officer will advise Halifax Traffic via marine radio VHF channel 12. The MCTS Officer receiving the information will immediately notify the Watch Supervisor who will call the Bridge Commission, to confirm that they copied the emergency radio call on VHF channel 12, and inform the Duty Staff Sergeant of the situation. The following radio call is to be used in the event of a possible bridge vessel collision:

PAN PAN, PAN PAN, PAN PAN
MACDONALD (MACKAY) BRIDGE
MACDONALD (MACKAY) BRIDGE
THIS IS (name of ship)
STOP TRAFFIC, STOP TRAFFIC, STOP TRAFFIC
(name of ship) OUT

These procedures shall not relieve the vessel, its master, owner, person in charge or having conduct thereof, from any obligation contained in the *Canadian Regulations* enacted pursuant to the *Canada Shipping Act* for the safe and prudent operation of a vessel.

Traffic Separation Scheme.—For vessels entering or departing from Halifax Harbor, there is a voluntary separation scheme in the S, SW, and SE approaches to the harbor.

Vessel Traffic Service

Halifax VTS Zone, with radar surveillance for the control of shipping, extends over the whole of Halifax Harbor and its approaches within Canadian territorial waters, and is distinct from the Eastern Canada Vessel Traffic Services Zone (ECAREG). The outer limits of the zone extends from Collies Head and Pennant Point.

Participation is mandatory, as follows:

1. All vessels of 20m or more in length.
2. Vessels engaged in towing or pushing where the combined length of the ship and any vessel or object towed or pushed by the ship is 45m or more in length.
3. Vessels engaged in towing or pushing where the length of the vessel or object being towed or pushed by the ship is 20m or more in length.
4. Air cushion vehicles of 8m or more in length.

A traffic clearance is required before entering a zone or departing a berth or mooring. Clearance is obtained by making reports 15 minutes before entering the zone, arriving at a calling-in-point, arriving at a berth, and departing a berth.

The Canadian Coast Guard has a Vessel Traffic Management Center at Chebucto Head, equipped with VHF communications, to administer the system.

The mandatory reporting points for inbound and outbound vessels are shown on the appropriate charts. All vessels transiting the regulated area should be provided with a VHF set in accordance with the required standards.

The VTS Service is divided into two sectors. Sector 1 generally lies seaward of the line joining Chebucto Head and Hartlen Point. Sector 2 generally lies NW of this same line.

The Vessel Traffic Management Center (call sign: Halifax Traffic) can be contacted, as follows:

1. Sector 1—VHF channel 14.
2. Sector 2—VHF channel 12.

Halifax—Contact Information	
Port Authority	
VHF	VHF channel 65A (24 hours)
Telephone	1-902-426-8222 (office hours)
	1-902-426-3629 (24 hours—emergencies)
Facsimile	1-902-4426-7335
Web site	http://www.portofhalifax.ca
Atlantic Pilotage Agents	
Call sign	Halifax Pilot Dispatch
VHF	VHF channel 23 (Halifax Dispatch)
	VHF channel 12 (pilot vessel)
Telephone	1-877-272-3477 (Toll free)
	1-902-426-7610
Facsimile	1-877-745-3477 (Toll free)
	1-902-426-7236
E-mail	dispatch@atlanticpilotage.com
Vessel Traffic Service	
Call sign	Halifax Traffic (VCS)
VHF	VHF channel 12 (Sector 2)
	VHF channel 14 (Sector 1)
Telephone	1-902-426-9750 (Operations)
	1-902-426-4956 (ECAREG)
Facsimile	1-902-426-4483
E-mail	hlxecareg1@innav.gc.ca
	supvrmcts@mar.dfo-mpo.gc.ca
Autoport CN	
Telephone	1-902-465-6050
Facsimile	1-902-465-6007
E-mail	autoport@autoport.ca
National Gypsum	
Telephone	1-902-468-7455
Facsimile	1-902-468-3955

Halifax—Contact Information	
E-mail	pcmills@nationalgypsum.com
Woodside Atlantic	
Telephone	1-902-424-6819
Imperial Oil	
Telephone	1-902-420-6872
South End (Halterm)	
Telephone	1-902-421-1778

For vessels not yet fitted with the required equipment, portable VHF sets of limited range will be made available on a rental basis for vessels in pilotage.

Contact Information

See the table titled **Halifax—Contact Information**.

Anchorage

There are thirteen numbered anchorages in Halifax Harbor and Bedford Basin.Anchorage No. 1, SE of Georges Island, is the quarantine anchorage.

There is a prohibited anchorage area including the whole of the main entrance to Halifax Harbor and Eastern Passage. The N limit is in the vicinity of the Terminals Breakwater Light, at the S extremity of Pier C container pier; the S limit is adjacent to Sandwich Point.

There is also good anchorage in Bedford Basin, S of a line drawn between Seaview Point and Sherwood Point. A Navy berth at a moored barge lies 0.25 mile NNW of Sherwood Point. A submarine cable runs WNW from the barge to the shore. Anchoring is prohibited in the vicinity of the barge.

Outside Halifax Harbor, E of Chebucto Head, Anchorage Area A and Anchorage Area B should not be used during periods of strong onshore winds.

Directions

In thick weather, the E approach to Halifax Harbor is rendered comparatively easy by the absence of off-lying dangers after **Shut-in Island** (44°37'N., 63°17'W.) has been passed, and by soundings on the coastal bank which deepen fairly regularly to 55m at a distance of 4 to 6 miles offshore.

Approaching from the W in thick weather, the soundings on Outer Bank, off Sambro Ledges, may be found of great assistance.

There is a traffic separation scheme for vessels entering or departing from Halifax Harbor.

From the vicinity of Lighted Whistle Buoy H4 (44°32'N., 63°30'W.), three lighted ranges lead into Halifax Harbor, as follows:

1. Sandwich Point Range Lights, about 0.3 mile SW of Sandwich Point, in line bearing 336.5°, lead W of Bear Cove Shoal and between Neverfail Shoal and Lichfield Shoal.
2. Halifax Harbor Middle Range Lights, in the NW part of McNabs Island, in line bearing 356°, lead between Neverfail Shoal and Lichfield Shoal, and E of Mars Rock.
3. Halifax Harbor Inner Range Lights, with the front light on the W side of Georges Island, in line bearing 339° with the rear light in Dartmouth, lead E of Pleasant Shoal, Middle Ground, and Outer Middle Ground and W of Lighthouse Shoal and Ives Knoll.

Note.—Georges Island may be passed on either side.

Caution

A degaussing range, surrounded by a prohibited anchorage area, is situated 0.25 mile NW of Seaview Point.

Submarine cables lie between Georges Island and Cunard Wharf.

An area strewn with live ammunition lies off Rent Point; diving and anchorage is prohibited. A naval exercise area extends nearly 0.5 mile from the shore between Rent Point and the west side of Roach Cove. A naval underwater demolition training area is situated in Roach Cove, and is used by divers to set off explosive charges up to 2.3 kg.

Shaffelburgh Rocks, one of which is 1m in elevation, are situated nearly 0.1 mile S of the W entrance point to Roach Cove. A rock, at a depth of 2.4m, lies 0.15 mile SE of the Shaffelburgh Rocks.

A yellow ODAS buoy marks an enclosed danger located in between 1B Outbound TSS and 1C Inbound TSS.

Halifax Harbor to Jeddore Harbour

3.7 The coast from **Hartlen Point** (44°35'N., 63°27'W.) to Jeddore Harbor, about 19 miles ENE, is indented by numerous inlets separated by headlands. None of these inlets are of interest to ocean-going vessels. Shut-in Island is the S point on this section of coast. The headlands between Shut-in Island and Jeddore Head terminate in cliffs of red clay and present a very remarkable appearance.

Osborne Head (44°37'N., 63°25'W.), about 2 miles NE of Hartlen Point, is a prominent headland, 31.7m high, with reddish cliffs. A naval gunnery school, consisting of gray cement buildings, a control tower, and a firing platform for practice firings to seaward, is situated on the headland.

Egg Islet, about 2.7 miles ENE of Osborne Head, is low and almost connected to the mainland N by a reef and shingle beach. Fox Island, about 0.3 mile N, is connected to the mainland by a causeway. Lawrencetown Head, about 0.8 mile NE of Egg Islet, is a conspicuous headland with red cliffs, and with a church with spire on its summit.

Half Island Point (44°38'N., 63°19'W.), a conspicuous headland with a red cliff about 2 miles farther ESE, has a bank with depths of less than 5.5 extending about 0.4 mile S of the point.

Shut-in Island (44°37'N., 63°17'W.), about 1.5 miles ESE of Half Island Point, is composed of clay slate rock and is joined to Graham Head about 0.4 mile NNW by a reef and shingle beach. Graham Head, with red cliffs, 18.3m high, is the S extremity of a peninsula of the mainland.

Shut-in Shoals, with depths of less than 9.1m, rock, extend about 1 mile S and 1.3 miles SW from Shut-in Island. The two shallowest patches, each with a depth of 4.6m, lie about 0.5

mile and nearly 1 mile WNW, respectively, of the S extremity of the island.

Three Fathom Harbour, a summer resort and fishing harbor, is entered between Shut-in Island, flat and composed of clay slate rock, and Rat Rock, which lies close SW of Wedge Island. It affords shelter only to small craft. The entrance channel, 91m wide between reefs, has a depth of 6.4m, but 0.5 mile above the entrance the depth in the channel is only 1.8m. Mariners without local knowledge should not attempt to enter the harbor, except in an emergency.

A lighted bell buoy is moored about 0.8 mile SSE of Shut-in Island.

Caution.—Yankee Bank (44°33'N., 63°10'W.), with a least depth of 31m, lies about 6.5 miles SE of Shut-in Island. Darby Bank, with a least depth of 21.9m, lies about 1 mile NE of Yankee Bank. There are fisheries on both banks. Because of the sudden shoaling of the water, there is often a very heavy sea on these banks.

3.8 **Story Head** (44°40'N., 63°13'W.), located about 3.5 miles NNE of Shut in Island, is rounded and connected to the land N of it by a gravel spit. Chezzetcook Inlet is entered W of Story Head. There is a depth of 7.3m in the entrance, but only 0.9m on the bar, and the inlet is of no value to shipping; tidal currents in the entrance have a rate of 2 to 3 knots. A conspicuous yellow control tower, 12m high, is situated almost 1.5 miles NNW of Story Head. An Armed Forces exercise area is established in the vicinity. A lighted bell buoy is moored about 0.5 mile SW of Story Head.

Pat Shoal, with a depth of 7.7m, lies about 1.5 miles S of Story Head; it breaks occasionally after heavy gales.

Collies Head (Petpeswick Head) (44°41'N., 63°10'W.), 39.6m high, about 6 miles NE of Shut-in Island, is pyramidal in shape and resembles a fortification when seen from a distance. A bank, with depths of less than 9.1m, extends nearly 1 mile S from Collies Head. Codray Shoal, with a depth of 6.9m, lies on the S end of this bank. Petpeswick Shoal, with a depth of 7.8m, lies about 2.5 miles S of Collies Head. Two shoals, with depths of 9.1m and 7.6m, lie about 0.3 mile and 1 mile NNW, respectively, of Collies Shoal. Petpeswick Inlet, entered W of Collies Head, is available only for small craft in good weather. The channel shoals to a depth of 1.8m, 1 mile within the entrance.

3.9 **Jeddore Head** (44°40'N., 63°03'W.), about 5 miles E of Collies Head, is a remarkable headland, 61m high, with a low shingle point at Jeddore Cape, its S extremity. Coopers Head (Jeddore Cliff), composed of red clay, rises to an elevation of 41m on the E side of the headland, about 0.8 mile NE of the shingle point, and forms an excellent landmark. The cliffs on the W side of the headland are also composed of red clay, but are only 24.4m high. A bank, with depths of less than 5.5m, extends nearly 0.3 mile S from Jeddore Cape.

Musquodoboit Shoal, about 2 miles SW of Jeddore Head, has a least depth of 5.5m, rock, and frequently breaks.

Musquodoboit Inlet (44°40'N., 63°04'W.), entered between Jeddore Head and Flying Point, about 2 miles W, is encumbered by islands and mud flats, but with local knowledge it is navigable by small vessels at HW, to its junction with the Musquodoboit River, about 7 miles above its entrance. Harbour Ledge, about 1 mile W of Jeddore Head, forms an unbroken barrier 0.75 mile long in a N-S direction, and is composed of boulders and shingle, which at its shallowest dries 0.3m. The entrance channel lies on the E side of this shoal. The seas normally break on this shoal a great deal of the time, but with strong SW winds the entrance may break also, making entrance of the inlet exceedingly dangerous.

A rocky shoal, with a least depth of 2.7m, extends nearly 0.3 mile S of the S extremity of Harbour Ledge.

Round Shoals are two patches, with a least depth of 7.8m, about 1 mile SW of Flying Point.

Tides—Currents.—The ordinary rate of the tidal currents in the entrance is about 2 to 3 knots, but heavy rains or melting snows have been known to increase the rate of the ebb current to 4 knots or more.

The entrance channel has a least depth of 2.7m. The channel is available to small craft only and should not be entered without local knowledge, except in an emergency. The village of **Musquodoboit Harbor** (44°47'N., 63°09'W.) (World Port Index No. 6330) is situated near the head of the inlet.

3.10 The approach to **Jeddore Harbour** (44°45'N., 63°00'W.) from the E and S is encumbered with islands, reefs, and shoals. Vessels navigating this coast should pass S of the dangers, and in poor visibility should remain in depths of 74m or more.

Jeddore Rock (44°40'N., 63°01'W.), 15.2m high, lies about 1.8 miles ESE of Jeddore Head, is composed of clay slate, and is a conspicuous feature in the approach to Jeddore Harbour. A rocky ledge extends about 0.2 mile W from the W end of the rock, and a bank, with a depth of 5.5m, extends about 0.2 mile farther W. Jeddore Rock Light is shown from a square framework tower, 14m high, from the summit of the rock.

A shoal, with a least depth of 12.8m, lies about 0.6 mile WSW of Jeddore Rock. Shoals, with depths of 9.1m and 12.8m, lie about 1.3 and 1.8 miles WSW, respectively, of Jeddore Rock.

Arnold Rock, which dries, and Arnold Shoal, with a least depth of 11m, lie about 0.5 mile and 1.3 miles S, respectively, of Jeddore Rock. A lighted bell buoy is moored about 0.2 mile SSE of Arnold Rock. A rock, with a depth of 5.5m, and a 14.6m patch lie about 0.8 mile W and 0.5 mile SSW, respectively, of Arnold Shoal.

Old Man, 3.7m high, about 0.8 mile ESE of Jeddore Rock, is prominent and steep to on its N side. A small rock, with a depth of 0.9m, lies about 0.1 mile S of Old Man, and a shoal, with a depth of 9.1m, lies about 0.7 mile ESE of the same rock.

Faulkners Shoal (Outer Pollock) (44°36'N., 62°58'W.), with a least depth of 11m, lies nearly 4 miles SSE of Jeddore Rock. Inner Pollock, with depths of 9.1 to 18.3m, lies with its shallowest part about 3 miles SSE of Jeddore Rock. East Pollock, about 1 mile N of Faulkners Shoal, has a depth of 11m, with deep water close to. A 14.6m depth lies about 0.3mile N of it.

Brig Rock, nearly 4 miles SE of Jeddore Rock, has a depth of 1.8m and usually breaks at LW. Brig Shoal, with a depth of 3.2m, lies about 0.2 mile S of Brig Rock. Another shallow patch, about 0.4 mile SE of Brig Rock, has a depth of 9.1m and is reported to break occasionally after very strong gales. An 11.3m shoal lies about 1.3 mile SSE of Brig Shoal. A lighted

bell buoy is moored 0.5 mile SSW of Brig Rock.

Long Island (44°41'N., 62°54'W.), 15.2m high, about 6 miles E of Jeddore Head, is the largest off this part of the coast. Southwest Ledges consist of three ledges which dry. The SW ledge, about 1.5 miles S of Long Island, dries 1.8m. Bull Rock, with a depth of 1.6m, lies about 0.7 mile ESE of the SW ledge. Bull Shoal, with a depth of 3.6m, lies about 0.5 mile SW of Bull Rock.

The Squince (MacDonald Rock) and Hopkin Rock, each with a depth of 3.7m, lie 1.25 miles WSW and 2.25 miles W, respectively, of the S extremity of Long Island.

Gull Rock, above-water, nearly 3 miles E of Jeddore Head, lies on the NW part of a bank, with depths of less than 5.5m. Mehanny Rocks, awash, about 0.3 mile S, and Johns Rock (Middle Rock), with a depth of less than 1.8m, about 0.4 mile E of Gull Rock, lie near the S and E ends, respectively, of the bank.

3.11 Jeddore Harbour (44°45'N., 63°00'W.), entered between Hopkins Point, about 1.3 miles NE of Coopers Head, and East Head, about 0.7 mile further E, provides secure anchorage for small vessels. The entrance is narrow and the approach from E and S is encumbered with islands, reefs, and shoals. There is a depth of 7.1m over the bar between Hopkins Point and East Head. Near the head of the harbor there is a wharf, 33m long, with a depth of 6.4m at the outer end.

Tides—Currents.—The tidal rise at Jeddore Harbour is 2m at MHWS, and 1.7m at MHWN.

At the entrance to the harbor the direction of the tidal currents changes at about the time of HW and LW. The ordinary rate of both currents is about 1 knot. The indraft of the flood current is felt several miles to seaward of the harbor and in the inlets to the W.

Aspect.—Barren Island, 12.2m high, lies with its W extremity about 1 mile SE of East Head. Roger Islet, 4.6m high, lies about 0.2 mile NW of Barren Island. Other islets, islands, and submerged dangers, best seen on the chart, lie up to 1 mile SE and 2.25 miles NE of Barren Island.

Thorn Shoal, with a least depth of 2.7m, extends about 0.5 mile E of Jeddore Head, from a position about 0.4 mile S of Hopkins Point. A lighted bell buoy is moored about 0.8 mile SE of West Head.

Bar Point lies on the E side of the harbor, about 0.5 mile NE of Hopkins Point. Bar Shoal, almost awash at LW and marked W by a lighted buoy, extends about 0.2 mile from the E shore, close N of Bar Point, narrowing the channel to about 0.1 mile in width.

Marsh Point, from which a dry sandy beach extends about 0.2 mile NE, lies on the W shore, nearly 1 mile N of Bar Point. A lighted buoy is moored off the sandy beach. Bakers Point (Pea Point) lies on the E shore, about 0.5 mile farther N. Navy A pier, at the Shearwater coastal forces base, extends NW from Bakers Point.

Above Bakers Point, the harbor is obstructed by mud flats and shoals, but as local knowledge is necessary to navigate this section, no description of them will be given.

Anchorage.—There is good shelter, in 12.8m, mud, between Bakers Point and the sandy beach extending from Marsh Point, but the channel is only about 0.2 mile wide.

Directions.—The best time for mariners without local knowledge to enter Jeddore Harbour is at or near LW, when part of Bar Shoal is breaking, and the steep mud banks on either side of the channel are visible.

Jeddore Harbour to Ship Harbour

3.12 Clam Bay, which lies between East Head and **Porter Island** (44°41'N., 62°51'W.), about 6 miles E, affords no shelter to shipping. Clam Harbour and Little Harbour, on the E side of Clam Bay, are only available to small craft.

Porter Island, 27.4m high, and Laybold Island lie on the W part of a bank, with depths of less than 9.1m, on which are many islets and rocks above and below-water, extending more than 1 mile S from the shore between **Little Harbour Head** (Stoddart Point) (44°42'N., 62°52'W.) and Owls Head, about 2.8 miles ENE. Bald Island, Laney Island, and Woody Island lie on the SE part of the above-mentioned bank.

Egg Island (44°40'N., 62°52'W.), 7m high and composed of rocks, lies about 1.3 miles SSW of Porter Island. Egg Island Light is shown from a white pyramidal skeleton tower, 15m high, on the center of the island.

Ship Ledges (Transport Ledges), 1 to 2m high, lie with their NE end about 0.3 mile SE of Egg Island. Grizzle Rock, with a depth of 11.6m, and Psyche Rock, with a depth of 6.2m, lie about 0.6 mile ESE and 0.8 mile E, respectively, of Egg Island. A lighted bell buoy is moored close E of Psyche Rock.

Flint Ledge, 2.7m high, lies on a bank nearly 1 mile N of Egg Island. Other islets, ledges, and shoals, best seen on the chart, extend up to 2.25 miles NW of Flint Ledge.

Caution.—**Tom Bank** (44°37'N., 62°53'W.), with a depth of 14.6m, lies 2.5 miles SSW of Egg Island.

Duck Bank, with a depth of 14.3m, and John Bank, with a depth of 22m, lie about 1.7 miles S and 2.5 miles SSE, respectively, of Egg Island. The sudden shoaling of the water causes, at times, a very heavy sea on these banks. Both banks are used as fishing grounds.

Barse Rock, with a depth of 7.4m, lies about 3 miles ESE of Egg Island. Little Hurley Shoal, with a depth of 8.5m, lies nearly 1 mile NE of Barse Rock. The sea breaks heavily on these two dangers in bad weather.

Bald Rock (44°41'N., 62°48'W.), about 0.5 mile S of Bald Island, is 4.3m high and lies near the middle of a reef, which extends about 0.1 mile NE and SW from it. Bald Rock Bull, a rock with a depth of 2m, lies about 0.3 mile SW of Bald Rock.

Black Ledge, 1.8m high, lies about 0.2 mile E of Woody Island in the approach to Owls Head Bay. A rock, with a depth of 3m, lies near the edge of a bank extending about 0.2 mile N of Black Ledge.

3.13 Owls Head Bay (44°44'N., 62°49'W.) is entered between Cuckold Island and **Friar Island** (44°43'N., 62°46'W.), about 1.5 miles E. The bay is easy to access and never freezes over. Cuckold Island, 27.4m high, is almost joined at LW to the S end of the Owls Head Peninsula.

Owls Head, which gives its name to the bay, lies nearly 0.5 mile N of the E extremity of Cuckold Island. It has a remarkable round mound and cliff at its E extremity and is clear of off-lying dangers. A directional light, intensified on a bearing of 319°, stands on the headland.

Friar Island, 6.1m high, has rocky ledges, some of which are

above-water, extending about 0.3 mile SW from the island. Owls Head Rock (Owl Rock), with a depth of 1.8m, lies on the E side of the entrance channel, nearly 0.8 mile W of the N end of Friar Island. A lighted bell buoy is moored about 1.4 miles SSE of Friar Island.

Wolfes Island (Nichol Island) (45°44'N., 62°46'W.) lies about 0.5 mile N of Friar Island and separates the bay from the approach to Ship Harbour. Cable Island lies about 0.5 mile W of Wolfes Island, and is separated from it by False Passage, available only for boats. Shag Rock, a prominent pointed white rock, 9.1m high, lies nearly 0.5 mile ESE of Cable Point, the SW extremity of Cable Island.

Anchorage.—There is an anchorage, in 6 to 7m, sand and mud, about 0.4 mile WNW of Cable Point.

At Palmer Cove, on the W side of the bay, there is a government pier with a depth of 1.8m at its outer end.

Caution.—It is necessary to avoid a marine farm which lies about 420m W of Cable Island.

Ship Harbour Approach

3.14 The approach to Ship Harbor lies between Wolfes Island and Borgles Island, two of the largest islands off this part of the coast. Both islands are less than 30m high.

Little Rock (44°41'N., 62°43'W.), with a depth of 8.2m, lies about 3.5 miles S of Green Point (Charles Point), the SE point of Borgles Island. An 8.8m patch lies about 0.9 mile NW of Little Rock.

A lighted whistle buoy is moored about 0.3 mile ESE of Little Rock.

Broad Breaker, with a depth of 8.5m, lies about 1.5 miles SSE of Green Point. Broad Shoal, rock, with a depth of 10.7m, lies about 0.8 mile SE of Broad Breaker.

Flat Ledges (44°43'N., 62°45'W.), on the W side of the entrance, extend about 0.5 mile in a NE-SW direction. A rock, 0.9m high, lies near the center, about 0.8 mile E of Friar Island. West Bull, with a depth of 1.5m, lies in the SW part of the ledge; East Bull, the farthest NE, has a depth of 2.1m.

Friar Ledges lie parallel with and about 0.4 mile NW of Flat Ledges. They consist of four separate rock outcrops, 0.6 to 1.2m high.

Middle Ground, with a depth of 6.7m, and Northeast Shoal, with a depth of 5.2m, lie about 1.3 miles ESE and nearly 1 mile E, respectively, of Long Point, the S extremity of Wolfes Island.

Wolfes Point (Wolf Point), the NE extremity of Wolfes Island, lies about 1.5 miles N of Long Point. The coast between the points is foul for about 0.2 mile offshore. A 2.3m patch lies about 0.3 mile WSW of Wolfes Point.

Ship Harbour Light is shown from a framework mast, 7m high, situated on Wolfes Point.

3.15 **Bear Rock** (44°44'N., 62°44'W.), 2m high and steep to on its E side, lies in the middle of the approach, about 1 mile SW of Green Point. Two rocks, each of which dries 0.6m, extend about 230m SW of Bear Rock. Pot Rock, with a depth of 2.4m, lies about 0.9 mile W of Bear Rock.

The Western Islands, about 0.8 mile SW of Green Point, consist of several islets, mostly wooded, the largest of which is 15.2m high to the tree tops. There are several low rocky islands, the highest being 4.9m high, and a number of drying shoals, about 0.3 to 0.4 mile SE of the Western Islands.

Bull Rock, with a depth of 1.5m, lies about 0.6 mile SE of Green Point, near the outer end of a rocky bank. A shoal, with a depth of 4.6m, lies about 0.2 mile SW of Bull Rock, and another, with a depth of 3.6m, lies about 0.2 mile farther SW. Two large outcrops of bedrock, about 90m apart, lie about 0.3 mile S of Green Point. The N one is 0.6m high and the other is awash.

Bald Island lies about 0.3 mile NW of Tucker Point, the W extremity of Borgles Island. It is divided into two parts at HW, and is the S of a group of islets extending NW to the mainland.

Ship Rock (44°46'N., 62°46'W.), after which the harbor is named, lies about 1.3 miles NW of Tucker Point. It is a remarkable clay slate cliff, 23m high, which when seen from a distance seaward, resembles a ship under sail.

Hardwood Island lies about 0.3 mile W of Ship Rock. A rocky shoal, with a depth of 4.6m, lies about 0.5 mile S of Hardwood Island. Two patches, with depths of 4.9m and 5.5m, lie about 0.5 mile and 0.6 mile W, respectively, of the same island, with shallower depths NE of these patches.

The **Passage Islands** (44°45'N., 62°47'W.), the largest 9m high and wooded, lie between Wolfes Island and DeBaies Point (Day Point), about 1.3 miles NW.

Anchorage.—Day Cove, between Passage Island and DeBais Point, affords secure anchorage, in 7 to 8m, mud, with the NE extremity of Passage Island bearing 105°, distant 0.5 mile.

3.16 **Ship Harbour** (44°47'N., 62°49'W.) is entered between Lapstone Point, about 0.4 mile N of DeBaies Point, and Black Point, about 0.6 mile further NNW. Beach Point lies about 0.3 mile W of Black Point. The harbor has a narrow entrance and provides secure shelter for small vessels. The single government wharf is no longer usable and therefore the port is closed to commercial traffic.

Ice.—In average years the harbor is frozen over from the middle of December to the middle of March.

Tides—Currents.—The tidal rise at Ship Harbour is 1.9m at MHWS, and 1.6m at MHWN.

The ordinary velocity of the tidal currents does not exceed 0.5 knot, but after heavy rains the melting of the winter snow, or SE gales, the ebb current is reported to be much stronger.

Aspect.—Black Rock, awash, lies about 0.2 mile SE of Black Point. Shoals, with depths of less than 5.5m, extend about 90m S and about 0.2 mile NE of the rock.

O'Brien Reef, which dries 1.2m, lies on the NE side of the channel, about 0.4 mile NW of Black Point. The channel between O'Brien Reef and Beach Point is only 146m wide between the 5m curves.

Salmon Point (44°47'N., 62°49'W.), on the E side shore of the harbor, about 0.8 mile NW of Black Point, has clay cliffs and a drying spit off its W extremity. A bank, with depths of less than 5m, extends about 0.2 mile offshore N of the point. The wharf SE of the point is no longer usable.

Whale Island, small and low, lies close off the W shore, nearly 1 mile NW of Beach Point.

Laybolts Island (Caroline Island), with its S end about 0.2 mile NW of Whale Island, is easily identified by its round wooded summit, 63m high, near its N end.

Mussel Island, about 1 mile NNW of Salmon Point, has a

drying reef extending about 0.1 mile NW of it.

North of Laybolts Island and Mussel Island, the harbor is encumbered by rock and shoals to a line joining Eisans Point about 1 mile NW of Mussel Island, and Welsh Point, 0.5 mile E. North of this line, a clear basin, with depths of 7.3 to 16.5m, extends about 1.8 miles W to the head of the harbor.

Anchorage.—The best anchorage is in Ship Harbour between Salmon Point and Whale Island, in 8 to 12m, mud. Secure anchorage can also be found ESE of DeBaies Point, in about 8m, mud; a recommended berth lies with the NE extremity of the Passage Islands bearing 105°, distant 0.5 mile. A buoy is moored 0.3 mile SSE of DeBaies Point, about 0.3 mile SW of the anchorage position.

Mariners should not proceed beyond the anchorage W of Salmon Point without local knowledge.

Directions.—Approaching from the vicinity of the lighted whistle buoy marking Little Rock, pass E of this buoy and approach with the summit of Ship Rock, in line bearing 334° with the W extremity of Bald Island, to pass between Bear Rock and the dangers extending SE from Wolfes Island. When N of Bear Rock, steer to pass midway between Wolfes Point and Bald Island. Then steer for Lapstone Point and after passing NE of Passage Island, either steer for the anchorage in Day Cove or if for Ship Harbour, bring the NE extremity of Caroline Island in line with the conspicuous white house on Eisans Point, bearing 312°. Steer on this range, and when N of Black Point, steer to pass midway between O'Brien Point and Beach Point, and then to the anchorage. Vessels without local knowledge should not proceed beyond the recommended anchorage.

Both Black Rock and O'Brien Reef are marked close S by buoys.

Caution.—Marine farming activities are situated at many areas within Ship Harbour and mariners are advised to navigate with caution.

Ship Harbour to Sheet Harbour

3.17 Shoal Bay (44°45'N., 62°41'W.) affords good shelter to shipping and is easy to access. It is entered between Green Point, the SE extremity of Borgles Island, and Outer Island, which lies close S of Tangier Island.

Caution.—Tangier Shoal (Silver Shoal), with a least depth of 7.9m, lies about 3.3 miles SE of Outer Island.

Broad Breaker, with a 10.7m patch SE of it, and Bull Rock, on the W side of the approach, have been described previously in paragraph 3.14 and paragraph 3.15, respectively. Depths of less than 5.5m lie about 0.4 mile N of Bull Rock.

Borgles Point (Borgle Bluff) (44°46'N., 62°43'W.), the NE extremity of Borgles Island, lies about 1.5 miles NNW of Green Point. Borgles Shoal, with a depth of 3.7m, lies about 1 mile SE of Borgles Point. A bank, with depths of less than 9.1m, extends about 0.5 mile S of Mouseback Point, the SE extremity of Outer Island. A 4.9m patch lies on this bank about 0.2 mile SSE of the same point.

Baltee Point (44°46'N., 62°42'W.), the SW extremity of Baltee Island, lies about 1.3 miles NNE of Outer Island. Baltee Shoal, with a least depth of 5.5m, lies about 0.5 mile SE of Baltee Point.

Net Point (Net Rock Point), the SW extremity of Inner Baltee Island, lies about 0.8 mile NW of Baltee Point. Net Shoal, with a depth of 4.9m, lies about 0.3 mile S of Net Point.

Gravel Island, 2.1m high and composed of mainly boulders and stone, lies about 0.8 mile NW of Net Point. Foul ground extends about 0.2 mile W and SW of the island. Shag Ledge (Eve Ledge), 0.3m high, lies about 0.4 mile SW of Gravel Island. Shoal water extends for about 0.1 mile around the ledge.

Tuff Island, with Mary Island about 0.1 mile SW, lies about 0.4 mile W of Gravel Island. Glawsons Cove (Shellnut Cove) lies about 0.2 mile NW of Tuft Island.

Beaver Bluff (Kennedy Point), with red cliffs about 0.3 mile NE of it, lies about 0.8 mile W of Glawsons Cove. Mercury Rock, with a depth of 0.6m, lies about 0.3 mile WSW of Kennedy Point.

Middle Ground, with a depth of 2.7m, lies about 0.5 mile NW of the N extremity of Borgles Island.

Anchorage.—Vessels may anchor, in 11 to 12m, mud, about 0.5 mile NNW of the N extremity of Borgles Island. Small vessels can anchor in the N part of Shoal Bay, W of Glawsons Cove, in 5.5 to 6.4m, mud.

Directions.—Approaching Shoal Bay from the E, pass 0.75 mile S of Outer Island to clear the bank extending S from the islands, and then steer 305° for Borgles Bluff, passing between Baltee and Borgles Shoals. When N of Borgles Shoal, alter course N to bring the W end of the red cliff NE of Beaver Bluff to bear 308°, open W of Mary Island. When W of Net Shoal, steer to pass between Shag Ledge and the N point of Borgles Island, and then to the anchorages.

3.18 Tangier Harbour (44°48'N., 62°43'W.) is entered between Tangier Island and **Ironbound Island** (44°46'N., 62°39'W.), about 0.5 mile NNE. The entrance is not easy to identify, the land being low and devoid of any remarkable features, with the exception of **Porcupine Hill** (44°47'N., 62°40'W.), 50m high, a conspicuous wooded hill resembling a porcupine on the E side of the harbor.

Tangier Shoal has been previously described in paragraph 3.17. There are numerous dangers, including Horse Rock and Popes Shoal, on the E side of the approach, which will be described with Popes Harbour in paragraph 3.19.

Ironbound Ledge, above-water, lies near the outer end of a bank, with depths of less than 5.5m, extending about 0.2 mile S of Ironbound Island.

Drunken Dick, which dries 0.9m, lies about 0.4 mile SE of Ironbound Ledge. A shoal, with a least depth of 5.5m, lies about 0.4 mile SSE of Drunken Dick.

It is recommended that mariners without local knowledge should not attempt to enter the harbor.

Sandy Cove Point (44°46'N., 62°40'W.) lies about 0.3 mile W of Ironbound Island. A bank, with depths of less than 5.5m, extends about 0.1 mile S and about 0.4 mile NW of the point.

A bank, with depths of less than 5.5m, extends 0.1 mile N from Tangier Island and 0.2 to 0.3 mile E of Baltee Island.

There are a number of dangers, above and below-water, near the edge of the 5.5m curve, which lies about 0.3 mile E of the Baltee Islands.

Porcupine Point, on which Porcupine Hill is located, lies about 0.5 mile NNW of Sandy Cove Point. Whaleback, a group of drying rocks, the highest of which dries 0.6m, lies about 0.5 mile NW of Porcupine Point. The E and W edges of Whale-

back are buoyed. A 4m patch lies about 0.2 mile ENE of Whaleback.

Shag Ledge, 0.3m high, lies about 0.4 mile NW of Whaleback.

Anchorage.—Vessels may anchor in the E part of the harbor, about 0.7 mile NW of Porcupine Point, in a depth of 6.1m, mud. More secure anchorage can be found about 0.2 mile ENE of Indian Point off the entrance to Mason Cove, in about 4m.

Hog Island, with Hog Island Point at its NW extremity, lies about 1.3 miles NW of Porcupine Point.

Directions.—From a position about 0.2 mile NE of Tangier Lighted Whistle Buoy, steer for Porcupine Hill, bearing 328°, passing midway between Tangier Island and Drunken Dick. Then alter course to pass not less than 0.1 mile SW of Sandy Cove Point. When Porcupine Hill bears 044°, alter course N and bring Porcupine Point, bearing 136°, astern, and in line with the S end of Sandy Cove Beach, located about 0.2 mile NE of Sandy Cove Point. Then steer on this range to pass between Whaleback and the 4m patch, about 0.2 mile ENE, and to the anchorage.

Vessels of light draft proceeding to

Mason Cove should pass about 0.2 mile N of Shag Ledge and around Hog Island at the same distance to the anchorage.

3.19 Popes Harbour (Pope Harbor) (44°48'N., 62°39'W.) is entered between **Popes Head** (44°47'N., 62°37'W.), the S extremity of Phoenix Island, and Popes Rock, 0.9m high, about 1 mile SW. The navigable channel is restricted to a width of about 0.3 mile because of the many dangers. There is no shelter in the harbor from S gales, which send in a heavy swell, except N of Harbour Island, located about 2 miles NW of Popes Head.

Tides—Currents.—The tidal currents in Popes Harbour are weak and affected by wind, as is also the rise of tide.

Aspect.—A lighted whistle buoy is moored about 1.8 miles S of Popes Rock. A lighted bell buoy is moored about 0.2 mile SW of Popes Head.

Popes Harbor Light is shown at an elevation of 7.6m from a tower on the W side of Harbor Island.

Horse Rock (44°45'N., 62°36'W.), with a depth of 2.7m, lies about 1.5 miles S of Popes Head. A shoal, with depths of less than 9.1m, extends about 0.2 mile SE and W of the rock. A black can buoy is moored about 0.4 mile SE of Horse Rock.

Popes Shoals, with depths of 2.1 to 9.1m, extend more than 0.1 mile S and E, and nearly 1 mile SE from Popes Rock.

Gerard Head (44°47'N., 62°38'W.), the S extremity of Gerard Island, lies about 1 mile NW of Popes Head. A shoal, with depths of less than 5.5m, on which are several rocks, above-water, extends nearly 0.2 mile W of Gerard Head.

Schooner Rock, with a depth of 1.5m, lies about 0.5 mile WSW of Gerard Head. A buoy is moored at the outer end of shoal ground extending about 0.1 mile SE of the rock. A 1.8m and a 1.2m shoal lie about 0.3 mile SE and 0.3 mile S, respectively, of Schooner Rock.

Black Rock, 1.8m high, lies about 0.4 mile S of Harbour Island. A shoal, with a least depth of 1.8m, lies about 0.1 mile NE of the rock.

Harbour Ledges (Barrier Reef), above-water in places, extends about 0.3 mile W from a point on Gerard Island, about 0.5 mile N of Gerard Head.

Shoal water extends about 135m W from the W end of Harbour Island.

The Mink Islands lie about 0.3 mile NW of Harbour Island. The SW island is 6.7m high to the treetops, while the bare NE island is 4m high. Depths of less than 5.5m extend about 0.1 mile S of the islands.

Anchorage.—Vessels of appropriate size can find anchorage N of Harbour Island, in about 8m, mud, protected from S gales, but space is severely restricted; a recommended berth is about 137m SSE of Bollong Point. More secure and spacious anchorage can be found in the landlocked approaches to Popes Harbour village, between the NW side of Gerard Island and the mainland. Small craft can find anchorage in Shelter Cove, favoring the S shore on entry to avoid the 0.3m shoal.

Directions.—To enter Popes Harbour, pass E of Horse Rock and steer for Gerard Head, bearing 319°, slightly open of the E side of Harbour Island, which leads between Pope Head and Popes Shoals. When Popes Head bears about 075°, alter course W so as to bring the SW and W points of Harbour Island in line bearing 322°. Steer on this bearing, which leads between Gerard Head and Schooner Rock, until SW of Harbor Ledges. Then alter course to pass midway between Harbour Island, the W shore of the harbor. Then round Harbour Island at a distance of 0.15 mile and proceed to the anchorage.

3.20 Spry Bay (44°48'N., 62°35'W.) is entered between **Taylor Head** (44°47'N., 62°33'W.) and Stony Island, 9.1m high, about 2 miles W. Gerard Island, 30m high, and Phoenix Island, 39m high, provide protection from the SW. Taylor Head, 13.7m high, is the S extremity of a long narrow peninsula.

Access to the bay is difficult and is afforded by one of three entry channels between a number of dangers obstructing the entrance. The approach channel is buoyed.

Tomlee Head (44°49'N., 62°36'W.), about 3 miles NW of Taylor Head, is saddle-shaped and steep-to on its S side. A light is exhibited from a white tower, dividing the head of the harbor into Tomlee Bay to the E and Taylor Bay to the W. Tomlee Bay, E of the head, is almost full of rocks, but affords shelter to small fishing vessels.

Spry Harbour, the W part of Spry Bay, is entered between Tomlee Head and the N coast of Gerard Island. Taylor Bay, the N arm of Spry Harbour, is obstructed towards its head by rocks and shoals.

Redman Shoal (44°46'N., 62°33'W.), with a depth of 10.7m, lies about 1.4 miles SSW of Taylor Head. A 10.7m patch lies nearly 0.1 mile S of Redman Shoal.

A lighted bell buoy is moored about 0.5 mile S of Redman Shoal.

Mad Moll Reef, on the E side of the entrance, extends about 0.8 mile SW from the W end of Taylor Head, and consists of two dry patches and many rocks with depths of less than 1.8m. From its SW extremity, the reef runs another 0.8 mile N, and on this part lie two patches with depths of less than 1.8m.

Maloney Shoal, with a least depth of 3.7m, lies about 0.7 mile SE of Stoney Island (Stony Island). A buoy marks the SE side of the shoal.

Herring Shoal, with a depth of 3.4m, lies about 0.7 mile S of Stoney Island.

Maloney Rock, 2.7m high, lies about 0.4 mile ENE of the SE end of Stoney Island.

Neverfail Shoal, with a least depth of 4.6m, lies about 0.3 mile ENE of Maloney Rock.

Bald Rock, about 0.8 mile SSE of Tomlee Head, is the outermost of the islets and rocks lying in the entrance to Tomlee Bay. Leslie Island lies about 0.2 mile NE of Bald Rock. A 7.3m rocky patch lies about 0.2 mile W of Bald Rock.

Ram Rock, which dries 0.3m, lies about 0.2 mile E of Lawler Point, the NE point of Gerard Island.

Anchorage.—There is good anchorage in Spry Harbour, in depths of 11 to 14.6m, mud. Fishing vessels anchor near the head of Tomlee Bay, and small vessels can also anchor in Taylor Bay. There is a least depth of 5.8m in the approach to the anchorage in Spry Harbour.

Local knowledge is required for anchorage in Tomlee Bay and Taylor Bay.

Directions.—A sector light, shown from Tomlee Head, marks the preferred channel into the bay.

To enter Spry Bay by the E channel, which is best, steer to pass close E of the lighted bell buoy marking Redman Shoal, with the E side of Tomlee Head bearing 340°, in line with high E side of Leslie Island. This range leads W of Redman Shoal and Mad Moll Reef, and E of Neverfail Shoal. When Maloney Rock comes in line with Popes Head, bearing 237°, alter course NW to pass between the ridge extending NNW from Neverfail Shoal and the 9.1m patch N of it, then between Ram Rock and Bald Rock. Then round Gerard Island at a distance of 0.2 mile and proceed to the anchorage.

Sheet Harbour

3.21 Sheet Harbor (44°54'N., 62°30'W.), one of the harbors on the SE coast of Nova Scotia, is a landlocked inlet extending several miles N from its entrance. Numerous dangers lie in the approach, some of which lie as far as 4 miles offshore. This harbor affords sheltered anchorage and has two berths. The principal commodity handled is wood pulp.

The approach to Sheet Harbor lies between Gullford Island and Sober Island, 40.5m high, about 4 miles NE. Fishery Island, 15.2m high, lies about 0.2 mile E of the S extremity of Sober Island. **Fishery Point** (44°49'N., 62°27'W.) is the E extremity of Fishery Island.

Gullford Island, 9.1m high, lies about 2 miles NE of Taylor Head. The entrance to Mushaboom Harbour lies to the W, and the entrance to Sheet Harbor to the E of the island.

Sheet Rock (44°50'N., 62°30'W.), 13.7m high, about 1 mile farther NE, lies in the entrance to Sheet Harbor. There is a remarkable cliff of clay slate on the S side of the rock, which resembles a suspended sheet from a distance. A light stands on the rock. A small rock, which dries 1.8m, lies about 90m W of Sheet Rock.

A group of reefs and shoals, the highest of which is 2.4m high, lies about 0.5 mile WSW of Sheet Rock.

Sheet Rock Light

Ice.—Ice forms in Sheet Harbour about the middle of January and breaks up in early March. During this period the assistance of an ice breaker is necessary.

Tides—Currents.—The mean spring range is about 1.5m, the mean neap range is about 1m. The currents in the entrance do not exceed a rate of 0.5 knot, but both the height of tide and strength of current are affected by wind.

Pilotage.—Pilotage is available, but is not compulsory. Local knowledge is required for navigation above Ward Point. Pilots board at position 44°44'N, 62°28'W.

Contact Information.—The Port Authority can be contacted by telephone (902-426-5311).

Anchorage.—Vessels may anchor anywhere in Sheet Harbour. The best berths are in the S part of the area between the Western Islands and Malagash Island in approximately 12-15m, mud, protected SE by East Gibbs Island. It is necessary to avoid (positioned from the E end of Malagash Island) a 4.9m rocky patch, (0.6 mile ENE), lying 0.3 mile SE of Horse Island and a rock (0.2 mile ESE) with a depth over it of 3m, lying 0.1 mile S of Monahan Island. Vessels of a suitable size may anchor S of Ward Point, in 11 to 15m, mud.

3.22 Broad Bank (44°44'N., 62°32'W.), with a least depth of 14.6m, rock, extends about 4 miles to the S of Taylor Head. Pollock Ground, with a depth of 10.1m, lies nearly 3 miles SSE of Taylor Head.

Yankee Jack, with a depth of only 0.9m, lies about 2.5 miles SE of Taylor Head. A 1.8m shoal lies about 0.3 mile W of Yankee Jack. At HW, with a smooth sea, neither of these shoals break. A shoal, with a depth of 4.6m, lies about 345m SSW, and another shoal, with a depth of 9.6m, about 1.1 miles WSW of Yankee Jack.

Taylor Goose, which dries 1.2m, lies about 1.8 miles SE of Taylor Head.

Sheet Harbour—Berth Information

Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
Sheet Harbor Berth	152m	10.3m	214m	9.8m	Scrap metal, wood chips, and breakbulk.

Mushaboom Shoal, with a depth of 5.5m and which seldom breaks, lies about 1.5 miles ESE of Taylor Head.

A rock, with a depth of 6.7m, and another, with a depth of 8.2m, lie about 0.6 mile and 0.8 mile E, respectively, of Taylor Head.

Psyche Shoals, with a least depth of 3.7m, lie about 1 mile ENE of Taylor Head.

Geddes Shoal (44°45'N., 62°27'W.), about 4.3 miles S of Fishery Point, has a least depth of 9.1m and breaks only after heavy gales. A lighted whistle buoy is moored 1 mile SW of Geddes Shoal.

Logan Rock, with a depth of 5.9m and which seldom breaks, lies about 3.8 miles SSW of Fishery Point.

Western Shagroost, 3.7m high, lies about 2 miles S of Fishery Point. Foul ground, with drying rocks, extends about 0.6 mile NE and SW of it. A reef, which dries 0.3m, lies about 0.5 mile SSW of Western Shagroost. Monroe Rock, with a least depth of 3.7m, lies about 1 mile SE of Western Shagroost.

Eastern Shagroost, 1.8m high, lies about 1.8 miles ENE of Western Shagroost. It is steep-to on its S side, but foul ground extends about 0.4 mile N and W of it. There are several patches, with depths of 2.7 to 9.1m between this rock and the rock which extend about 0.3 mile SE from Fishery Point.

Babin Shoal, with a least depth of 4.6m, lies about 1.7 miles SW of Fishery Point. Isolated shoals, with depths of 7 to 9.1m, lie within 0.8 mile of Babin Shoal.

Macdonald Rock, which dries 0.9m, lies about 0.8 mile SSW of Macdonald Point, the SW extremity of Sober Island. This rock lies near the outer end of Macdonald Shoals, a group of shoals extending about 0.6 mile WSW and about 1 mile S of the point.

Four shoal head, with depths of 7.9 to 8.8m, are centered about 0.6 mile WSW of Macdonald Rock.

A shoal, with a rock 0.3m high at its outer end, extends about 0.2 mile SE from Guildford Island.

3.23 Inner approach.—The harbor is entered between **Danbury Island** (44°51'N., 62°30'W.), 12m high, located close W of Sober Island, and the Western Islands, 12.2m and 15.2m high, which lie about 0.7 mile NW of Sheet Rock. The entrance channel has a depth of over 13.7m and the leading marks being easily distinguished, little difficulty should be experienced in entering by day in clear weather. The numerous dangers in the approach render navigation difficult at night or in poor visibility.

A rock, awash, lies about 60m NE of the E extremity of the Western Islands.

Horse Island, 6.1m high, lies about 0.7 mile NW of the Western Islands. A 2.4m shoal and shoal with 4.9m lie about 0.2 mile NE and 0.3 mile SE, respectively, of Horse Island.

Lawrence Islet, 3m high, lies about 0.5 mile NE of Horse Island and a 7.6m patch and a 2.7m patch lie 0.2 mile SSW and SE, respectively, of Lawrence Islet.

White Rock, with a depth of 0.6m, lies about 0.5 mile N of the W extremity of Danbury Island.

Gull Ledge, a shingle ledge with its N end above-water, lies about 1 mile N of Danbury Island.

Slab Point (44°53'N., 62°30'W.), a prominent point on the W side of the harbor, lies about 1.5 miles NNE of Lawrence Islet. A shoal, with depths of 2.7 to 5.2m, extends about 0.4 mile off the W side of the harbor, midway between the point and the islet.

Slab Shoal, with a least depth of 2.1m, extends about 0.3 mile NE from Slab Point. The W extremities of Danbury Island and Sheet Rock, in line bearing 185.5°, leads close E of Slab Shoal.

Salmon Island, 13.7m high, lies on the E side of the harbor, about 2.3 miles N of Danbury Island. Foul ground extends about 0.1 mile W and SW of the island, and a shoal, with a least depth of 4.3m, lies about 0.7 mile S of Salmon Island.

3.24 At **Church Point** (44°55'N., 62°31'W.), about 5 miles above the harbor entrance, the harbor divides into Northeast Arm and Northwest Arm.

Ward Point, about 0.8 mile SE of Church Point, is a narrow shingle spit extending nearly 0.1 mile from the NE shore of the harbor.

A mussel bed, which dries 0.3m, lies about 0.2 mile W of Church Point.

A lighted orange and white mooring buoy (privately maintained) lies 0.3 mile SE of Church Point. A dangerous wreck lies 0.4 mile N of Church Point. The hospital, a large brick building, is situated 1.1 miles NW of Church Point.

Ice.—Ice forms in Sheet Harbor about the middle of January and breaks up early in March. During these months, the aid of an icebreaker is necessary to reach the head of the harbor.

Tides—Currents.—The tidal rise at Sheet Harbor is 1.8m at MHWS and is 1.5m at MHWN.

The velocity of the tidal currents in the entrance to Sheet Harbor does not normally exceed 0.5 knot, but the velocity, as well as the tidal rise, is affected by the wind.

Depths—Limitations.—At the head of Northwest Arm there is a public wharf, 55m long at the face, with a least depth of 4.6m alongside.

The Sheet Harbor Marine Terminal is situated on the W shore of the harbor opposite Ward Point. The wharf is 155m long with a least depth of 9.7m alongside. Mooring buoys are placed near the shore on each end of the wharf.

On the N shore of Malagash Cove, about 0.3 mile WNW of Horse Island, there is a government wharf with a width along the face of 12m and a depth of 4.9m alongside. A 4.3m shoal patch lies about 75m off the face of the wharf.

Pilotage.—Pilotage is not compulsory. Vessels requesting pilotage should contact the Atlantic Pilotage Authority 24 hours in advance, confirming or correcting 6 hours in advance. Pilots board about 4.7 miles SE of Taylor Head.

Anchorage.—Vessels may anchor anywhere in Sheet Harbor. There is good anchorage, in 11.6 to 15.2m, mud, NW and W of the Western Islands. Smaller vessels may anchor to the S of Ward Point, in 11 to 15m, mud.

Directions.—There are three principal channels of approach to Sheet Harbor are Middle Passage, the widest and recommended route, between Logan Rock and Yankee Jack; Eastern Passage, between Western Shagroost and Logan Rock; and Western Passage, between Taylor Goose and Psyche Shoals, as follows.

1. **Middle Passage.—**From the vicinity of Lighted Whistle Buoy X26, steer with the E extremity of Sheet Rock in line 355° with the W extremity of Danbury Island. This course leads 0.5 mile E of Yankee Jack and clear of all dan-

gers except for the patches, with depths of 7.3m and 7.9m, about 1.8 miles and 1 mile S, respectively, of Sheet Rock. The latter dangers can be easily avoided by bringing the W extremities of Sheet Rock and Danbury Island in range bearing 004°. After clearing these dangers, steer to pass not less than 0.15 mile on either side of Sheet Rock and then in mid-channel between Danbury Island and the Western Islands.

2. **Eastern Passage.—**Do not bring Lighted Whistle Buoy X26 to bear less than 250° until the W extremity of Sheet Rock is in line bearing 343.5° with the E extremity of the Western Islands, then steer on this bearing, which leads E of Geddes Shoal and Logan Rock. When N of the latter, the leading marks should be used only as a general guide and opened as necessary to clear the dangers W of Western Shagroost and Babin Shoal. After passing Macdonald Rock, steer to pass not less than 0.15 mile on either side of Sheet Rock, then as previously directed.

3. **Western Passage.—**Steer with the W extremity of Sheet Rock in line bearing 019° with the E extremity of Danbury Island. This course leads W of Taylor Goose and Mushaboom Shoal, close E of Psyche Shoal, and between the bank extending 0.2 mile SSE from Guillford Island and the 10.1m rocky patch 0.4 mile further SE. When N of Guilford Island, proceed as directed above.

Vessels anchoring in the S part of the harbor should steer to pass not less than 0.15 mile E and N of the Western Islands.

Vessels proceeding to the anchorage SW of Ward Point should pass W of White Rock, and then steer in mid-channel to the anchorage. Vessels without local knowledge should not proceed above this anchorage.

Sheet Harbour to Beaver Harbour

3.25 Mushaboom Harbour (44°50'N., 62°33'W.) is entered between Psyche Island and Guilford Island. Shag Rock, drying 0.6m, lies on foul ground extending about 0.3 mile N of Psyche Island.

Bob Bluff lies about 0.7 mile NE of Shag Rock, and Milam Bluff, 29m high, lies nearly 1.5 miles farther NNW. Bob Shoal, a rock at a depth of 2.7m, lies about 0.2 mile NNE of Bob Bluff.

Gull Rock, 4.3m high, lies about 0.9 mile N of Bob Bluff. Foul ground extends about 0.2 mile N and 0.1 mile E of the rock.

Yellow Rock (Bald Rock), 3.4m high, lies about 0.4 mile WSW of Gull Rock. A 5.5m shoal lies midway between Gull and Yellow Rocks.

Anchorage.—A vessel may anchor, in 11m, about 0.6 mile NNW of Gull Rock. Here the force of the sea is weakened to some extent by Gull Island and the shallow bank on which it stands.

Small craft can anchor off Bull Beach at the head of the bight between Bob Bluff and Andersons Bluff.

Directions.—To enter the harbor, keep the W extremity of Sheet Rock, bearing 019°, in line with the E extremity of Danbury Island until clear of Psyche Shoals, then alter course W to pass midway between Shag Rock and Ship Reef, and then NE of Bob Shoal. Then pass W and N of Yellow Rock to the anchorage. Vessels of light draft can pass between Yellow Rock and Gull Rock.

If entering on the other leading marks for Sheet Harbor, when Bob Bluff bears about 305°, alter course W to pass midway between Shag Rock and Ship Reef.

3.26 Sheet Harbor Passage is entered between **Fishery Point** (44°49'N., 62°27'W.) and Hardwood Island, 17.4m high, with red cliffs on its W side, nearly 1 mile NE. This passage is used by small craft with masters having local knowledge.

Sober Island Village lies on the N side of Sober Island, W of Cameron Point, the NE extremity of the island. There is a government wharf near the village which has a face 25m long and depth of 3.4m alongside. Good anchorage is reported in Sheet Harbor Passage.

Range lights, in line bearing 343°30', are shown on the mainland; the front light is about 0.4 mile N of Cameron Point. The range lights lead between Western Shagroost and Eastern Shagroost; however, they lead over a 4.6m patch about 0.5 mile ESE of Fishery Point. A lighted bell buoy is moored on the range line, about 0.2 mile S of the above shoal.

Beaver Island (44°50'N., 62°21'W.), lying about 4.5 miles E of Fishery Point, is 12.2m high with slate cliffs which appear white when seen from seaward, and is partly covered with shrubs. Beaver Island Light is shown from a white circular tower, 8.5m high, near the E end of the island.

A shoal, with a depth of 3m near its outer end, extends about 0.4 mile ENE from the E extremity of the island. A lighted bell buoy is moored about 0.5 mile E of Beaver Island.

A shoal, with a depth of 9.1m or less and on which are two islets, extends about 0.5 mile WSW from the W end of the island.

William Shoal, with a depth of 4.6m, lies about 2 miles SE of Beaver Island Light. A rocky shoal, with a depth of 8.5m, lies about 0.2 mile ENE of William Shoal. A lighted whistle buoy is moored about 0.8 mile E of William Shoal.

Sam Ground, with a depth of 12.8m, lies about 3 miles SSW of Beaver Island Light.

Horse Shoal, with a depth of 8.5m, lies about 1 mile SSE of Beaver Island Light. A 9.1m patch lies about 0.5 mile W of Horse Shoal.

Marmot Rock (The Bassoon), awash at LW, lies about 2 miles NE of Beaver Island Light. It seldom breaks with the prevailing SW wind. A shoal, with a least depth of 4m, lies about 0.3 mile ESE of Marmot Rock.

Hard Shoal (Hardwood Island Shoal), with a depth of 9.1m, about 2.5 miles ENE of Beaver Island Light, is the outermost danger on the E side of the approach to Beaver Harbor.

Quoddy Shoals, awash, lie about 2 miles NNE of Beaver Island Light. A 6.7m rocky shoal lies about 0.4 mile ESE of the shallowest part of the shoals. A 3.4m rock is located 0.2 mile NNW of Quoddy Shoals.

Middle Shoal, with a least depth of 0.9m, lies about 1.5 miles N of Beaver Island Light. A rocky patch, with a least depth of 1.8m, lies 0.3 mile WNW of Middle Shoal. Another patch, with a depth of 4.6m, lies 0.2 mile S of Middle Shoal, and a rock, with a depth of 4m, lies 0.3 mile ESE of Middle Shoal.

The Harbour Islands are a group of islands, the largest of which is 15.2m high and lies about 2.5 miles N of Beaver Island Light.

Pumpkin Island (44°49'N., 62°23'W.), 27.4m high and conspicuous, lies about 1.3 miles W of Beaver Island. Drying

ledges extend about 0.5 mile S of the island, and a 2.4m shoal lies about 0.6 mile SW of the island's S extremity.

Horse Island, 12.2m high, lies about 1 mile NW of Beaver Island. A small island lies about 0.2 mile SE of the island, and a rocky ledge extends over 0.3 mile E of the island.

Sutherland Island, about 1 mile farther NW, has a prominent conical summit, 32.6m high, and is covered with trees. Rocky ledges extend about 0.5 mile SE of the island. There are many islets, rocks, and shoals W and NW of Sutherland Island.

Harbour Rock, 3.7m high, lies about 1 mile E of Beaver Point. A rock, with a depth of 1.5m, lies about 0.4 mile E of Harbour Rock. Another rock, with a depth of 4.3m, lies about 0.6 mile SE of Harbour Rock.

3.27 Beaver Point (44°52'N., 62°24'W.) lies about 3.8 miles NW of Beaver Island.

Sandy Island, about 0.8 mile NE of Beaver Point, is partially treed and has a red cliff, 6.1m high, on its S side. From this cliff, a shoal, with depths of less than 5.5m, extends about 0.3 mile SSE. A 3.4m patch lies about 0.3 mile S of the island, and a 6.1m rocky shoal lies about 0.2 mile farther S.

Hardwood Island, steep-to on its W side, lies about 0.3 mile N of Sandy Island. Rocky Island lies 0.5 mile W of Hardwood Island. A rock, with a depth of 0.9m, lies about 230m E of the E extremity of Rocky Island.

Balcom Shoal, with a least depth of 2.7m, lies from 0.1 to 0.3 mile W of the N extremity of Hardwood Island.

Whale Rock, which dries 1.5m, lies about 0.6 mile N of Hardwood Island. A 4.9m shoal lies about 0.2 mile W of Whale Rock.

MacLeod Island, about 0.4 mile W of Rocky Island, lies in the entrance to McLeod Cove, the NW part of the harbor. Between the N ends of Rocky Island and McLeod Island is a rocky ledge extending 0.25 mile SSW from McLeod Point, the E entrance point of the cove.

A reef of stones, connected to a sand and shingle spit, extends about 0.2 mile NNW from a point about 1 mile NW of Beaver Point.

3.28 Beaver Harbor (44°53'N., 62°25'W.) is entered between Beaver Point and Nowlan Head, about 2.5 miles ENE. The harbor is easy to enter after the lighthouse on Beaver Island has been identified. Quoddy Hill, 56m high, nearly 0.5 mile N of Nowlan Head, is conspiuous from seaward. Port Dufferin, where there is a church with a steeple, lies about 2.8 miles NNE of Beaver Point. The Salmon River enters the harbor near the village.

There is a government wharf about 1.3 miles NW of Beaver Point. The wharf is 41m long, L-shaped, and 13m long at the outer face, which has a least depth of 2.7m alongside.

Factory Cove, 1.75 miles NNE of Beaver Point, has a public pier, 15m long, 6m wide. It was reported partly in disrepair in 1990.

Anchorage.—Small vessels may anchor in the Salmon River anchorage, N of Hardwood Island, in a depth of 7 to 10m. Attention should be given to Whale Rock, which lies about 0.6 mile N of Hardwood Island and is close W of the submerged end of a ruined breakwater. A rocky 3m patch lies about 0.2 mile WNW of Whale Rock. The rock is marked by a buoy, which is close W.

Directions.—Having made the lighted whistle buoy moored ESE of **William Shoal** (44°48'N., 62°19'W.), pass NE of it, and NE of the lighted bell buoy moored E of Beaver Island. Should the bell buoy not be in position, give the E end of Beaver Island a berth of at least 0.5 mile to avoid the shoal extending 0.4 mile ENE from it. Then steer in mid-channel between Middle Ground and Sutherland Island, then between Harbour Rock and Beaver Point to the anchorage.

Caution.—It is necessary to avoid a submarine cable laid through the harbor and landed in Macloeod Cove in the vicinity of Bluff Head (close W of Mcleod Island).

A vessel should experience no difficulty in entering Beaver Harbor at night, with the aid of the lighted buoys, and anchoring W of Sandy Island.

It is necessary to avoid Whale Rock, 0.6 mile N of Hardwood Island, which dries 1.5m, and which is marked by a buoy moored close W. The rock lies close W of the submerged end of a ruined breakwater; a rocky 3m patch lies about 0.2 mile WNW of Whale Rock.

Beaver Harbor to Liscomb Harbor

3.29 Between **Nowlan Head** (44°53'N., 62°21'W.) and Baptiste Island, about 2.5 miles NE, there is a bay encumbered with islets, reefs, and shoals, with Quoddy Inlet on the W side. The inlet, entered E of Nowlan Head, is little used as an anchorage as its entrance is encumbered with islets and dangers.

Close S of Baptiste Island, there is a buoyed channel to Beaver Harbour for the use of small craft. Local knowledge is required.

Necum Teuch Harbor (44°57'N., 62°13'W.), entered between **Torpey Island** (44°55'N., 62°16'W.) and Black Duck Island, about 2.3 miles ENE, is the outlet of the Moser River, a small stream admitting only small craft. The anchorages in Necum Teuch Harbor and the bay NW of **Brokenback Island** (44°54'N., 62°16'W.) are exposed to offshore winds and seas.

The **Bird Islands** (44°52'N., 62°17'W.), about 3.4 miles NE of Beaver Island, are the S islands on the W side of the approach. The islands are 5m high and bare. Roaring Cow, awash, lies near the outer end of shoals, which extend nearly 0.8 mile SW of the W extremity of the Bird Islands. Shoal patches, one of which has a least depth of 1.8m, lie within 1 mile NE of the E island of the group.

Chapel Shoal, with a least depth of 11m, lies about 2.7 mile SSE of the E Bird Island, and is the outermost danger on the W side of the approach to Necum Teuch Harbor.

Bassoon Reefs (Bird Island Breakers), the SE of which lies about 1.8 miles SE of the E Bird Island, are an extensive group of large rounded stones which partly dry at LW. They usually break heavily except at HWS tides, when they are not easily identified with an offshore wind. Harvey Shoal and Southwest Breaker are the W and SW dangers, respectively, of this group. A lighted bell buoy is moored 0.75 mile ESE of the SE extremity of Bassoon Reefs.

Snapper Shoal, with a least depth of 7.3m, lies in the fairway, about 2.3 miles E of the E Bird Island.

Brokenback Island, 18.3m high, lies about 1.5 miles N of the Bird Islands. Between Brokenback Island and Baptiste Island, about 0.8 mile WNW, there are numerous islands and dangers.

Kitts Reef, awash, lies about 1.3 miles E of Brokenback Is-

land.

Shag Ledge, which dries, lies about 0.6 mile E of Gold Island. Foul ground extends more than 0.5 mile N of the ledge.

Gold Island, 15.2m high, lies nearly 1 mile NE of Brokenback Island, and between them is the entrance to the anchorage off Harrigan Cove.

3.30 The **Halibut Islands** (44°53'N., 62°12'W.), 10.7m high, about 3.3 miles ENE of the Bird Islands, are a group of islands and reefs on the E side of the approach to Necum Teuch Harbor. Pollock Shoal, with a least depth of 5.1m, lies about 0.5 mile SSE of the SW extremity of the Halibut Islands.

Bowen Ledge, 2.4m high, consists of two rocky ledges located on a shoal with depths of less than 5.5m, about 2.3 miles ESE of the SW extremity of the Halibut Islands. An 8.2m patch lies about 0.3 mile S of the SW extremity of Bowen Ledge. A lighted bell buoy is moored about 0.5 mile SW of Bowen Ledge.

Salamander Rock, with a depth of 0.3m, lies about 0.5 mile N of Halibut Island. A depth of 4.6m lies about 0.2 mile W of the rock.

A 9.1m patch lies about 0.9 mile WNW of the N Halibut Island.

Duck Shoals, on which are two rocks with depths of less than 1.8m, and several shoal heads with depths of 2.4 to 5.5m, extend 0.75 mile S from Black Duck Island, situated about 1.3 mile N of the N Halibut Island.

3.31 **Harbour Rock** (44°55'N., 62°14'W.), 9.1m high, lies about 1.8 miles NE of Gold Island.

Bull Rock, awash, about 0.3 mile ENE of Harbour Rock, lies on a shoal with depths of 8.2 to 8.5m.

Calf Shoal, which nearly dries, lies with its W end about 0.8 mile NE of Harbour Rock, and lies on a bank with depths of less than 5m.

Dry Ledge lies nearly 0.5 mile W of Harbour Rock. Two patches, with depths of 5.2 and 9.1m, lie about 0.2 mile NW and 0.2 mile NNW, respectively, of Harbour Rock.

Ship Island, 27.4m high, lies about 0.5 mile WNW of Harbour Rock. Between Ship Island and Torpey Island lies a large shoal, with depths of 2.4 to 4.6m. On this shoal are several rocks above and below-water.

Middle Shoal, with a least depth of 2.1m, lies about 0.3 mile N of Ship Island.

Moser Rock, with a depth of 1.2m, lies about 1.5 miles N of Harbour Rock.

A reef extends about 0.5 mile E from the W entrance point to the Moser River.

Vessels can obtain anchorage in Necum Teuch Harbor and in the bay NW of the Brokenback Islands; however, both of these anchorages are exposed to offshore winds and seas.

Directions.—Vessels should approach with the summit of Baptiste Island in line with the E extremity of Brokenback Island, bearing 304°, until past Snapper Shoal. If bound for the anchorage NW of Brokenback Island, steer on the range until 1 mile from the island. Then pass at least 0.1 mile NE of Brokenback Island and anchor, in depths of 16.5 to 18.3m, when the W extremity of the latter island bears 176°, distance 0.8 mile.

If proceeding to the anchorage in Necum Teuch Harbor, when past Snapper Shoal, steer to pass 1 mile W of the N Halibut Island, taking care to avoid Salamander Rock and the 4.6m patch lying about 0.2 mile W of the rock. Then steer to pass between Harbour Rock and Bull Rock, taking care to avoid the 9.1m patch NW of the N Halibut Island, and the 8.5m patch, midway between Harbor and Bull Rocks. Then steer NE to the anchorage, giving a wide berth to Calf Shoal. Harbour Rock, bearing 343°, and in line with the W entrance point of the Moser River, leads W of Pollock Shoal and of the Halibut Islands, but also leads over the 4.6m patch lying about 0.2 mile W of Salamander Rock, and also over the 9.1m patch lying 0.5 mile further N.

3.32 **Marie Joseph Harbor** (44°58'N., 62°05'W.) is protected S by Turner Island, Goose Island, and Barren Island, which are fringed by rocks and ledges. False Passage (Salmoneaux Passage), separating Goose Island and Barren Island, is not navigable.

The harbor has two entrances. The W entrance is between Blackbill Point, the NW extremity of Turner Island and Epe Point, about 0.6 mile NE; the E entrance is between the N extremity of Barren Island and Smith Point, about 0.7 mile NW.

The entrances are intricate, especially the W, and should not be attempted without local knowledge in any vessel drawing over 2.7m.

The harbor provides secure anchorage, but is restricted by several dangers. There are several piers and a fish processing plant in Hawbolt Cove, 1 mile NW of Smith Point, in the vicinity of which lies the village of Marie Joseph.

There is an inside buoyed channel for small craft from Barren Island to Necum Teuch Harbor, then as far W as Sheet Harbor Passage.

3.33 **Islands and dangers in the W approach.—The White Islands** (44°52'N., 62°08'W.), the S islands in the W approach to Marie Joseph Harbor, lie with their E end (44°53'N., 62°07'W.), 24.4m high, about 3.5 miles S of Blackbill Point. Camp Island is the W island of the group. Little White Island, 9.1m high, lies about 1 mile NE of the E extremity of the White Islands. Foul ground extends about 0.3 mile W and N of the White Islands. A 6.7m patch lies about 0.5 mile SE of Little White Island. A shoal, with a least depth of 3m, extends NNE for 0.7 mile from the W end of the largest of the White Islands.

A lighted bell buoy is moored about 0.7 mile E of the E end of the White Islands.

West Black Ledges and East Black Ledges, above-water, lie about 0.8 mile and 1.5 miles NE, respectively, of Little White Island. The former is almost joined to Little White Island by reefs.

Lockwood Rock (44°52'N., 62°04'W.), with a depth of 5.5m, is the outermost danger along this section of coast, lying about 2 miles SSE of Little White Island.

A lighted whistle buoy is moored about 0.4 mile S of Lockwood Rock.

Crab Rock, with a depth of 9.1m, lies about 0.8 mile N of Lockwood Rock.

Horseshoe Shoal (Georges Mark), with a least depth of 5.5m, and David Shoal, with a depth of 7.3m, lie about 1.5 miles SSW and 1 mile SW, respectively, of the E end of the White Islands.

Frying Pan, an islet, lies about 1 mile NNE of Camp Island.

A shoal, with a depth of less than 5.5m, extends about 0.3 mile WSW from the island, and there is a depth of less than 7.3m for about 0.3 mile farther WSW. A 7.3m rock lies about 0.8 mile SW of the W end of Frying Pan. A 4.9m rock lies about 0.3 mile W of Frying Pan. Shoal water, with a least depth of 4.6m, extends about 0.7 mile E of Frying Pan.

Byrne Rock (White Cliffs), with a depth of 2.7m, lies about 1 mile NNW of the E extremity of White Island. A 9.1m rocky patch lies about 0.6 mile NNE of the same extremity.

Tuffin Island, 27m high, lies 1.5 miles N of Camp Island; a bank, with depths of less than 9.1m, extends about 2 miles ENE from the island. Tuffin Shoal, with depths of less than 5.5m and a rock awash, lies on this bank, about 1.3 miles E of Tuffin Island.

It is reported that a rock, with a depth of 1.5m, lies in the channel lying between Byrne Rock and Frying Pan on the S and Tuffin Shoal and Tuffin Island on the N. Its exact position is not known as the area has not yet been examined. From the rock, the S and largest Halibut Island was reported to bear 252°. A rock 1.6 miles E of Tuffin Island has depth of 4.3m and extends S from Tuffin Shoal.

Hubbub Rock, awash, lies about 0.5 mile N of Little White Island.

Sheet Rock, 4.6m high, lies about 1.3 miles WSW of the S tip of Turner Island, near the E end of the numerous islands, rocks, and reefs N of Tuffin Island and Tuffin Shoal.

Frenchman Rock, awash, and Siteman Rock, with a depth of 1.8m, lie about 0.5 mile SSW and WSW, respectively, of Blackbill Point, the NW extremity of Turner Island.

Harbour Rock (44°57'N., 62°08'W.), 1.2m high, and Nag Rock, awash, lie 1 mile W and about 0.5 mile NW, respectively, of Blackbill Point.

Ecum Secum Inlet, entered about 1 mile NW of Harbour Rock, is encumbered with islets and shoals, and provides anchorage to small craft with local knowledge.

Ecum Secum West, where there is a public pier, is situated about 0.5 miles WNW of Necum Point on the W side of the harbor. The pier is 43m long, 6m wide, and has a depth at the outer end of 4.3m.

3.34 Islands and dangers in the E approach.—Hawbolt Rock (44°55'N., 61°57'W.), with a depth of 7.6m, lies about 3.8 miles SSE of Liscomb Point, which separates Marie Joseph Harbor from Liscomb Harbor. The sea seldom breaks on this rock. A lighted whistle buoy is moored about 5 miles SE of Liscomb Point.

Black Prince, which dries 0.9m and usually breaks heavily, lies about 2 miles SSE of Liscomb Point. Six rocks or shoals, with depths of 1.2 to 5.8m, lie within 1 mile radius of Black Prince.

A 9.1m patch lies about 1 mile SE of Liscomb Point.

Seal Ledge, awash, with a small islet, 1.2m high near its center, extends about 1.3 miles E of Barren Island. A rock, with a depth of 5.1m, lies 1 mile NE of the E extremity of Barren Island.

Gull Ledge (44°55'N., 62°02'W.), about 1.5 miles S of Barren Island, consists of two bare ridges of slate, 9.1m high, with deep water close to, separated by a narrow gully. A 5.8m patch lies about 0.6 mile E of Gull Ledge.

Nightcap Ledge, 3m high, lies about 0.8 mile S of Barren Island. West Rock (The Blazes), with a depth of 0.6m, lies about 0.3 mile S of the ledge. A shoal, with a depth of 9.1m, lies 1.5 miles E of Nightcap Ledge.

Smith Rock, with a depth of 3.7m, lies about 2 miles S of Barren Island.

3.35 Thrumcap Island (44°57'N., 62°02'W.), 4.6m high, lies in the E entrance, about 0.5 mile E of Smith Point. From its W end, a reef, parts of which are above-water, extends nearly 0.3 mile W. A light is shown from near the W end of Thrumcap Island.

Thrumcap Shoal, with a least depth of 2.4m, lies about 0.4 mile NE of Thrumcap Island. It is the N of a group of shoals, with depths of 2.4 to 5.5m, extending NE and E from the island.

Pan Shoal, on the S side of the entrance, about 0.5 mile E of Thrumcap Island, extends about 0.4 mile from the N side of Barren Island. There is a depth of 3m at the outer end, marked by a buoy. Smith Point, bearing 271°, in line with Turner Point, the N extremity of Hawbolt Island, leads close N of Pan Shoal.

Hawbolt Island (Turners Island), 24.4m high, lies in the harbor close N of Goose Island. Turner Shoal, with a depth of 2.7m at its outer end, extends about 0.5 mile ENE from the E end of the island.

Middle Ground, with a least depth of 2.1m, is a muddy flat covered with eel grass lying in mid-channel between Hawbolt Island and the mainland NE. The buoyed channel lies S of this ground.

Round Island lies midway between Hawbolt Island and Epe Point, the N point of the W entrance. A shoal, with a depth of less than 5.5m, extends about 0.1 mile S and 500m NW of the island. Epe Rock, with a depth of less than 1.8m, lies near the outer end of this shoal, about 0.3 mile NW of Round Island. A rock, with a depth of 2.7m, lies about 0.2 mile E of Round Island.

Anchorage.—There is good anchorage, in 8.8m, mud, about 0.4 mile NW of Turner Point. Anchorage is also available close W of Middle Ground, in about 12m, mud.

Liscomb Harbor and Little Liscomb Harbor

3.36 Liscomb Harbor and Little Liscomb Harbor lie within a line joining **Liscomb Point** (44°59'N., 61°59'W.) and Redman Head, about 2.3 miles NE. Liscomb Island, 45.7m high and covered with trees, lies midway between the two points and shelters both harbors.

Liscomb Light is shown from a tower on **Cranberry Point** (44°59'N., 61°58'W.), the SW edge of Liscomb Island.

3.37 Dangers in the approaches.—Hawbolt Rock (44°55'N., 61°57'W.), 3.75 miles SSE of Liscomb Point, has been previously described in paragraph 3.34. Other dangers, some drying, some awash, and others with depths of 2.7 to 5.9m, lie between Liscomb Point and Hawbolt Rock, and may best be seen on the chart. Some of these dangers break heavily.

Saddle Rock, with a charted depth of 9.1m, lies about 2.8 miles SSE of Crook Point, the E extremity of Liscomb Island.

Channel Rock, with a depth of 6.4m, lies about 2.5 miles SE of Crook Point and breaks in bad weather. An 11m patch, on which the sea breaks in heavy weather, lies about 1.3 miles SE

of the same point. Cranberry Point, bearing 292°, and in line with Smoke Point, about 1 mile WNW, leads NE of the above dangers.

Crook Shoals, with an outer reef 0.3m high, extends about 0.8 mile ESE from Crook Point. A rock, with 1.8m, lies 0.25 mile NE of the same point. A lighted bell buoy is moored about 1.5 miles E of Crook Point.

Liscomb Shoal, with a depth of 4.9m at its extremity, extends over 0.5 mile E from Liscomb Point. A lighted bell buoy is moored off the extremity of the shoal.

Mackerel Shoal, with a least depth of 0.6m, extends about 0.2 mile W from Cranberry Point and is marked at its outer end by a buoy.

3.38 Liscomb Harbor (45°00'N., 62°01'W.), a small practically landlocked harbor, is entered between Liscomb Island and the mainland from Liscomb Point to Smoke Point. Pye Point, on the N side of the harbor, about 1.3 miles NW of Smoke Point, is the S extremity of a small peninsula separating Little Liscomb Harbor from Spanish Ship Bay, a large indentation with numerous islands and rocks. An aquaculture facility has been established on the E side of Spanish Ship Bay in an area 305m in radius from position 45°01'12"N, 62°00'43"W. Mariners are requested to avoid this area.

Liscomb Harbor proper lies W of a line drawn S from Pye Point; the area E of this line is known as the outer harbor.

Slate Cliff, 7.6m high, lies on the S shore of the harbor, about 0.5 mile SSW of Pye Point. Lang Island lies in the entrance to Spanish Ship Bay, about 0.4 mile WNW of Pye Point. Foul ground extends about 320m S of the island.

About 1 mile W of Pye Point the harbor is contracted by shoals, but a channel, with a width of about 0.1 mile and buoyed in places, leads to Liscomb Mills, located at the head of the harbor.

The tidal rise at Liscomb Harbor is 1.7m at MHWS and 1.6m at MHWN.

The public wharf at Pye Point, 48m long, with a depth of 4.6m alongside its face, is in a state of disrepair and closed to vessel traffic.

Anchorage.—The best anchorage, in 7m, mud, lies about 0.4 mile SW of Pye Point.

A submarine power cable is laid from Gravel Point, the NW extremity of Liscomb Island, to the mainland N of Harlan Point, which lies about 1.5 miles WNW of Gravel Point.

Directions.—Approaching Liscomb Harbor from the W, keep seaward of **Hawbolt Rock** (44°55'N., 61°57'W.) until Liscomb church bears about 332° and is open E of Liscomb Point, then alter course and steer with the church bearing 328° and seen over the W extremity of Hemloe Island, passing NE of the lighted bell buoy close E of Liscomb Shoal and abreast Mackerel Shoal. Then round Smoke Point at a distance of about 0.3 mile, and alter course to pass midway between Pye Point and the S shore to the anchorage.

Approaching from the E, steer for Smoke Point, bearing 304° and in line with Pye Point, passing NE of the lighted bell buoy close E of Liscomb Shoal. When abreast Mackerel Shoal, steer for the church at Liscomb bearing 328°, seen over the shingle or open W of the trees on the W extremity of Hemloe Island; then proceed as previously directed.

3.39 Little Liscomb Harbor (45°01'N., 61°58'W.) is entered between **Redman Head** (45°01'N., 61°57'W.), a steep wooded bluff, 30.5m high, and Hog Island, about 0.7 mile W. The harbor area includes the area E, N, and W of Hemloe Island. The harbor affords fair anchorage for small vessels, and can also be entered from the S and W by vessels with local knowledge.

Depths—Limitations.—There is a government wharf at Liscomb on the W shore of the harbor, about 2 miles WNW of Redman Head. The wharf is L-shaped, 46m long, with an outer face 19m in length. Along both sides of the wharf is a least depth of 3.4m. Nine small white oil tanks stand close W of the wharf; a church with a steeple is conspicuous from seaward.

It has been reported (2013) the pier was available only to small craft and is closed to commercial shipping.

Aspect.—Shag Ledge lies from 0.25 to 0.8 mile E of Redman Head. A dark rock, 0.9m high, lies on the outer edge of the ledge. Robar Rock, with 0.6m, lies on the W end of Shag Ledge, about 0.3 mile ESE of Redman Head.

A shoal, with a depth of 3.7m, lies about 0.3 mile S of Redman Head. A bank, with a least depth of 5.8m, extends about 0.2 mile S from Redman Head. Foul ground extends nearly 0.2 mile E from Hog Island.

Indian Point lies nearly 0.5 mile NNW of Redman Head, and from it a bank, with less than 4.6m, extends about 0.2 mile S.

Anchorage.—There is good anchorage for small vessels, in 6.6 to 8m, mud, about 0.3 mile SSW of Indian Point.

Directions.—To enter Little Liscomb Harbor from the E, approach from the SW of the lighted bell buoy moored about 1.5 miles E of Crook Point, with Redman Head in line bearing 303° with the NE side of Hemloe Island. When abreast Robar Rock, alter course W to pass between the 3.7m shoal and the bank extending S of Redman Head. Then alter course NW to the anchorage, passing between Redman Head and the ledge, marked by a buoy, extending E from Hog Island.

Caution.—Without local knowledge, a vessel should not proceed farther than the anchorage without the services of a pilot.

An aquaculture facility is situated off Hemloe Island in an area 122m in radius from position 45°00'50"N, 61°59'11"W. Mariners are requested to avoid this area.

3.40 Gegogan Harbor (Jegogan Harbor) (45°02'N., 61°56'W.), little frequented, is entered between **Redman Head** (45°01'N., 61°57'W.) and **Burns Point** (Byrne Head) (45°02'N., 62°54'W.), about 2 miles ENE. Brig Point, on the W side of the harbor, about 1.3 miles N of Redman Head, is low and covered with trees.

Tobacco Island, 12.2m high and covered with trees, lies in the entrance to the harbor, about 0.8 mile SW of Burns Point. Tobacco Reef, 0.3m high, extends about 1 mile SSE from the island. A 7.3m patch lies about 0.3 mile SW of the extremity of Tobacco Reef.

Byrne Rock, with a depth of 4.9m, lies about 1 mile ESE of the S extremity of Tobacco Island.

Tobacco Ledge, which dries, extends about 0.4 mile NW of Tobacco Island.

A rock, with a depth of 3.7m, lies about 0.4 mile N of Brig Point. On the E side of the harbor, abreast this rock, a rocky ledge extends about 230m from the shore.

Anchorage.—There is good holding ground, in 7.3m, about 0.6 mile N of Brig Point; however, the anchorage is exposed to the ocean swell. Vessels drawing not more than 3.7m can find secure anchorage near the head of the harbor, but the channel leading to it is only about 91m wide and requires local knowledge.

Directions.—Gegogan Harbor should be entered between Tobacco Island and Shag Ledge. The approach should be made with Redman Head in line bearing 303° with the NE side of Hemloe Island. When the 0.9m rock on Shag Ledge comes in line with Brig Point, bearing 331°, alter course N to pass 0.25 mile E of Shag Ledge. Then a mid-channel course will lead to the anchorage.

The St. Marys River

3.41 The St. Marys River, one of the largest in Nova Scotia, is entered between **Cape St. Marys** (45°02'N., 61°51'W.) and Barachois Point, about 1.5 miles WSW. The entrance to the river is obstructed by a bar of sand, on which there is a depth of about 2.7m. The land N of Cape St. Marys rises to a height of over 50m.

Wedge Island (45°01'N., 61°53'W.), about 2 miles SSW of Cape St. Marys, is composed of clay. Its N side rises abruptly to an elevation of 15.2m The island is surrounded by reefs, those on the N and S sides extending out for nearly 0.5 mile.

Wedge Shoal, with a least depth of 6.4m, lies about 1.8 miles SE of Wedge Island.

Lighted bell buoys are moored 2 miles ESE and about 1 mile NE, respectively, of Wedge Island.

Steering Reef, 0.9m high, extends 0.5 mile SSE from the shore, at a point nearly 0.5 mile W of Barachois Point. A shoal, on which there is a least depth of 1.5m, extends from Steering Reef to the reefs N of Wedge Island. A visible wreck is situated on the W side of Steering Reef.

Black Head (45°03'N., 61°54'W.) lies over 1 mile NW of Barachois Point. The village of **Sonora** (45°04'N., 61°55'W.) (World Port Index No. 6220) lies on the E shore of the river, nearly 1 mile NNW of Black Point.

At Sonora, there is a wharf 46m in length and 12m wide, with a depth of 4m at the outer end. There is a breakwater close S of the wharf. Two wharves lie near the museum at Sherbrooke. The S one is in disrepair and the N one has a face 11m long with 0.6m alongside.

In the summer months, during the prevalence of SW winds, the bar of the St. Marys River is smooth, but after a continuance of S winds it becomes a mass of breakers and entrance is then dangerous, if not impracticable.

Above the bar, the river winds between mud flats and is only navigable by small craft. The channel is marked by buoys up to the village of Sherbrooke, about 7 miles upstream.

Mariners are cautioned that numerous uncharted cribs, some of which are submerged, are located outside the buoyed channel in the St. Marys River, N of 45°06'45"N.

Anchorage.—During the summer months, vessels may anchor between Barachois Point and Cape St. Marys, in 7.3 to 11m, sand, but this anchorage is not recommended at other times of the year. Anchorage in the river, where currents are reported to be strong, is not recommended.

Caution.—A rock, with a depth of 1.8m, lies about 0.2 mile NE of Black Head.

Shag Reef, parts of which are above-water, extends about 230m S from the E shore of the river. Its S extremity is about 0.4 mile NNE of Black Head.

Horse Shoal, which dries at LW, has its SE extremity about 0.3 mile N of Black Head and is marked by a lighted buoy.

Cape St. Marys to Cape Mocodome

3.42 **Indian Harbor** (Indian Bay) (45°05'N., 61°48'W.), entered between Walter Island and Fiddlers Head (Holland Head), about 3 miles ENE, is entirely open SE and only affords shelter to small craft from SW winds. The village of Port Hillford is situated on the E side of the head of the bay. There is a government wharf, which is L-shaped, 98m long, with an outer face 17m in length and a least depth of 3.4m alongside. The N face of the wharf is 18m long, with a least depth alongside of 1.8m. The approach is obstructed by a bar with a depth of 1.5m. There is also a small public pier on the W side of Barachois Cove.

Walter Island (45°04'N., 61°49'W.), 10m high, 2 miles NE of Cape St. Marys, is covered with trees and nearly connected to the mainland at LW by a ridge of sand and stones. A narrow sandy beach separates the head of the harbor from Indian Harbor Lake. The hill sides of the harbor and lake are extensively cultivated. The village of Port Hilford, where there is a white church with a spire and a pier, is situated at the NE head of the harbor. Little Hawbolt Shoal (Walter Shoal), with a depth of 5.5m, lies about 0.8 mile S of Walter Island.

Wine Head, a high clay bank, lies about 0.3 mile N of Walter Island. Rude Shoal, on which there is a rock 0.9m high, extends about 0.5 mile E from the shore, 0.25 mile N of Wine Head. A lighted bell buoy marks the E side of the shoal.

Fiddlers Head (Holland Head) (45°04'N., 61°45'W.) is a small but remarkable peninsula, attached to the mainland by a long beach of stones and shingle. It has a cliff, 11.6m high, composed of reddish clay and boulders, on its E side.

Bull Bank, 18.3m high, with a cliff on its S side, lies about 1 mile WNW of Fiddlers Head, and is connected to the mainland by a narrow sandy spit which dries. An 8.8m shoal lies about 0.7 mile SSW of Bull Bank.

Nixons Mate, formerly called Nixonmate Reef, with its outer end about 0.5 mile SW of Holland Head, is 1.5m high.

Nixons Mate Shoal (Nixon-mate Shoal), with a depth of 2.7m, lies on the extremity of a bank extending nearly 1.5 miles S of Holland Head. A patch, with a depth of 8.2m, lies about 0.5 mile S of Nixons Mate Shoal. A lighted whistle buoy is moored 1.1 miles S of Nixons Mate Shoal.

Fleck Shoal, with a depth of 5.8m, lies about 2.8 miles SSE of Fiddlers Head, and is the outermost danger off this part of the coast. A shoal, with a depth of 6.4m, lies about 0.4 mile N of Fleck Shoal.

Castor Rock, a small dark slate rock, 1.8m high, lies about 1.8 miles ESE of Fiddlers Head. Isaac Shoals (Castor Shoals), a group of rocky patches, with depths of 4.6 to 9.1m, lie within 1 mile radius of Castor Rock.

Holland Harbor (Hollins Bay), entered between Fiddlers Head and Bickerton Island, 30m high, about 2 miles NE, is open SE, but affords shelter to small craft at its head. Holland Shoal (Lower Bay Shoal), with a depth of 0.9m, lies in the entrance, about 0.8 mile SW of Bickerton Island. A shoal, with a

least depth of 2.4m, lies about 1.3 miles WSW of the same island.

Barachois Head (45°05'N., 61°42'W.), about 0.2 mile NE of Bickerton Island, is 16.8m high and may be identified by its white cliffs and lighthouse. Port Bickerton Light is shown from a white square tower on a square building on Barachois Head.

Gibbs Shoal, with a least depth of 10.1m, lies about 0.8 mile SE of Barachois Head.

Port Bickerton (45°06'N., 61°43'W.), entered between Bickerton Island and Barachois Head, is a safe and convenient little anchorage for small vessels. Range lights lead into the outer harbor. The village of Port Bickerton lies on the NE side of the harbor, and Mouton Harbour lies on the SW side.

A public pier is situated in front of Port Bickerton village; a radio mast (red lights, 31m high) stands on the pier head.

Port Bickerton Light

Port Bickerton Public Pier

3.43 **Cape Mocodome** (45°05'N., 61°39'W.), lying about 2 miles E of Barachois Head, terminates in a low shingle beach. The Calf, a rock previously known as Cape Rock, is 2.4m high and lies about 135m S of the beach. Bull Rock, about 0.4 mile SE of the cape, dries 0.6m, and lies on the bank extending nearly 0.5 mile E and SE from the cape. Bull Rock is exceedingly dangerous at HW, when with a smooth sea, the sea does not break. There is a depth of 9.1m about midway between Bull Rock and Rose Shoal.

Rose Shoal, with a least depth of 1.5m, lies about 1.3 miles SE of Cape Mocodome. A light bell buoy is moored about 230m SE of Rose Shoal.

Country Harbor Head (45°04'N., 61°39'W.), the W entrance point for County Harbor and Isaacs Harbor, about 2 miles N of Cape Mocodome, is a bold precipitous headland, 38.4m high, composed of clay slate in nearly vertical strata.

Cape Mocodome to New Harbour Head

3.44 Black Ledge, in the entrance to Fishermans Harbor, is 0.6m high in its central part, and several other parts dry. Stone Rock, with only 0.6m and steep-to, lies on the S extremity of the ledge. A 7.3m patch lies about 0.2 mile S of Stone Rock.

Fishermans Harbor (45°07'N., 61°40'W.), open SE, is entered between Cape Mocodome and County Harbor Head. The holding ground is good, and the sea is broken to some degree by the dangers in the approach to the harbor. During the summer, large vessels may safely anchor, in depths of 7.3 to 12.8m.

Bear Trap Head (Ragged Point) (45°10'N., 61°40'W.), lying about 2 miles NNW of County Harbor Head, is 23m high.

Caution.—A rock, with a least depth of 3m, lies about 0.2 mile offshore, about 1.3 miles NNW of Cape Mocodome.

County Harbor (45°12'N., 61°43'W.) and Isaacs Harbor, close E, are separated from each other by Bear Trap Head. Country Harbor is considered to be the finest natural harbor on the coast E of Halifax. The approach to the harbors lies between Cape Mocodome and **New Harbor Head** (45°09'N., 61°28'W.), about 9 miles ENE.

County Harbor is easily navigable as far as **Stewart Cove** (45°13'N., 61°44'W.), on the E shore, where the channel becomes narrow. Small vessels can proceed above Stewart Cove to the head of the harbor with local knowledge.

The shores on either side of the harbor are steep to, the summits of the ridges being generally only a short distance from the shore, and increasing in elevation from 61m at the entrance to about 143m near the head of the harbor.

Depths—Limitations.—Mersey Seafoods Ltd. Wharf has a length of 51m and a depth alongside of 6.1m.

Pilotage.—Pilotage is not compulsory. Vessels requesting pilotage should send their ETA at the pilot boarding position to the Atlantic Pilotage Authority 24 hours in advance, confirming or correcting 6 hours in advance. Pilots boards at position: 45°02'N., 61°33'W.

Mount Misery (45°11'N., 61°43'W.), about 4.5 miles NNW of County Harbor Head, is a remarkable round hill, 44m high, located on a projecting peninsula on the W side of the harbor.

The village of **Stormont** (45°13'N., 61°43'W.) (World Port Index No. 6190) lies at the N end of Stewart Cove. The tidal currents in Country Harbor are weak, seldom exceeding a velocity of 1 knot. A T-shaped wharf extends from the NW entrance point of Stewart Cove. The outer face of this wharf is 51m long, with about 6.1m of water alongside.

Excellent anchorage, in depths of 8.2 to 12.8m, mud, may be obtained off Stewart Cove.

Caution.—A cable ferry crosses County Harbor about 0.8 mile SE of Mount Misery. The cable is attached to a concrete wharf on each side of the harbor. A green light is shown from each wharf when the ferry is docked; the cable suspended to its maximum depth of 10.7m in the center of the channel. A red light is shown from each wharf when the ferry is underway and

the cable lies near the surface.

A submarine power cable is laid across the harbor close NW of the ferry.

3.45 Isaacs Harbor (45°11'N., 61°39'W.), entered between Bear Trap Head and Red Head, about 0.8 mile E, extends about 3 miles NNW. The channel between the shoals on either side is about 274m wide. The hills on either side, composed of drift clay and boulders, rise gradually to heights of 61 to 91m. The entrance channel should not be attempted without local knowledge.

Red Head is a small peninsula with red clay cliffs attached to the mainland by shingle beaches which enclose a shallow pond. Avondale Reef (Webb Reef), with a depth of 4m on its outer end, extends nearly 0.2 mile W from a point located 0.25 mile NW of Red Head.

Outside Sinker and Inside Sinker, previously known as Ragged Rocks, are covered at HW and extend about 0.2 mile S from the shore E of Ragged Point.

A wreck, with a depth of 10.1m, lies about 0.8 mile SSE of Red Head. A shoal, with a depth of 4.9m, lies 0.8 mile SE of the same point.

Holly Point, on the W side of the harbor, lies about 1 mile NE of Ragged Point. A light is shown from a 13m high white dwelling about 0.5 mile SSW of Holly Point. Squinces Ledge, lying about 0.3 mile NNW of Holly Point, is a rock that dries 1.8m.

Isaacs Harbor Village (45°10'N., 61°40'W.), lying about 0.5 mile NNW of Holly Point, has an L-shaped 51m long public wharf, with a least depth of 3.7m alongside a 15m long outer face. The public wharf at **Goldsboro** (45°11'N., 61°39'W.) (World Port Index No. 6170), on the E shore, has an L-shaped public wharf 46m long, with a depth of 4.9m alongside a 15m long outer face. Both wharves were reported in disrepair.

The tidal rise in Isaacs Harbor is 1.9m at MHWS and 1.6m at MHWN.

Isaacs Harbor affords secure anchorage, in 6 to 8m, mud, N of Sinclairs Ledge. Anchorage is prohibited in the vicinity of a submarine cable, laid across the harbor about 1.5 miles N of Bear Trap Head.

Webbs Cove affords good shelter to small craft, mud, but the bar adjoining Hurricane Island to the shore is reported to afford little protection from S gales.

Directions.—Entrance to Isaacs Harbor should not be made without local knowledge. Approach Isaacs Harbor by passing about 0.2 mile NE of Lighted Whistle Buoy TT, with Country Harbor Head bearing 320°, in line with Mount Misery. Steer on this range until abeam of Flying Point, the S extremity of Goose Island, then alter course N to bring Mount Misery in line bearing 313° with Harbor Point. Steer on this range until abeam of Country Harbor Head, then steer for Isaacs Harbor Light, bearing about 388°, passing between Ragged Rocks and Webb Rock buoys. Then steer a mid-channel course and anchor as convenient. Note that a wreck, with a depth of 10.1m, lies about 0.2 mile E of this track, 0.75 mile SSE of Red Head.

Vessels approaching Country Harbor follow the directions for Isaacs Harbor, but continue to steer with Mount Misery in line bearing 313° with Harbor Point until abreast of Ragged Point. Then steer a mid-channel course and anchor as convenient.

If proceeding to Stewart Cove, keep well over to the W shore to avoid the mussel beds that lie off the islet and the entrance points of the small coves on the E shore, S of Stewart Cove.

Caution.—A submarine gas pipeline extends NE from Thebaud Platform (43°53'N., 60°13'W.) to the coast at position 45°09'N, 61°38'W. Gas pipelines and wells contain natural gas under pressure and damage to these installations could create an immediate fire hazard. Mariners are cautioned not to anchor or trawl near pipelines or wellheads.

3.46 Dangers in the approach to Country Harbour and Isaacs Harbour.—Harbour Island (45°08'N., 61°36'W.) lies about 1.8 miles SE of Red Head. Finsley Shoal, with a depth of 4.1m, lies 0.5 mile W of Saladin Point, the SE extremity of Harbor Island. A 9.1m patch, which breaks in a heavy sea, lies about 0.2 mile S of Finsley Shoal.

Goose Island, 24m high and covered with small spruce trees, is the largest off this part of the coast and lies about 0.8 miles E of Saladin Point. A lighted buoy lies close SE of Saladin Point.

Country Island (45°06'N., 61°33'W.) lies about 1.3 miles E of the S extremity of Goose Island and is covered with small spruce trees. A light is shown from a square white tower, 14m high, with a dwelling attached, on the S side of the island. A lighted whistle buoy is moored about 3.8 miles S of Country Island. A depth of 9.1m was reported to lie 0.5 mile SE of Country Island.

South Easter (Middle Ledge), which dries 0.6m, lies about 3.8 miles SSW of Country Island. A lighted bell buoy is moored about 0.3 mile SE of the ledge.

Pollux Rock (45°03'N., 61°39'W.), about 2.3 miles S of Cape Mocodome, is a small slate rock, 1.5m high, which breaks in light seas. A shoal, with depths of less than 5.5m, extends about 0.4 mile NNW of Pollux Rock. Bingly Shoal, with a least depth of 4.6m, lies about 0.5 mile NE of Pollux Rock.

Taylor Shoal, about 1 mile ESE of Pollux Rock, has a least depth of 4.6m and breaks only in heavy seas. A lighted bell buoy is moored about 1.8 miles SSW of Taylor Shoal.

Tom Cod Shoals are a group of shoals S of Country Island. **Gull Nest** (45°05'N., 61°33'W.), the N of these shoals, with a least depth of 0.6m, lies about 0.9 mile S of Country Island. Tom Cod Rock, about 0.4 mile SSE of Gull Nest, dries 1.5m, usually breaks, and serves as a warning of approach to the shoals. A 3.2m patch and an 8.8m patch lie about 0.3 mile WSW and 0.4 mile S, respectively, of Tom Cod Rock.

Shoal Place, about 3.4 miles SSE of Country Island, has a least depth of 7.3m and breaks only in heavy seas.

Country Island Shoal, a pinnacle rock with a depth of 7.6m, which breaks in heavy weather, lies about 2.8 miles ESE of Country Island.

White Shoal (White Rock), with a depth of 2.7m, lies about 1 mile ENE of Country Island. Between White Shoal and Country Island, several patches exist, the S of which, with a depth of 3.7m, lies 0.65 mile E of the island.

Sunken Rock (Split Rock), with a depth of 0.9m, about 2.4 miles NE of Country Island, lies near the S end of a bank extending about 1.3 miles NW. A 6.6m shoal lies about 0.5 mile E of Sunken Rock. A lighted whistle buoy is moored W of Sunken Rock.

Brandy Ledge (45°07'N., 61°28'W.), the E danger, lies about 1.5 miles S of New Harbour Head. Near its center is a

rocky head, which dries 1.2m near its center. A lighted bell buoy is moored approximately 0.6 mile SE of the drying part.

The Sound

3.47 The Sound, the E approach to Isaacs Harbor and County Harbour, lies between the N ends of Goose Island and Harbour Island and the mainland N.

New Harbour Head (45°09'N., 61°28'W.) is a low rounded head of shingle rising to an elevation of 30.5m.

Coddles Island, about 2.5 miles W of New Harbour Head, is 18.3m high at its E end. Coddles Harbor Light is shown from Thrumcap Island, a small island about 0.2 mile NE of the E end of Coddles Island.

Worm Shoal, with a least depth of 3.3m, lies about 1 mile ESE of Thrumcap Island. A 4.6m patch and a 5.2m patch lie about 0.2 mile S and 0.3 mile W, respectively, of Worm Shoal.

Graham Shoal, with a least depth of 1.2m, lies on the N side of The Sound, about 0.5 mile NNE of the N extremity of Goose Island. Duck Shoal (Dutch Shoal), with a least depth of 2.3m, lies about 1.5 miles E of the N extremity of Goose Island.

Ragged Ledge, which dries 1.8m at its E end, extends about 1.3 miles E of Sheep Pen Point, the E extremity of Goose Island.

Burke Shoal, with a least depth of 2.3m, extends about 0.3 mile E from Burke Point, the NE extremity of Harbour Island. A 5.5m shoal lies about 320m NW of Burke Point.

Drum Head Harbor (Island Harbor) lies between Harbor Island and the mainland N. **Drum Head Island** (45°09'N., 61°36'W.), 1.5m high, the N entrance point of the W entrance, is joined to Drum Head, close N, at LW. A buoy marks the extremity of the shoal extending about 0.2 mile SW of Drum Head Island, and a buoy marks the shingle spit at the NW tip of Harbour Island.

A shallow harbor, enclosed by two breakwaters, is located E of Drum Head Island. The fishing village of Drum Head lies at the head of the harbor. The E breakwater-wharf, 131m in length, has depths of 1.5 to 3m at the berth on the N side.

Drum Head Light is shown from a skeleton mast on the outer end of the E breakwater. This light is maintained from May 1 to December 15.

Tides—Currents.—The flood current sets W; its velocity is usually less than 1 knot but is much influenced by the winds.

Anchorage.—There is anchorage N of a line joining Burke Point and the NW point of Harbour Island, in a depth of 12.8m, mud. Although open E, this anchorage is considered safe during the summer months; however, it is not suitable for large vessels, the deep water being confined to a narrow and crooked channel.

Directions.—From the E, small coasting vessels generally take the inner route, especially late in autumn, when N and NW winds prevail, passing between Brandy Ledge and New Harbour Head, and then through The Sound.

From the S, vessels should pass through the channel between Harbour Island and Goose Island, keeping midway between them, taking care to avoid the shoal bank extending S from **Saladin Point** (45°08'N., 61°36'W.) and Middle Ground, and the ledge W of Goose Island, which is always visible, on the E side.

Caution.—A submarine cable is laid from the vicinity of the E breakwater at Drum Head, W and S of Goose Island, to the NW side of Country Island.

New Harbour Head to Tor Bay

3.48 **New Harbour Cove** (45°10'N., 61°26'W.), entered between New Harbour Head and Eastern Head, about 1.8 miles ENE, is shallow, open SE, and affords no safe anchorage.

Shoal Point, about 1 mile NE of New Harbour Head, is the inner W entrance point to New Harbour Cove. A rocky spit, with depths of less than 5.5m, extends 0.5 mile ESE, and with depths of less than 9.1m over 1 mile SE of the point. A lighted whistle buoy is moored about 1.3 miles SE of Shoal Point.

A breakwater, 192m long, extends N from Black Point, situated about 0.4 mile N of Shoal Point. Inside the breakwater, a T-shaped public wharf extends 72m to an outer end 37m long. There are depths of 1.5 to 3.4m alongside the outer 48m of the wharf. Undertows are reported between the breakwater and wharf after storms.

New Harbour Cove Light, shown May to December, is exhibited on the breakwater head.

Tuffin Bank (45°08'N., 61°23'W.), about 2.5 miles SE of Eastern Head, has a least depth of 13.7m. The sea is reported to break on the bank occasionally after heavy gales.

Little Harbour, navigable by boats at HW, lies with its E entrance point about 2.3 miles ENE of Eastern Head.

Net Rock (Dead Cow Shoals), with a least depth of 3.4m, lies about 0.5 mile SE of E entrance point of Little Harbour.

Shag Rock, 1.5m high, lies about 0.5 mile offshore, and about 0.8 mile E of the E entrance point of Little Harbour. It is joined to the mainland by a ledge, on which are several rocks which dry. Shoal water extends about 0.4 mile SE from Shag Rock.

Tor Bay

3.49 Tor Bay lies between **Berry Head** (45°11'N., 61°19'W.) and Flying Point, about 5 miles E. The Sugar Islands, Hog Island, and several other islands protect the bay from the S. North of these islands the bay contains several anchorages suitable for small vessels. The shores of Tor Bay are 15.2 to 33.5m high, while a short distance inland, the barren granite hills rise to an elevation of 110m.

Berry Head is a low rocky point at the E extremity of a peninsula, which nowhere exceeds an elevation of 24.4m. The peninsula is connected to the mainland by a spit on which there is a range of sand hills. Gull Rock, with a least depth of 4.6m, lies nearly 1 mile SSW of Berry Head. Dry rocks extend about 0.3 mile S, and a shoal, with a depth of less than 5.5m, extends about 0.5 mile E of the SE point of Berry Head.

Tor Bay Light is shown from a square tower, 8m high, painted in red and white vertical stripes with a black roof, on the SE point of Berry Head.

Flying Point (45°13'N., 61°12'W.), the E entrance point of Tor Bay, is a detached islet connected to the mainland by a rocky ledge.

Flying Point Shoals, with a least depth of 2.7m, lie within 1 mile NW and SW of Flying Point. A lighted whistle buoy is moored on the SW side of Flying Point Shoals, about 1.3 miles WSW of Flying Point.

Hog Island (45°14'N., 61°13'W.), 12.2m high, lies about 1.8 miles NW of Flying Point. Hog Island Light is shown from a white circular tower, 9.1m high, with two red bands, on the SE

end of the island.

Numerous islands, including the Sugar Islands, none of which exceed 10.7m high, extend about 2.5 miles WSW of Hog Island. These islands, composed of clay slate, are surrounded by shoal water and detached rocks, especially to the S.

3.50 Tor Bay entrance.—The principal entrance into Tor Bay is between Berry Head and the Sugar Harbour Islands, with a least depth of 7.3m in the main channel. Spar buoys mark the entrance. A shoal, with a depth of 5.9m, lies about 0.8 mile ESE of Berry Head.

A lighted whistle buoy is moored nearly 1.8 miles ESE of Berry Head.

Topstone Ledge, which dries, lies W of the Sugar Harbour Islands, about 1.8 miles NE of Berry Head.

Tor Bay Ledges extend about 1.8 miles S of Topstone Ledge. French Rock, the S of these dangers, with a depth of 0.9m, lies 1.5 miles E of Berry Head. Bull Rock, with a depth of 0.3m, on which the sea usually breaks, lies about 0.4 mile NE of French Rock. Curry Breaker (Brig Rock), the N of the Tor Bay Ledges, with a depth of 1.5m, lies nearly 1.5 miles NE of Berry Head. A 1.5m patch and several 1.8m patches lie between French Rock and Curry Breaker. The SW side of these dangers is marked by buoys.

Between the Tor Bay Ledges and the Sugar Harbour Islands there are numerous dangerous shoals, with deep water between them, but with no safe passage.

Webber Shoal (45°13'N., 61°20'W.), with a depth of 2.1m, extends 0.5 mile offshore N of the Berry Head Peninsula.

Forster Island (45°14'N., 61°20'W.), low and fringed with reefs, lies close offshore, about 2.3 miles N of Flat Point. Charlos Reef, with a depth of 4.6m on its outer end, extends about 0.8 mile SE of Forster Island.

Larry's Reef, consisting of several rocks, two of which dry 1.5m, lies about 1.8 miles NW of Flat Point, the NE extremity of the Berry Head Peninsula.

Seal Rocks, which dry 1.2m and are surrounded by shoal water, lies about 0.7 mile N of Topstone Ledge.

Anchorage.—The best anchorage in Tor Bay is in 11 to 12.8m, mud, about 0.7 or 0.8 mile NE of Webber Cove. The latter cove is a small indentation on the N side of the isthmus joining the Berry Head Peninsula to the mainland. Vessels of suitable draft may anchor off the entrance to the river, in 4 to 6m.

3.51 The Larrys River, on the W side of Tor Bay, is sheltered by breakwaters. A government wharf on the W side of the river is F-shaped, and has an outer face 30m long with a least depth of 3m alongside.

Charlos Cove lies close N of Forster Island. A rock breakwater extends 200m from the N entrance point to the cove. Inside the breakwater, 0.15 mile NW, a public pier extends 47m from the N shore. The pier has an outer end 13m across with a depth of 1.8m alongside.

Cole Harbour, about 2 miles ENE of Charlos Cove, affords secure anchorage to small vessels. There are berths in the center and off the N shore of the NE part of the harbor.

The Sisters are three rocks, one of which dries 0.6m, on the W side of the entrance to the Cole Harbour.

Port Felix Harbour (Molasses Harbour) (45°15'N., 61°13'W.) lies in the NE corner of Tor Bay, from which it is separated by Boudreaus Island (Mattee Island) and the shoals surrounding it. The harbor affords a safe anchorage for small vessels with masters having local knowledge, in depths of 3.7 to 5.5m. The entrance to the harbor is a very narrow passage between Hog Island and the mainland.

Port Felix (45°15'N., 61°13'W.) is located at the head of Port Felix Harbour. The church spire in Port Felix, 33.5m high, is conspicuous from seaward. There is a wharf, 37m long, with a least depth of 2.4m at the head; the inner portion dries.

Whitehead Harbour to Dover Bay

3.52 Whitehead Harbour (Whitehaven Harbour) (45°14'N., 61°11'W.), close E of Tor Bay, is entered between **Three Top Island** (45°13'N., 61°10'W.) and Spry Point, on the mainland, about 0.3 mile NE. Three Top Island can be identified by three remarkable hillocks, about 12.2m high, from which its name is derived.

Three Top Island Light is shown from a skeleton tower, 8m high, on the SE point of the island.

Net Rock, 1.8m high, lies about 0.1 mile SE of Three Top Island, to which it is joined by a reef. Turtle Rock, about 0.1 mile S of Spry Point, is surrounded by rocks, which on its S side extend for a distance of about 0.1 mile. An unnamed rock, with a depth of 3.7m, lies about 0.2 mile W of Spry Point, and about 0.1 mile offshore.

Whitehead Harbour provides a safe anchorage, with sufficient depth and space for a considerable number of vessels, but like most indentations on this coast the entrance is narrow, tortuous, and obstructed by rocks. An L-shaped pier in Marshall Cove, outer part 53m in length has depths up to 3.7 alongside.

3.53 White Head Island (45°12'N., 61°08'W.), which is 36.6m high, with several off-lying islets and rocks, derives its name from the white granite from which it is composed. It is mostly covered with dwarf spruce trees.

White Head Island Light is shown from a white, square tower, 9.1m high, on the SW side of the island.

A lighted whistle buoy is moored about 2.5 miles S of White Head Island Light.

Deming Island, 9.1m high, lies nearly 1 mile W of Spry Point, and is joined to the mainland at LW. A prominent white spire is situated about 0.2 mile W of the point. A 4.9m shoal lies 0.15 mile E of the point.

The Gammon Islands, 12m high, about 0.2 mile W of White Head Island, are composed of bare granite.

Directions.—There are three passages into Whitehead Harbour between the islands and dangers in its approaches: Western Passage, the normal channel; and Southern Passage and Eastern Passage, which should only be used by masters of small vessels with local knowledge. Eastern Passage, intricate and dangerous, should only be attempted by vessels in case of necessity.

Caution.—Soundings give little or no warning in approaching any of the dangers in the entrance to Whitehead Harbour; a depth of 36.6m can be found 0.25 mile from several of the shoals. At night, or in the dense fogs that so frequently prevail, vessels should navigate with extreme caution.

3.54 Western Passage, about 0.4 mile wide, lies between

Three Top Island and the ledges extending S of Deming Island and the Gammon Islands, and the ledges SW of them.

Black Ledge, which dries 1.8m and on which the sea usually breaks, lies on the E side of the passage, about 1 mile W of White Head Island Light. Shag Ledge, above-water, lies about 0.2 mile NE of Black Ledge. A rock, with a depth of 4m, lies about 0.2 mile W of the largest of the Gammon Islands.

Bald Rock, 1.2m high, about 1 mile W of Shag Ledge, is the outer dry rock on the W side of the passage. Shoal water extends about 0.4 mile E from the rocks; a rock, with a depth of 3.7m, lies at the E extremity of the shoal. Outer Gull Ledge, 1.5m high, and Inner Gull Ledge, 1.8m high, lie on the bank connecting Bald Rock and Deming Island.

Southern Passage is about 0.1 mile wide between White Head and the Gammon Islands. Southwest Bull, the outer danger, about 0.5 mile SW of White Head Island, has a depth of 2.1m. It lies at the E end of a rocky shoal, and is marked about 0.2 mile SE by a lighted bell buoy. Between Southwest Bull and White Head Island are two rocky patches with depths of 7m and 3.7m.

Eastern Passage lies between White Head Island and the coast NE. Sculpin Rock, which dries 1.8m, and East Bull, a rock at a depth of 2.4m, lie about 0.2 mile and 0.4 mile SE, respectively, of White Head Island.

Middle Ground (Middle Rock), with a depth of 2.7m and marked SE by a spar buoy, lies mid-channel between White Head Island and Millstone Island, nearly 0.8 mile E. It narrows the channel E of it to less than 0.1 mile in width. A 3.7m rocky shoal lies about 0.3 mile SW of Millstone Island. Paddy Ledge, 3.7m high, lies about 0.1 mile N of Middle Rock. Mink Island, 7.6m high, lies about 330m NW of Paddy Ledge.

Tides—Currents.—The velocity of the tidal currents in the entrance seldom exceeds 0.5 knot, except in the case of the S current after heavy rain, or after the melting of the snow in the spring.

Aspect.—Deming Point (45°13'N., 61°11'W.) lies close N of Deming Island. A 5.5m shoal is charted about 0.2 mile E of Deming Point. A 2.1m shoal lies about 0.4 mile N of Deming Point.

Yankee Cove, entered about 0.5 mile NE of Deming Point, is a small inlet between Harbour Island and the mainland. A reef ends about 0.1 mile SW of Yankee Island, on the N side of the entrance to Yankee Cove.

Fisherman Island, 7.6m high, lies in the channel, 1 mile N of Deming Point. Kelp Shoal, with a least depth of 1.5m, lies in mid-channel, about 0.2 mile SW of Fisherman Island. The leading marks for this shoal are not easily identified. Large vessels proceeding to the head of the harbor should pass E of Fisherman Island.

Marshall Cove lies on the W side of the harbor, about 1 mile N of Deming Point. Foul ground extends about 320m off the S entrance point to the cove.

Two isolated rocks, with depths of 8.5 and 6.4m, lie 0.3 and 0.5 mile, respectively, N of Fisherman Island.

In Marshall Cove, the public wharf extends to an outer part, 53m long, with a depth of 3.7m on the S side and 3m along the N side.

Anchorage.—Good anchorage may be obtained in 7.3m, mud, in Marshall Cove; in 12.8 to 18.3m, mud, about 0.2 mile NW of Yankee Island; and off the fish stages and houses on the W shore, avoiding the rock with a depth of 2.1m, N of Deming Point.

3.55 The coast between **Millstone Island** (45°12'N., 61°07'W.) and Fluid Point, about 2 miles NE, is indented by Raspberry Cove East, Crane Cove, and Wine Cove. These coves afford shelter to small craft, but entrance should not be attempted without local knowledge, as several islands, islets, and numerous ledges and shoals lie off this stretch of coast.

Avery Shoal, with a least depth of 5.2m, lies about 0.8 mile E of Millstone Island. Shoal patches, with depths of 7.3 to 9.1m, lies scattered between Millstone Island and Avery Shoal. A detached shoal, with a depth of 3.6m, lies about 0.5 mile NE of Millstone Island.

Whale Island lies close offshore, about 0.5 mile SW of Fluid Point, and is surrounded by reefs and detached rocks.

Jacks Shoal (Vache Ledge), drying 1m, and Vache Shoals, with a least depth of 2.1m, lies about 0.3 mile and 0.6 mile S, respectively, of Whale Island. Whale Shoal, with a least depth of 5.2m, lies about 0.7 mile E of Whale Island, and Whale Rocks, which dry 0.6m, lie about 0.3 mile NW of the shoal.

Black Rock, 1.5m high, lies about 0.1 mile E of Fluid Point, to which it is almost joined by foul ground.

Dover Island (Taylor Island) (45°14'N., 61°03'W.) lies about 0.5 mile E of Fluid Point. Snorting Rocks, above-water, extend nearly 0.3 mile S from the S extremity of the island. Submerged rocks extend about 0.3 mile farther SW. Dover Shoals, with a least depth of 3.7m, extends about 0.8 mile SE from Snorting Rocks.

Port Howe (45°14'N., 61°05'W.) is entered between Fluid Point and Howe Point, the W extremity of Dover Island. The small harbor is difficult to enter due to the numerous shoals in the approach; however, it provides a safe anchorage for small craft only, on account of the limited swinging room, in depths of about 15m in the W cove of Port Howe and about 5.5m in the N arm of the harbor.

A spit, with a depth of 4.9m at its extremity, extends about 0.3 mile SW from Howe Point. Port Island, 10.6m high, lies in the middle of the harbor.

Dover Bay

3.56 Dover Bay (45°16'N., 60°59'W.) is entered between Dover Head, the E extremity of Dover Island, and White Point, about 2.5 miles ENE. Although extensive, the bay affords little shelter, being encumbered above Walsh Point (Bluff Point), about 2.5 miles NNE of Dover Head, and by islets and rocks, among which only masters of small vessels with local knowledge should pass.

Little Dover Island (White Island) (45°16'N., 60°59'W.) with the peninsula N of it, forms the E side of Dover Bay. **White Point** (45°15'N., 60°59'W.), the S extremity of a small island, 11m high, which lies close S of Little Dover Island, is so named from its more or less white appearance.

White Point Ledges extend about 0.7 mile S of White Point, and White Shoal (White Rock), with a depth of 4.6m on which the sea breaks in heavy gales, lies about 0.4 mile SE of the extremity of the ledges. A lighted whistle buoy is moored about 0.7 mile SSE of White Shoal.

Caution.—Blackman Shoal, with a least depth of 3.7m, lies

about 0.8 mile SE of Dover Head. Bay Shoal, with a depth of 9.1m, rock, lies about 1.3 miles ENE of Dover Head and breaks only after heavy gales.

Lumsden Shoal, with a least depth of 3.4m, lies about 0.7 mile W of White Point. An unnamed shoal, with a least depth of 6.7m, lies about 0.3 mile SSW of Lumsden Shoal.

Horne Shoal, with a least depth of 4.9m and marked SSW by a lighted bell buoy, lies nearly 1.3 miles WNW of White Point.

Dover Bay to Cape Canso

3.57 Thrumcap Island (45°15'N., 60°59'W.), 6.1m high, lies about 0.1 mile off the E extremity of Dover Island.

Gannet Shoal, with a least depth of 2.1m, lies about 0.5 mile ESE of Thrumcap Island, and consists of several detached rocky patches. A lighted bell buoy lies about 0.3 mile NE of Gannet Shoal.

A shoal, with a depth of 6m, lies about 0.2 mile NE of Gannet Shoal.

Andrew Island (45°18'N., 60°57'W.), about 2.5 miles NE of White Point, is low, boggy, and barren, with groves of stunted spruce. It is fringed with shoals, except on its W side, and is surrounded by rocky patches and foul ground.

Gannet Ledges extend about 0.8 mile SE of Gannet Point, the S extremity of Andrew Island. There is a depth of 0.3m at the outer end of the ledges.

Andrew Passage, the narrow and intricate channel W of Andrews Island, is marked by buoys at the N and S ends. The limiting chart depth of 2.7m is at the N end of the passage. Good visibility is recommended for the passage. It is frequented by small craft and affords a route to Glasgow Harbour and Canso Harbour. Several coves indent the W side of the channel.

Black Island, 7.6m high, about 0.3 mile SW of Gannet Point, lies in the S part of the passage.

Boom Rock, with a depth of 3.7m, lies about 1.5 miles E of Gannet Point.

Eastern Patch Rock (Patch Rock), with a depth of 8.2m, lies about 2.3 miles E of Gannet Rock. The sea is reported to break over this rock occasionally.

Cape Canso (45°18'N., 60°56'W.) and its off-lying dangers are described in paragraph 4.2 and paragraph 4.3.

Sable Island

3.58 Sable Island (43°56'N., 59°54'W.), about 90 miles SSE of Cape Canso, forms the dry summit of the extensive Sable Island Bank. The island and its shifting, sandy shoals have been the scene of the greatest number of shipwrecks in the North Atlantic during the past 150 years.

The island is formed of two nearly parallel ridges of sand, shaped by the wind into sandhills, which frequently change their positions. Many of the sandhills terminate in steep cliffs, while others are covered with grass and fronted by broad beaches. The highest sand dunes rise to about 24m.

The island is reported to be moving slowly E due to the action of the sea and wind, the sea encroaching on the W end, and the land extending to the E over the East Bar.

Wild ponies roam the island. They feed on the grass and other plants. There are several kinds of edible berries and many flowers and shrubs, but no trees. Water can be obtained almost anywhere by digging.

In recent years, gas and oil exploration has taken place on and in the vicinity of the island. Natural gas was discovered in a well drilled near the W end. No one is allowed to reside on the island without authority from the District Manager, Canadian Coast Guard, Dartmouth, Nova Scotia.

Tides—Currents.—The tidal rise at Sable Island is 2m at MHWS, and 1.8m at MHWN. The tidal currents are influenced by the wind. The ebb current sets S, on and over the bars, often at a velocity of 1.5 to 2 knots. The flood current sets N at a velocity of 0.5 knot less. The flow is influenced by the wind.

Aspect.—East Point (44°00'N., 59°43'W.), 11.3m high, is the E termination of the grassy sandhills of Sable Island. East Spit, dry in good weather, extends about 3.5 miles ENE of the point; a small grass-covered sand hillock, 2m high, lies on the spit, about 0.8 mile from the point.

West Point (43°57'N., 60°07'W.), 18.6m high, is the W termination of the grassy sand hills. A spit, dry in good weather, extends 3.5 miles W of the point.

Sable Island East Light (43°58'N., 59°47'W.) is shown from a white square tower, with a red vertical stripe on each side, 13.7m high, about 3 miles SW of East Point.

Sable Island West Light (43°56'N., 60°01'W.) is shown from a pyramidal skeleton tower with two rectangular daymarks facing N and S, situated about 2 miles E of West Point.

Main Station comprises several Quonset-type buildings and a house near the W end of the island. Four radio towers, with elevations of 29 to 61m high and red obstruction lights, stand near West End Light.

The W lighthouse, the most prominent radar target, is reported to give a clear response at 15 to 18 miles from all directions.

Depths—Limitations.—East Bar, with depths of 3.7 to 18.3m, on which the sea breaks heavily, extends at least 16 miles ENE of East Point. The N side of the bar is steep-to. In one place the depth increases from 3.7 to 64m in less than 0.5 mile.

Sable Island—Weather Characteristics

Weather Element	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sea Level Pressure (millibars)												
Mean	1013	1012	1012	1014	1016	1014	1016	1016	1018	1017	1015	1014
Temperature (°C)												
Mean	-0.2	-1.3	0.5	3.4	7.0	11.0	15.5	17.6	15.5	11.5	7.0	2.3

Sable Island—Weather Characteristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Mean daily maximum	2.7	1.4	3.0	5.8	9.5	13.7	18.2	20.3	18.2	14.1	9.6	5.2
Mean daily minimum	-3.2	-4.2	-2.1	0.9	4.4	8.2	12.7	14.8	12.7	8.8	4.4	-0.6
Extreme high	14.5	12.8	13.5	13.9	17.8	21.7	29.6	27.8	27.0	22.8	18.9	15.6
Extreme low	-19.4	-18.3	-13.3	-8.9	-8.3	1.7	4.4	4.4	0.6	-1.2	-7.8	-16.7
Relative Humidity (per cent)												
Mean	83	82	86	87	88	90	95	91	86	81	82	83
Cloud Cover (tenths)												
Mean	8.6	8.1	7.4	7.1	7.0	7.5	7.3	6.8	6.2	6.7	7.9	8.6
Precipitation (millimeters)												
Mean	148.4	112.2	113.3	100.6	99.6	107.7	100.6	111.3	104.7	121.0	141.5	124.9
Maximum in 24 hours	99.3	52.2	87.6	66.0	99.6	140.7	85.3	155.7	99.2	166.1	84.8	77.5
Mean amount of snow (cm)	37.3	30.0	24.1	8.0	0.8	0	0	0	0	0	4.0	18.3
Mean number of days with precipitation	18	17	16	13	12	12	10	11	10	13	15	18
Mean number of days with snow	10	9	7	2	<0.5	0	0	0	0	0	1	7
Wind Speed (knots)												
Mean	17.5	16.8	16.2	14.3	12.3	10.7	9.9	10.1	11.8	13.5	15.4	16.6
Wind Direction (percentage of observations)												
North	5	7	9	6	5	4	2	2	6	4	5	5
Northnortheast	3	3	5	4	4	2	1	2	4	3	3	4
Northeast	5	4	8	6	7	5	3	5	7	5	6	5
Eastnortheast	3	2	4	2	4	2	2	2	3	2	4	2
East	6	5	5	6	3	4	2	3	4	5	5	5
Eastsoutheast	2	3	3	3	2	3	3	3	3	3	2	3
Southeast	4	6	5	7	8	6	7	8	5	7	8	7
Southsoutheast	2	2	2	3	3	3	5	4	4	3	4	3
South	4	3	2	6	9	9	13	8	7	6	7	5
Southsouthwest	3	2	2	5	7	11	11	8	5	4	5	4
Southwest	7	7	7	11	15	24	27	22	14	9	8	6
Westsouthwest	5	6	6	7	8	9	7	11	9	9	4	5
West	14	15	12	11	10	8	8	12	11	14	11	14
Westnorthwest	11	11	9	6	4	3	3	3	4	7	9	11
Northwest	20	18	15	12	8	5	4	5	9	13	14	16
Northnorthwest	5	6	6	5	3	2	1	1	4	5	5	5

Sable Island—Weather Characteristics												
Weather Element	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Calm	1	<1	<1	<1	<1	<1	1	1	1	1	<1	<1
Wind Direction (mean speed in knots)												
North	14.5	15.0	15.6	13.3	11.8	8.5	6.9	9.5	11.9	12.1	13.5	13.9
Northnortheast	14.8	15.9	16.1	14.8	15.6	10.2	8.6	9.9	13.4	14.5	16.0	15.2
Northeast	16.7	14.3	17.2	14.9	12.2	9.0	10.4	10.2	12.5	12.9	16.2	17.1
Eastnortheast	19.5	17.2	16.9	13.1	12.4	11.6	11.0	12.4	11.6	15.0	15.7	13.8
East	17.5	13.6	17.0	16.1	12.5	12.5	9.5	10.0	10.2	11.1	13.5	14.2
Eastsoutheast	12.0	19.1	18.4	16.2	13.6	12.2	10.8	11.1	11.8	14.7	14.4	17.6
Southeast	17.9	18.1	15.6	14.3	13.5	11.1	9.6	9.8	10.5	14.3	15.3	16.8
Southsoutheast	17.6	15.5	13.0	12.3	12.2	11.4	10.9	10.2	11.4	13.5	18.2	16.2
South	16.8	14.2	13.4	12.9	11.5	10.5	10.2	9.6	12.0	12.3	15.2	14.2
Southsouthwest	15.8	14.7	13.6	13.6	12.6	11.5	10.4	9.6	12.2	12.2	13.4	14.7
Southwest	15.5	15.6	14.3	13.5	12.2	10.9	10.2	10.3	11.4	12.1	13.4	13.9
Westsouthwest	18.2	18.5	16.4	13.5	12.8	12.0	10.3	11.5	11.9	13.7	14.7	18.8
West	18.0	16.8	16.9	14.2	21.1	10.1	9.2	9.8	10.9	13.8	14.3	18.0
Westnorthwest	18.5	17.6	18.1	15.6	11.5	9.6	8.2	10.0	11.9	15.3	17.2	18.1
Northwest	18.8	18.3	16.5	14.5	12.6	9.1	7.8	9.3	12.9	14.9	17.0	18.1
Northnorthwest	17.8	17.9	16.2	14.9	12.8	9.0	7.9	10.3	13.5	14.8	17.5	16.8
Temperature and precipitation data courtesy of Environment Canada												

The N coast of Sable Island, from East Point to West Point, about 16 miles W, forms a featureless shallow bight. It is fronted in places by sandy ridges, with depths of less than 1m, running parallel to the coast and less than 0.4 mile offshore. The sea breaks heavily on these ridges in bad weather.

West Bar, with depths of less than 5.5m, extends about 22 miles WNW of West Point. Depths of less than 18.3m extend for about 5 miles farther W, and in this locality there are usually ripples and a heavy cross sea in bad weather. This bar is steep-to on its N side, depths of 28m being found just off the edge of the shoal.

The S coast of the island, like the N coast, is featureless.

Anchorage.—There is good anchorage, in depths of 15 to 20m, fine sand, off the N side of Sable Island, from 1 to 2 miles offshore, except near the E end of the island where it is too deep close to the shore.

The holding ground is good and the anchorage is safe with an offshore wind. If there is any indication of wind from seaward, vessels should weigh immediately because heavy seas are normally experienced.

The Labrador Current sets WSW north of the island while the Gulf Stream sets ENE south of the island; this creates eddies at both ends of the island. Floating debris is known to circle the island for long periods before washing ashore.

Vessels seldom anchor off the S side of the island on account of the prevailing swell.

Caution.—In approaching an anchorage off Sable Island from the N, vessels should sound constantly and exercise great caution.

The S side of the island may safely be approached by sounding constantly; however, there are no recommended landing beaches on the S side of the island.

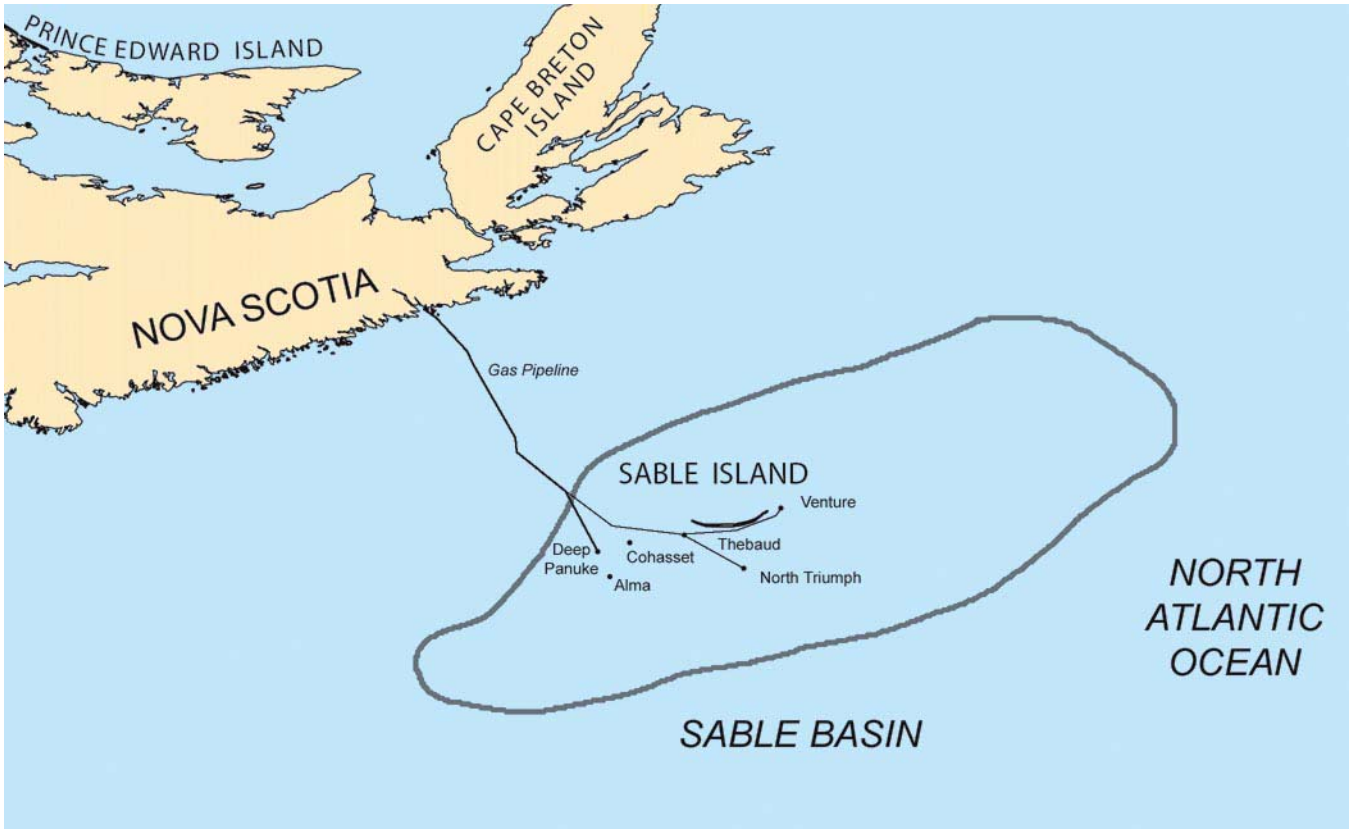
A stranded wreck lies about 7.5 miles ENE of Sable Island East Light. It is reported to give a radar echo at 8 to 10 miles. Mariners are cautioned not to mistake this echo for that of Sable Island East Light. The light tower gives a poor radar response, but several sand dunes close W of it offer a fair target.

A whale sanctuary, active year round, for Northern Bottlenose Whales, which are an endangered species, exists in The Gulley, E of Sable Island, within an area bounded by lines joining the following positions:

a. 44°13'N,59°06'W.
b. 43°47'N,58°35'W.
c. 43°35'N,58°35'W.
d. 43°35'N,59°08'W.
e. 43°55'N,59°08'W.
f. 44°06'N,59°20'W.

Mariners are advised to avoid passage through this area. If this is not possible, vessels should decrease speed, maintain a lookout, and maneuver around any marine mammal activity.

A lighted SPM lies about 30 miles WSW of Sable Island West Light. Lighted production platform s stand about 2 miles NW and 5 miles NE of the SPM. The production platforms are connected by a submerged pipeline; the westernmost platform



Sable Island Bank

is also connected to the SPM by a submerged pipeline. A prohibited anchorage area, best seen on the chart, surrounds the SPM and the production platforms.

Caution.—Safety Zones have been established for the protection of the production facilities, other vessels, and the marine environment. Unauthorized navigation within the Safety Zone is prohibited. Mariners are advised any vessel proposing to transit the Safety Zone must contact the operator on VHF channel 16 and, if approved, comply with the instructions given while transiting the area. Vessel movement in the area is monitored on a 24-hour basis.

An offshore platform is situated about 26 miles WSW of Sable Island with pipelines close in the area. A pipeline extends about 9 miles N of the offshore platform.

Nova Scotia Banks

3.59 The predominant feature of the sea bed off the SE coast of Nova Scotia is the extensive continental shelf with numerous banks separated by relative deeps or basins. The depths on the continental shelf may be very irregular, therefore, too much reliance should not be placed on a position assumed from soundings alone.

Nova Scotia Banks are bounded by the deep Laurentian Channel to the NE, and to the SW the Emerald Basin and La Have Basin form deeps on either side of the Sambro Bank. The E banks are separated from each other by depths of usually less than 183m, but the depth may be much greater in places.

Sub-surface current meters are laid from time to time in the offshore waters.

A group of four such meters, moored 400m below the surface with no markings, lie within 45 miles of position 42°50'N, 48°10'W.

The Gully, separating Banquereau Bank from Sable Island Bank, is 7 miles wide at its narrowest part and over 914m deep at its S extremity.

Banquereau Bank, the E bank, extends from about position 44°30'N, 57°15'W to 60°W, and has depths of 29 to 91m. The bank is composed of sand, gravel, and shells, and may be distinguished from contiguous banks by the numerous flat sea urchins without spines which are found on the bottom. Eastern Shoal forms the shallowest part of Banquereau Bank, with a least depth of 29m in position 44°42'N, 57°43'W. Eastern Shoal forms a sand ridge, with depths of less than 36.6m, about 30 miles long in a NE-SW direction and some 9 miles wide at its broadest point.

Artimon Bank, a relatively small bank, with a least depth of 60m, lies N of the E part of Banquereau Bank, and is composed of sand, gravel, and coral.

Misaine Bank, W of Artimon Bank and N of Banquereau Bank, has a least depth of 64m and general depths of over 73m. The bank is generally rocky with sand, gravel, and shells.

Between Misaine Bank and the bank off Cape Breton Island, is a deep gully some 25 miles wide, with depths of 82 to 300m.

West Point Light

Canso Bank, with a least depth of 60m and composed of sand, lies with its NW extremity about 14 miles SE of Cape Canso. Its E side is separated from Misaine Bank by a distance of about 17 miles. It is separated from the bank extending from Cape Canso by a relative deep at least 6 miles wide.

Middle Bank, composed of sand, gravel, and shells, with a least depth of 27.4m, lies S of Canso Bank, from which it is separated by depths of over 180m. Cape Canso lies about 30 miles NNW of this bank, from which it is separated by a submarine valley with a maximum depth of 264m. Because of its position, the soundings on this bank can be useful when approaching Halifax from the E.

3.60 The W part of Nova Scotia Banks, comprising La Have Bank, Roseway Bank, Baccaro Bank, and Browns Bank, is separated from the E banks by the deep La Have Basin. This basin is an extensive deep with depths greater than 183m and a maximum depth of 269m in position 43°43'N, 63°51'W, near the center of the basin.

La Have Bank, SSW of La Have Basin, has depths of 77 to 92m, and is composed of sand, gravel, shell, and rocks. The NW extremity of the bank lies about 62 miles E of Cape Sable.

Roseway Bank, a rocky bank with depths of 53 to 91m, lies midway between La Have Bank and the coast of Nova Scotia. A deep with depths of 92 to 183m lies between La Have and Roseway Banks. A narrow neck, with depths of 91 to 99m, connects Roseway Bank to the coastal bank NW.

Caution.—A whale sanctuary, active annually from July to November, for right whales, which are an endangered species, exists in Roseway Basin within an area bounded by lines joining the following positions:

a. 43°16'N,64°55'W.
b. 42°47'N,64°59'W.
c. 42°39'N,65°31'W.
d. 42°52'N,66°05'W.

Mariners are advised to avoid passage through this area. If this is not possible, then decrease speed, post lookouts, and maneuver around any marine mammal activity. Further information can be found in Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

3.61 Baccaro Bank lies S of Roseway Bank and WSW of La Have Bank, with its W extremity about 40 miles SE from Cape Sable. The bank has depths of 71 to 91m, and the seabed is sand, gravel, and rocks.

Browns Bank, WSW of Baccaro Bank, is an extensive bank at the W end of the Nova Scotia Banks. It includes a sandy rise with a least depth of 29.3m in position 42°49'N, 66°13'W, but in general the depths are much greater.

The 180m curve of Browns Bank is separated from the 200m curve of Georges Bank, off the coast of Massachusetts by the deep Fundian Channel, 15 to 30 miles wide. There is a maximum depth of 163m between Browns Bank and the coastal bank S of Nova Scotia.

Georges Bank, lying between 80 miles ESE and 120 miles E of Cape Cod, is an extensive bank which has depths of less than 90m; it is composed of sand, with shell and pebbles in places. Georges Shoal (41°40'N., 67°45'W.), with a least depth of 2.7m, is the shallowest part of the bank, is surrounded by irregular depths of less than 37m. The area is dangerous to navigation.

Sable Island Bank, with **Sable Island** (43°56'N., 59°55'W.) forming its dry summit, lies S of and adjacent to Middle Bank. The bank, composed of sand, gravel, shells, and rocks, extends 26 miles E from Sable Island to The Gully and about 90 miles W to Western Gully. There are depths of less than 30m at the N end of the bank.

Sambro Bank, W of Emerald Basin, has a least known depth of 90m, and consists of sand, gravel, shells, and rock.

Western Gully, with depths of 94 to 108m, is a deep separating the Western Bank of Sable Island Bank from Emerald Bank.

Emerald Basin, a deep with a maximum depth of 270m, lies NW of Emerald Bank. The NW extremity of this basin is about 40 miles SE from the port of Halifax.

Emerald Bank, composed of sand, gravel, and rocks, has a least depth of 68m.

Caution.—Extensive hydrocarbon exploration is conducted off the E coast of Canada. Mariners are cautioned that drilling rigs, supply vessels, or seismic survey vessels may be encountered underway or at anchorage. Information relating to traffic conditions of these vessels may be obtained on request from ECAREG Canada. For further information, see Pub. 140, Sail-

ing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas.

Specially designated areas for hydrocarbon exploration are situated off the coast on Sable Island Bar, as seen on the chart.

Platforms are situated in these areas, as follows:

1. North Triumph—Position 43°42'N, 59°51'W.
2. Alma—Position 44°36'N, 60°41'W.

Any offshore platforms located in these areas are surrounded by special safety zones, with a radius of 500m, centered on the platform. Passage through the special saftey zone may be permitted, but anchoring is prohibited. Fishing may be allowed with prior approval but only with the surveillance vessel standing by in the vicinity. A safety zone has been established from close N of Middle Bank to SW of Sable Island.

Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **4** — CHART INFORMATION

SECTOR 4

THE STRAIT OF CANSO—CAPE CANSO TO CAPE NORTH

Plan.—This sector describes the approaches and sea area of the Strait of Canso, including Chedabucto Bay and Isle Madame to the E, and St. George's Bay and the NW coast of Cape Breton Island to the N. The general arrangement is from S to N from Cape Canso to Cape North, via the strait and St. George's Bay.

General Remarks

4.1 The Strait of Canso separates Cape Breton Island from the mainland of Nova Scotia and is navigable by vessels wishing to proceed from the Atlantic Ocean to the S part of the Gulf of St. Lawrence. A stone causeway, carrying road and rail traffic, crosses the strait near its N end and because of tidal differences is fitted with a navigation lock which limits drafts to about 8.5m.

The S approach to the strait is through Chedabucto Bay and the N approach is through St. George's Bay. Due to an adjustment of chart datum in the areas S of Canso Causeway and E to a line between Guyon Island and Cape Canso, and to seaward of the St. Peters Canal, 0.4m must be added to all charted depths.

Winds—Weather.—The Strait of Canso and Chedabucto Bay are protected from the prevailing westerlies of winter and the SW winds of summer.

The NW coast of Cape Breton Island suffers from strong W gales which during winter send in a heavy breaking sea. In summer this coast is generally protected, with only SW breezes raising any sea.

Fog occurs with a frequency of 10 to 15 per cent in the months of May, June, and July. When Chedabucto Bay is fog bound, Canso Strait is nearly clear.

The incidence of fog in St. George's Bay and along the NW coast of Cape Breton Island runs slightly higher and may reach 25 per cent in the spring and summer months.

Ice.—Because of ice, navigation is suspended from about the beginning of January to the end of April in the N part of Canso Strait. As the causeway blocks the flow of ice from the N, navigation in the S part of the strait is possible during the greater part of the year.

The deep water terminal at **Wright Point** (45°35'N., 61°21'W.) remains open throughout the year and ice is usually not a problem.

Chedabucto Bay has pack ice from February to April, with drift ice occurring in May. Navigation is generally not affected with larger ships, but small vessels may have considerable difficulty in mid-winter.

Pack ice and heavy floes may occur along the NW coast of Cape Breton Island from January to April, with considerable amounts of drift ice in May.

The Ice Advisory and Shipping Support Service is provided from mid-December to the end of the ice season. Certain buoys in Chedabucto Bay and the Strait of Canso may be removed during the ice season.

Tides—Currents.—Off Chedabucto Bay there is a general SW drift throughout the year with a rate of 0.25 to 0.5 knot. Within the bay and in the Strait of Canso the currents are slight or non-existent.

An E current of about 1 knot sets down on the NW coast of Cape Breton Island and being a branch of the Gaspe Current, maintains its direction throughout the year.

Pilotage.—Pilotage for ports in this sector is obtained through the Atlantic Pilotage Authority. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further information.

Traffic Separation Scheme.—Traffic Separation Schemes are established for entering and leaving Chedabucto Bay, St. George's Bay, and the approaches to the Strait of Canso. The traffic routes are clearly defined on the appropriate charts and are compulsory in their use.

The seaward end of the Chedabucto Bay lane is marked by a racon fairway buoy and inbound vessels should pass to its N and those outbound should pass to the S.

Vessel Traffic Service.—The Strait of Canso and Eastern Approaches Vessel Traffic Services (VTS) Zone comprises all Canadian waters S of the Canso Canal North Lock Gate (45°39'N., 61°25'W.) and between a line bearing 181° from position 45°24.2'N, 60°29.73'W, then along the Territorial Sea Boundary in a SW direction to position 45°18.6'N, 60°35.1'W, then W to Cape Canso (45°18.2'N., 60°56.3'W.).

Participation is mandatory, as follows:

1. All vessels of 20m or more in length.
2. Vessels engaged in towing or pushing where the combined length of the ship and any vessel or object towed or pushed by the ship is 45m or more in length.
3. Vessels engaged in towing or pushing where the length of the vessel or object being towed or pushed by the ship is 20m or more in length.
4. Air cushion vehicles of 8m or more in length.

In accordance with the VTS Zone Regulations, vessels shall make reports:

a. 15 minutes prior to their estimated time of arrival at the E limit of the Zone;

b. 15 minutes prior to their estimated time of arrival at the N wall of the Canso Canal, and;

c. When passing the designated Calling-in-Points. The station identifier of the Canso VTS Center is "Canso Traffic" and can be contacted on VHF channel 14.

Vessel Traffic Service operations are conducted 24 hours.

Approaches to Chedabucto Bay

4.2 **Cape Canso** (45°18'N., 60°56'W.) is a rocky island about 4m high that is joined to the E end of Andrew Island at LW by a sandy neck. Reefs and rocks extend nearly 0.5 mile E of Cape Canso.

Canso Ledges, consisting of a number of shoals with deep water surrounding them, extend up to 4 miles NE of Cape Canso. Grime

Rock and Bass Shoal are the outermost of these dangers, and as they lie near the turning point for Chedabucto Bay, can be very dangerous to vessels proceeding off this coast in fog.

Grime Rock (45°21'N., 60°53'W.), with a depth of less than 1.8m, lies about 3.8 miles NE of Cape Canso. Shoals, with a least known depth of 5.5m, lie up to 0.5 mile farther E of the rock. A lighted whistle buoy lies about 1.5 miles E of the rock.

Bass Rock, which dries 0.3m, lies about 0.4 mile SSW of Grime Rock.

The **Cranberry Islands** (45°20'N., 60°56'W.), low, rocky, and divided into several parts at HW, are marked on their S side by a light, 15m high with a racon, shown from a white square tower.

A submerged power cable lies between the Cranberry Islands and Lanigan Beach, S of Piscatiqui Island. Its position can best be seen on the chart.

Caution.—When approaching Cape Canso from seaward, or when rounding the ledges for Chedabucto Bay, especially in thick weather, it is recommended that the racon buoy at the outer end of the separation zone be used for arrival and departure. The depths in the vicinity of Grime Shoal Buoy are irregular and large vessels should not attempt to use the inshore zone in this vicinity as the 36.6m curve is indistinct and lies close to some of the most dangerous ledges.

4.3 Canso Harbour (45°20'N., 61°00'W.), formed within the islands of Durell and Piscatiqui, is in general use by the Nova Scotia fishing fleet and is capable of handling ocean trawlers. Imports consist of oil, salt, and general cargo. Fish is exported. Canso Harbour can be entered from the north through Chedabucto Bay, or from the east passing north or SW of Cranberry Islands.

The town of Canso lies on the S side of the harbor. Canso has a rich history as a fishing port, and at one time, it was the location of the transatlantic communications cable link to Europe. The older part of the town is built on cliffs of red sand and the newer part is to the west. Ship stores and fuel are available.

Mean spring tides rise about 1.6m, while mean neap tide rise about 1.4m. The flood tide runs N, rarely exceeding 1 knot in the N entrance to Canso, and runs S on the ebb. The harbor is open all year, but thin ice sometimes forms during the month of February. The prevailing winds are from the SW.

Depths—Limitations.—A number of smaller wharves, with depth 3m alongside, are situated in the Tickle Channel, between Durell Island and the mainland. An area dredged to a depth of 4.9m extends about 0.5 mile off these wharves.

The Main Wharf is 57m long, with a depth of 5.8m.

Aspect.—The N approach to Canso Harbour leads between **Net Rocks** (45°21'N., 61°00'W.) and Bald Rock, about 0.5 mile ESE, and is marked at its seaward terminus by Canso Harbour Light. Two lights shown from skeleton towers on the W side of Hart Island, about 0.8 mile SE of Net Rocks, when in line bearing 170°, lead through the deeper part of the channel between Bald Rock and Bald Rock Light. A least depth of 11m can be maintained on this range and in the channel E of Hart Island, but the fairway is narrow and local knowledge is recommended.

The channel between Hart Island and Pascatiqui Island is less than 45m wide and vessels are recommended to have local knowledge.

Canso Rear Light

Lanigan Range Lights should not be opened to the E.

The E approach to Canso Harbour is marked by Lanigan Range Lights, in line bearing 266.5°, which lead in S of Grime Shoal Lighted Buoy and between White Rock and Sand Shoal, then between Frying Pan Shoal and Budget Rock, to Grassy Island Lighted Buoy, about 0.2 mile S of Grassy Island. The E entrance to the harbor has a least charted depth of 5.5m between the shoal water off Grave Island and the buoy marking the fairway.

The S approach to Canso Harbour lies between numerous islands and shoals, and should only be attempted in daylight during good weather and with local knowledge. Cape Breaker Lighted Buoy, moored about 1.5 miles E of Cape Canso, marks the outer approach to this channel; Canso Roman Catholic Church spire, bearing 299°, leads N of Cape Breaker, Keeper Reef, and Kirby Rock. The same bearing leads S of Black

Rocks, from where vessels steer NW through the fairway for Grassy Island Lighted Buoy.

Pilotage.— Pilotage is not compulsory, but if required, local fisherman will provide assistance.

Anchorage.—There is good anchorage available in Canso Harbour, in depths of 8 to 12m, but the swinging room is limited and the space is often crowded with fishing vessels.

Caution.—Great care is necessary in approaching Canso Harbour, especially in fog, as the 55m depth contour is only 0.2 mile outside some of the most dangerous ledges. There are several berths capable of accommodating oceangoing vessels. The public wharf fendering system has suffered considerable damage due to the use of the facility by vessels far in excess of its design capabilities. Vessels should be prepared to compensate for this deficiency.

Chedabucto Bay

4.4 Durrell Island (45°21'N., 61°01'W.), located about 4 miles NW of Cape Canso, lies on the S side of the entrance to Chedabucto Bay and is marked by Flag Hill, 26m high, on its NW side.

A tower, 77m high and marked by red obstruction lights, stands about 3 miles WSW of the middle of Durrell Island.

Fox Island, 2.25 miles W of Durrell Island, is 12m high and connected to the mainland by a bar of sand and rock which nearly dries.

Small vessels can anchor in Fox Bay, W of Fox Island, in 7.3 to 12.8m, sand, but the anchorage is insecure in N winds and E swells. Anchorage is also available in Half Island Cove, 4.5 miles W of Fox Island, but it is again insecure during NE winds.

Rook Island, marked by a light, lies 7.5 miles W of Fox Island and divides the entrance to Queensport into two channels. The W channel lies between the island and Corveau Rocks and has a least depth of 11m over a width of 0.3 mile. The E channel is narrow and more difficult. A breakwater on the NE side of the bay has a jetty about 43m long and 21m wide on its S side; there is a depth of 3m alongside the N face of the jetty and depths of 2.7 to 5.5m alongside the S and outer faces. The holding ground in the bay is good, but swinging room is limited.

Crow Cliffs, about 1.5 miles W of Rook Island, are three high cliffs of clay that mark the beginning of the coastal cliffs that extend along the S shore of Chedabucto Bay to the Salmon River, about 7 miles further W.

Bigby Head, a remarkable cliff, 33m high, lies at the head of Chedabucto Bay, about 8.5 miles W of Rook Island. Toby Cove, a small boat harbor with a depth of 1.2m in the entrance, lies close NW of the head.

An L-shaped pier, 21m long, on the S shore of the cove, has a depth of 4m alongside its head.

4.5 Guysborough Harbour (45°24'N., 61°30'W.), at the head of Chedabucto Bay, is an inlet which extends about 4 miles N to the mouth of the Guysborough River. The hills on either side are about 152m high.

There is deep water inside the entrance bar, but the channel is narrow and crooked, with strong tidal currents which often reaches a rate of 4 to 5 knots; a local pilot is strongly advised.

Queensport Light

At times the outer bar is impassable because to heavy breakers, particularly when E swells meet the ebb tidal current.

The entrance channel into the harbor is barely 90m wide between Peart Point and Stony Patch. The outer bar, with a depth of 5.5m, sand, extends just outside the entrance from Toby Point to Hadley Beach, and breaks in heavy weather. The inner bar, with a depth of about 5.1m, extends between Eliza Point and Hadley Beach with a channel width of only 91m.

Inside Guysborough Harbour, shoal water extends 0.2 mile E and NE of Byron Island (Little Island), the SW of two islands to the NE of Guysborough town. The SW side of Birch Island (Big Island) must be favored. The Guysborough Marina operates from the public wharf, which is situated 0.7 mile NW of Eliza Point. Several floating piers are attached to the face of the wharf, which is 53m long. There are depths of 2.7 to 5.2m in this area. A ramp is situated at the N end of the wharf. The marina monitors VHF channels 12 and 68. The marina is operated by the Guysborough Waterfront Development Society.

Mussel Cove, on the W side of the Guysborough Harbour, has depths of 3.7 to 11m. It is entered N of Lodge Point, which is noticeable by its clearing. Two white daymarks with red stripes, in line bearing 224.5°, lead into the cove. Mooring buoys are placed in Mussel Cove for small craft. A floating wharf has a depth of 2.4 m on the S side of the cove. North of Mussel Cove, the W side of Guysborough Harbour is encumbered by several fish farming operations.

4.6 Moose Bay (Clam Harbour Bay) (45°25'N., 61°25'E.) is entered between Moose Point, about 3 miles NE of the entrance to Guysborough Harbour, and Ragged Head, about 2.3 miles further E. The bay affords anchorage, in depths of about 9 to 13m, sand and mud, clear of the sand flat that extends

nearly 0.5 mile from the E shore of the bay. However, it is only safe during good summer weather. Gales from the E bring in a heavy swell.

Ragged Head is a rocky peninsula which appears to be an island from seaward. It is located at the apex of a triangle, the sides being long shingle beaches enclosing Ragged Pond, which has depths of 3.7 to 9.1m. Boats can enter at HW by a narrow channel on the W side of the point.

From Ragged Head, the coast trends NW for about 7.5 miles to Red Head and presents low cliffs of sand, clay, and boulders. The shore is backed by several salt ponds which can be entered by boats at HW if the surf permits. Murdoch Head, 30m high and lying nearly midway between the two above points, has a ledge extending nearly 0.8 mile E from it; shoal water lies up to 1 mile offshore in places.

Hydra Shoal (Big Shoal), with a depth of 3.7m, rock, lies about 1.3 miles SE of Murdoch Head and breaks in heavy E swells. There is a considerable area around this shoal, with depths of less than 9.1m. An isolated rocky pinnacle, with a depth of 16.8m, lies about 1.5 miles to the S.

Red Head (45°29'N., 61°14'W.), at the NE end of the mainland on the N side of Chedabucto Bay, is a small peninsula, 17m high, which terminates in a bare red cliff fronting the sea and is joined to the coast by a low shingle isthmus.

Argos Shoal, mostly rock with depths of less than 11m, extends 0.75 mile E from the shore close NE of Red Head and has a least depth of 0.6m. It breaks heavily with any swell from the SE and is marked on its outer edge by a buoy.

Cape Argos (45°29'N., 61°14'W.) lies about 0.3 mile NW of Red Head. A wreck, with a depth of 8.2m, lies about 0.9 mile E of Red Head.

Isle Madame

4.7 Isle Madame forms the N side of Chedabucto Bay and also the E side of the entrance to the Strait of Canso. Several smaller islands surround Isle Madame, and Lennox Passage, available to small vessels only, separates it from Cape Breton Island.

Green Island (45°29'N., 60°54'W.) is precipitous and composed of slate. It is separated from Petit-de-Grat Island by a passage about 0.8 mile wide, which is favored by small fishing vessels, the gear of which may foul the channel. A light is shown from a white circular tower, 11.5m high, located on the summit of the island.

Orpheus Rock lies, awash, nearly 2 miles E of Green Island and almost always breaks. Deep water surrounds it, but a rocky patch, with a depth of 9.8m, lies about 0.5 mile to the W. A buoy is moored 0.2 mile E of Orpheus Rock.

Petit Anse, a boat harbor, lies on the E side of Petit-de-Grat Island and is protected by a small breakwater with a depth of 2.1m at its outer end. The entrance channel is buoyed.

On the N side of the cove a causeway crosses Birch Island and the mainland. A public wharf, 47m long, with a depth of 0.6m at its outer end, is situated near the head of the cove.

A submarine power cable is laid between Petite Anse and Green Island.

Red Head (Cap Rouge), the SE extremity of Petit-de-Grat Island, is a conspicuous cliff, 21m high. Shoal water extends up to 0.25 mile off the headland.

Petit-de-Grat Inlet, separating Petit-de-Grat Island from Isle Madame, is a small fishing harbor with a narrow buoyed entrance channel leading between the many rocks and shoals within. Depths in the channel range from 7.6m abreast Mouse Island to 3m at the head of the harbor.

A low bridge, with a reported vertical clearance of 3.3m, crosses the inlet between the villages of Petit-de-Grat and Boudreauville. A dangerous rock with a depth of 2m or less has been reported (2009) about 250m SSE of Boudreauville.

The government wharf is L-shaped, about 91m long, with an outer face 32m long having a least depth of 2.1m. There are also several fishing wharves, with depths of 1.8 to 5.2m alongside.

4.8 **Cape Hogan** (Cape Auguet) (45°28'N., 61°01'W.), the S extremity of Isle Madame, is the termination of a bold headland with cliffs about 31m high. A light is exhibited from a triangular skeleton tower, about 0.3 mile E of the point.

Marache Point (45°29'N., 61°02'W.), lying about 1 mile NW of Cape Hogan, is the W end of Isle Madam and is bordered by shoal water to the N and S. A light is shown from the point.

Cerberus Rock (45°28'N., 61°06'W.), just awash and with deep water all around it, lies nearly 4 miles W of Cape Hogan Light. There are nearly always breakers or wash over this danger; vessels approaching or departing the Strait of Canso N of the fairway must take care to avoid it. A buoy lies about 0.3 mile S of the rock.

Caution.—The wreck of the tanker "Arrow," with masts visible, lies close E of Cerberus Rock. A second part of the ship, with a depth of 2.1m, lies sunk about 0.3 mile to the NNW.

4.9 **Arichat Harbour** (45°31'N., 61°01'W.) is a small fishing port approached between Marache Point and Crichton Island, about 2.5 miles NW. It is used by fishing vessels up to 70m in length. The harbor is protected by Jerseyman Island, which stretches across the bay and forms two entrances. The N entrance, known as Crid Passage, is only about 90m wide, but is straight and carries a least depth of 11m. The S entrance, although considerably wider, is encumbered with shoals of 6.4 to 10.1m and requires extensive local knowledge for any vessel of moderate draft.

The flood current enters through the S entrance and flows N and W through the harbor. The ebb current flows in the opposite direction. The velocity of the current seldom exceeds 1 knot. The tidal range is 1.8m at springs and 1.4m at neaps.

During late spring and summer, E winds are often associated with fog.

Cape Auguet Bay, in the S approach, although open to W winds and heavy swell at times, provides fairly good anchorage, in 18.3 to 21.9m, mud. Vessels approaching this bay by the S entrance to Arichat Harbour must take care to clear Hautfound Shoals off Marache Point, and Henley Ledges S of Jerseyman Island.

Vessels entering Arichat Harbour by Crid Passage can take anchorage, in depth of 18.3 to 21.9m, about 0.5 mile E of Beach Point Light, at the extremity of Jerseyman Island.

The public pier at Arichat is “L-shaped” and extends from the N shore It is 37m long, with a depth of 4.9m. There are numerous smaller wharves in the harbor, but they are in poor re-

pair.

The public pier at Arichat is "L-shaped" about 0.6 mile E of the two prominent red-topped towers of a church. It is 850m in length on the west side, and the East side is 37m long, with an alongside depth of 4.9m.There are numerous smaller wharves in the harbor, but they are in poor repair.

Pilotage.— Pilotage is not compulsory.

Anchorage.—Cape Auguet Bay, 1 mile NE of Marache Point, offers good anchorage in depths of 18 to 22m, mud. The best position is in the deepest water, clear of the 7m rocky patch located 0.5 mile SSW of Kaavanagh Point, the N entrance to the bay. There is a heavy southerly swell in this anchorage at times. Good anchorage is available in Arichat Harbour in depths of 18 to 22m, approximately 0.5 mile E of Beach Point.

4.10 Crichton Island (45°30'N., 61°06'W.), about 1 mile NW of Jerseyman Island, is connected to Isle Madame by a causeway which along with the island forms the inner part of the small harbor of West Arichat. Picard Reef extends from the S point of Crichton Island and shoal water also borders the W side of the island, terminating in Crichton Shoal, with a least depth of 2.4m.

West Arichat Harbour, on the N side of Crichton Island, is a small but secure harbor used by coasters. The approach is from the SW over a bar with a depth of 3 to 4.6m. The entrance channel and harbor are buoyed.

An public L-shaped pier, 43m long, with a berth 15m long and a depth of 1.5m at the pier head, projects S from Bodset Point on the N side of the inner harbor. A light is exhibited on the pier head.

A light is exhibited from a skeleton tower on Crichton Head, the NW point of Crichton Island. Another light is shown from a red skeleton tower on Arichat Head, about 0.8 mile S of Crichton Head. Both lights are shown from May 1 to December 15.

Janvrin Island (45°32'N., 61°10'W.) is fringed with shoals and rocks on the S and W sides. The E end of the island is connected to Isle Madame by a string of islets, some of which are bridged by causeways for road travel.

Peninsula Point, the S extremity of the island, appears as an island from seaward, with low red cliffs on its SW side. A long shingle bar unites the point with Janvrin Island. Peninsula Shoals, an extensive rocky area with depths of less than 0.9m in places, extends up to 1 mile SE of the point.

Wasting Rocks, which dry from 0.9 to 2.1m, lie on a large drying bank of sand and stone which extends SE from Janvrin Point, the SW extremity of Janvrin Island. Janvrin Shoals, with a depth of 2.1m at their outer end, are the extension of shoal water which lies up to 0.6 mile W of Janvrin Point. These dangers closely border the NE limit of the buoyed ship channel leading to the Strait of Canso.

Thomas Head, the NW extremity of Janvrin Island, is fringed by reef and rocks. Thomas Shoal, with a depth of 4.3m at its outer end, extends about 0.5 mile WSW of the point and is marked within its extremity by a buoy.

Macdonald Shoals, with a least depth of 0.3m, extends in a dog leg from the shore about 0.5 mile ENE of Thomas Head. It is marked at its outer end by a buoy moored about 0.5 mile N of the headland.

Janvrin Harbour, available only to boats, lies on the SE side of Janvrin Island with Delorier Island lying across the entrance. Dorey Ledge, extending E from the island to Dorey Point, a distance of about 1.3 miles, bars the outer approach but has a buoyed channel with a depth of about 3.6m leading to Deep Cove. The inner bar, N of Delorier Island, is also buoyed but is narrow and shoal.

A public wharf extends 47m from the N shore.

4.11 Inhabitants Bay (45°34'N., 61°15'W.), entered between Turbalton Head, the W end of Rabbit Island, and Flat Head, about 2 miles to the W, affords sheltered anchorage in its entrance and in Seacoal Bay, at the NW end of the bay. The high cliffs of Carleton Head (Caribou Head), the N point of the cove, are conspicuous and form a good mark in the approach.

Anchorage.—Several designated anchorages are situated in the approach to and within Inhabitants Bay. Depths range from 8.7 to 21.9m, mud bottom, but caution is necessary as the bottom is rock in some places.

Anchorage is also available in Seacoal Bay, in depths of 5 to 9m, mud. Small vessels can anchor in Turbalton Bay, within the W end of Rabbit Island, where there is limited but secure anchorage, in a depth of 9.1m, mud.

Inhabitants Harbor, to the NE of Inhabitants Bay, is approached through a buoyed channel between Evans Island and Freeman Island to the S and Indian Point to the N. This harbor provides good anchorage to small vessels, in depths of 5.5 to 9.1m, mud, but local knowledge is recommended. The Inhabitants River can be navigated by small craft to the bridge at Chapel Road.

Approach to Lennox Passage

4.12 Lennox Passage, leading between Isle Madame and Cape Breton Island, provides a light draft channel connecting St. Peters Bay, at the NE end, with the S end of the Strait of Canso. A considerable part of the buoyed channel is so narrow and crooked that the passage is seldom used by vessels of any size. The least depth in the fairway is 4.9m, but vessels exceeding 3.7m in draft should not attempt the passage. The tidal currents are erratic and local knowledge is desirable even in small vessels. The rates are greatest round the spit off **Grandique Point** (45°36'N., 61°01'W.), seldom exceeding 2 knots, and at the bascule bridge, where the rates are about 2.5 to 3 knots. The flood tidal stream sets W and reaches its maximum rate about 1 hour after HW Point Tupper. The ebb stream sets E, the maximum rate about 1 hour 15 minutes after LW at Point Tupper. Slack water occurs about 1 hour 15 minutes before HW and LW at Point Tupper.

Caution.—A bascule bridge crosses Lennox Passage at Burnt Point. The width of navigable span is 18.3m. The vertical clearance of the bridge when closed is 6.4m. A depth of 4.6m is located in the channel under the bridge.

The bascule bridge, which is hinged on the N side, provides a vertical clearance of about 31m beneath the outer end when open.

Traffic lights and white lights are shown from each side of the bridge; vessels should not approach the bridge unless a green light is showing. The use of an engine is recommended because of the currents.

The bridge is operated from mid-May to mid-October, beginning each day at 0830; closing times are consistent with

those at St. Peters Canal.

4.13 Michaud Point (45°34'N., 60°41'W.) is a wooded peninsula about 12m high which is joined to the mainland by a sandy beach. Small vessels occasionally seek shelter in Michaud Cove on the N side of the point, but although the holding ground is good, access is restricted and anchorage is unsafe during E and SE winds.

Michaud Ledges extend 1 mile offshore between Michaud Point and Red Point. These ledges dry in places and are usually marked by breakers. A lighted whistle buoy is moored 1.75 miles SSE of Red Point.

Between Red Point and St. Peters Island, about 3 miles WNW, is a shallow bay with several coves. A fishing village extends along the shore of this bay for about 4 miles. At Martin Point, about 1 mile N of Red Point, there is a breakwater with a length of 498m.

St. Peters Island, connected to the mainland by a narrow drying spit, has a cove on the N side which affords anchorage to small craft. Haddock Rock, which dries 0.3m, lies about 0.3 mile off the NW side of the island.

Horsehead Shoals, Three Rocks, and Samson Rocks, all surrounded by shoal water, lie on the N side of the channel from 2 to 3 miles W of St. Peters Island. Buoys mark the SW side.

4.14 St. Peters Bay (45°38'N., 60°53'W.), entered between Mark Point (Pointe Brulee) on the E side, and Double Head, about 1.8 miles to the W, provides sheltered anchorage to coasters and small ocean-going vessels. It also forms the S approach to St. Peters Inlet, paragraph 5.50, and St. Peters Canal, paragraph 5.52.

A buoyed channel, with a least depth of 5.5m, leads into St. Peters Bay. The channel within the bay in the approach to St. Peters Canal is deep and also buoyed.

A light is shown from a white tower on Jerome Point, on the E side near the head of St. Peters Bay. This light operates from May 1 to December 15. Four white storage tanks are situated on the shore close W of the entrance to St. Peters Canal.

Grande Greve Harbour, on the SE side of St. Peters Bay, provides sheltered anchorage, in a depth of about 9.1m, mud, about 0.2 mile NW of the point in the middle of the head of the bay.

Brick Point (Brickery Point) and Sutherland Head, both on the W side of St. Peters Bay, can be identified by the cliffs of red clay in this vicinity. The River Tillard, entered between Brick Point and Tillard Point, is available only to boats.

Lennox Passage

4.15 Cap Ronde (45°35'N., 60°53'W.) is the S entrance point of Lennox Passage and also the NE extremity of Isle Madame. It is formed of a red cliff about 19m high and bordered by shoal water extending about 0.4 mile E and along the coast to the S. The point appears as an island, but is connected to Isle Madame by a low rocky beach.

Petit Nez Shoal, a large rocky shoal area with a least depth of 5.5m, extends up to 2 miles E of Beak Point (Petit Nez), a rocky point of land about 1.3 miles S of Cap Ronde. The more irregular parts of this shoal break in heavy weather. A lighted whistle buoy lies on the E side of Petit Nez Shoal.

The Bay of Rocks, entered SE of Beak Point, is entirely open to the E and affords no safe anchorage.

Gabion Shoal, the N extremity of which lies about 2 miles NW of Cap Ronde, has a least depth of 0.9m at Morris Rock on its W end.

The Goulet, a shallow bay, is entered E or W of Gabion Shoal and provides anchorage for small vessels. An L-shaped pier, with a berth 47m long on its outer face and a depth of 2.9m alongside, is situated at Poirierville, at the head of the bay.

Ouetique Island, about 3.5 miles NW of Cap Ronde, is precipitous, dark, and about 14m high. Philip Rocks, NE of the island, are awash at HW. A light, shown from April 1 to December 15, is shown from a skeleton tower situated on the S point of the island.

Cascarette Island, 0.5 mile W of Ouetique Island, is 27m high and wooded, with low cliffs at the E end and a sandy point at the S extremity. A rock, about 0.6m high, lies on a reef between Cascarette Island and Ouetique Island.

Bourgeois Inlet, used extensively by fishing vessels, is approached between Philip Rocks and Bisset Island and then through a narrow entrance having a least depth of 2.1m. There is a conspicuous spire in the town of River Bourgeois and the E side of the entrance is marked by a light exhibited from April 1 to December 15.

Although buoyed, the entrance is complicated by strong tidal currents, with the greater rate on the flood tide.

A public wharf, with a berth 12m long and a depth of 3m alongside, is situated on the E bank of the River Bourgeois, close within the entrance. The wharf is 20m long with a maximum depth of 4.3m; the outer end of the wharf is difficult to secure to at HW. There are several wharves in Bourgeois Inlet with depths of 1.5 to 2.7m alongside.

D'Escousse Harbor, entered about 0.8 mile SSE of Ouetique Island and close E of Bernard Island, is used mostly by fishing vessels. A buoyed channel, with a depth of about 2.1m, leads to the harbor where there is anchorage, in depths of 3.7 to 4.6m. A government wharf, with depths of 2.4 to 4m alongside, lies in the S part of the harbor. The pier is used by yachts and fishing vessels; numerous mooring buoys are placed off the wharf.

Poulamon Bay, on the S side of Lennox Passage just E of Grandique Point, has three entrances formed by Eagle Island and Crow Island. Poulamon Islet, low and wooded, lies 0.2 mile S of Eagle Island. The best anchorage is in the E part of the bay and is frequently used by fishing vessels. The anchorage is restricted by a bar with a depth of 4m, lying in the middle of the channel. There is also safe anchorage for moderate-sized vessels, in 9 to 13m, in the roadstead outside the bay. A light is shown from a skeleton tower with a red and white banded daymark on Hawk Island, an islet close N of Eagle Island joined to it by a spit.

4.16 Grandique Point (45°36'N., 61°01'W.), marked by a light, restricts the channel between it and Birch Island to a width of about 0.2 mile and is further restricted by Birch Shoal which lies nearly in mid-channel. As the fairway here is crooked and narrow, navigation is difficult and local knowledge is recommended.

To the W of Grandique Point the channel is marked by buoys. Ferry Reef, with a depth of 0.9m, lies about 0.3 mile W

of Grandique Point and is marked on its S side by a buoy.

Two submarine cable areas are close W of Grandique Point. Cable signs reading "Cable Do Not Anchor" are positioned on the shore at each end of each cable crossing.

Tides—Currents.—The tidal currents in Lennox Passage turn about 45 minutes after both HW and LW on the shore, but they are often irregular. The flood tidal current sets to the W and the ebb tidal current to the E. The greatest rate is estimated to reach 2.5 to 3 knots in the vicinity of the bascule bridge at Burnt Point.

Caution.—The navigation of Lennox Passage is very intricate and local knowledge is necessary.

The Strait of Canso

4.17 The Strait of Canso, which separates the mainland of Nova Scotia from Cape Breton Island, forms an important passage between the Gulf of St. Lawrence and Atlantic coast ports W of Canso. In addition, a deep-water oil terminal has been developed in the strait, near Port Hawkesbury, capable of accommodating large tankers.

The length of the passage through the strait, between Eddy Point and North Canso Light, is 15 miles. The least width of the strait is 0.45 mile near **Cape Porcupine** (45°38'N., 67°25'W.). A causeway, with a navigation lock at the E end, crosses the strait at Port Hastings. The navigable channel in the strait is buoyed throughout its length. The channel is deep, with less than 27.4m in a few places only. Ships should remain within the limits of the buoyed channel, as there are several rocks and shoals extending offshore in places, although both sides of the strait are generally bold.

Aspect.—The land on the W side of the strait rises abruptly to high ridges, exceeding 183m at Cape Porcupine, near the causeway. The E shore is not as high, except at the N end of the strait.

Range lights mark the length of the buoyed channel from Durrell Island to Peebles Point. Nearly all ranges are on reciprocal bearings and consist of lights mounted on triangular skeleton towers with fluorescent trapezoidal daymarks, usually red or white.

Pilotage.—Pilotage is compulsory in the Strait of Canso area within a line drawn from Cape Jack to Low Point in St. George's Bay, and a line drawn from Fox Island to Green Island in Chedabucto Bay. Pilotage must be requested from the Atlantic Pilotage Authority at least 12 hours prior to the vessel's ETA at the pilot boarding station. The vessel's ETA must be confirmed or corrected 6 hours prior to the new ETA. The time used must be GMT.

The positions of the pilot boarding stations for the Strait of Canso are, as follows:

1. Northern approach (all vessels)—45°41.7'N, 61°28.3'W.
2. Southern approach:
   a. Vessels over 223m in length—45°24'N, 61°01'W.
   b. Vessels under 223m in length—45°29.5'N, 61°11.1'W.

The pilot boats are equipped with VHF radio; they guard VHF channel 17 at the N boarding position, and VHF channels 11 and 17 at the S boarding stations. During the period from December 11 to April 15, the S boarding station is also the pilot boarding station for vessels bound for the Miramichi River.

Canso Strait (near Point Tupper)

The master of a ship that is to depart or make a move within the compulsory pilotage area must report to Pilots Cape Breton 4 hours prior to such ETD. The time used should be local time. If GMT is used, it must be expressly stated.

Anchorage.—Due to the depth of water and the nature of the bottom (rock and gravel), anchoring in the strait is generally unsafe, except in certain places.

Caution.—Vessels should remain in the designated approach channel in Chedabucto Bay, within the limits of the channel buoys. The previously-described dangers, particularly Cerberus Rock, described in paragraph 4.8, and other off-lying rocks and shoals, must be passed with care, especially in poor visibility.

4.18 **Eddy Point** (45°31'N., 61°15'W.) consists of two low sand and gravel strips enclosing a small pond. Eddy Spit, of sand and stone, extends about 0.2 mile NE of the point and has only 0.3m. Eddy Point Light is shown from a white square tower with a house close by.

A tower, with an elevation of 87m and marked by red obstruction lights, is situated about 0.5 mile SW of Eddy Point. Several working lights are situated at the base of the tower.

A breakwater situated 0.6 mile W of Eddy Point protects an L-shaped pier. The useful part of the pier head is 18m long, with a depth of 4.9m on the outside face and 4m on the inside face. The outer end of the breakwater is reported to cover at HW.

Bear Head (45°33'N., 61°17'W.), about 2.3 miles NW of Eddy Point, is the NE entrance point to the Strait of Canso. Bear Island is connected to Bear Head by a shingle spit; Bear Reef, with a rock, awash, extends close S of the island. A light is shown from a tower, with a red and white banded rectangular daymark, on Bear Head.

Ship Point (45°34'N., 61°20'W.) lies about 2 miles NW of Bear Head. Ship Rock, with a depth of less than 1.8m, lies on the edge of the channel about 0.2 mile NW of Ship Point.

Port Hawkesbury (45°37'N., 61°22'W.)

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4.19 Port Hawkesbury is situated on the N side of the Strait of Canso and, although only a small harbor in itself, is the marshaling area for the deep-water facilities between Point Tupper at the port entrance, and Wright Point about 2 miles to the SE.

Winds—Weather.—Prevailing winds are from the NW in winter and the SE in summer. Wind velocities exceed force 6 occasionally, mainly from the NW sectors.

Fog is frequent and persistent in the summer months. The sea effect is intensified and the fog is thicker in flows of warm moist air from the SE. The strait may at times be free of fog when Chedabucto Bay is heavily set in.

Ice.—The port is generally ice free for the greater part of the year as the causeway N blocks the ice coming down from the Gulf of Saint Lawrence.

Tides—Currents.—Mean spring tides rise 2.4m; mean neaps tides rise 2m. There is practically no current in the Strait of Canso due to the effect of the causeway.

Depths—Limitations.—The least charted depth on the range lines in the approach to the port is 27.4m.

The Nustar Terminal at Wright Point is situated 0.75 mile NW of Ship Point.

The Nova Scotia Pulp Company Wharf is situated at Madden Point, about 0.8 mile NW of Peebles Point.

The gypsum wharf at Point Tupper, about 0.8 mile NW of Madden Point, consists of seven concrete piers connected by a catwalk.

The government wharf at Port Hawkesbury has an L-shaped head,. Caution is necessary in the approach as Premier Shoal, situated in the entrance to Ship Harbour and marked close N by a lighted buoy, has a depth of 4m on its outer part. For berthing information see the table titled **Port Hawkesbury—Berthing Information**.

Port Mulgrave consists of a government dock, divided into 3 sections and is located on the W side of the strait opposite Port Hawkesbury.

Aspect.—The highest and most conspicuous object in the port area, in addition to the 183m high hills on the S shore, is the cooling tower of the power plant, painted red and white and marked by obstruction lights, about 0.5 mile E of Peebles Point. There are also two prominent red and white chimneys at the power plant.

About 2 miles W of Madden Point, there are two towers close together. The N tower is a microwave; the other is a television tower at an elevation of 310m.

The two chimneys at the Gulf Oil refinery, the highest at 107m and the other at 106m, both standing about 0.4 mile NE of Wright Point, are conspicuous. The flame tower, 62m high, is not particularly conspicuous from seaward.

Pilotage.—Pilotage is compulsory. Information on pilots is contained in this sector under the heading "The Strait of Canso" in paragraph 4.17.

Port Hawkesbury—Contact Information	
Port Authority	
Telephone	1-902-747-2410
Facsimile	1-902-747-2453
Web site	http://www.straitsuperport.com
Harbormaster	
Telephone	1-902-625-2508
Facsimile	1-902-625-1819
Port Hawkesbury	
Telephone	1-902-426-7132
	1-902-747-3143
Facsimile	1-902-426-3904
	1-902-747-2860
Port Mulgrave	
Telephone	1-902-747-2078
Facsimile	1-902-747-2453
Tugs	
VHF	VHF channels 6, 9, 11, 13, 14, 16, and 23

Port Hawkesbury—Berthing Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Cabot Gypsum (Tupper Point)						
Gypsum Jetty	—	9.7m	213.3m	—	—	Gypsum. Berthing length of 338m (including dolphins).
Gypsum Pier	70m	—	200m	7.4m	32.2m	Gypsum. Berthing length of 175m (including dolphins).
Point Tupper Power Station						
Point Tupper Power Station Berth	135m	—	244.2m	12.9m	32.2m	Coal. Berthing length of 197m (including dolphins).

Port Hawkesbury—Berthing Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Bear Head LNG Terminal						
Bear Head LNG Terminal	—	—	345m	12.2m	54.0m	LNG. Under construction.
NuStar Energy — Point Tupper Terminal						
No. 1	135m	31.0m	—	25.9m	—	Petroleum products. Berthing length: 590m (including dolphins).
No. 2	75m	18.0m	253.3m	13.7m	44.2m	Petroleum products. Berthing length of 305m (including dolphins).
Cape Porcupine Terminal						
Martin Marietta Wharf	—	15.0m	245m	—	32.2m	Aggregates and bunkers. Berthing length of 218m (including dolphins).
Mulgrave Marine Terminal						
North Berth	150m	9.3m	244.7m	—	32.2m	General cargo.
South Berth	275m	6.0m	171.5m	—	27.0m	General cargo.

Two tugs are available at all times off Point Tupper. Additional tugs require a ten day notice. Additional information can be obtained by contacting Point Tupper Marine Services Ltd.

Regulations.—Vessels should send their ETA, including the master's name, 72 hours and 24 hours prior to arrival. Vessels should contact Gulf Control on VHF channel 9 when 35 miles from the terminal.

Anchorage.—The deep-water anchorages are charted in Chedabucto Bay and designated by letter.

The roadstead off Ship Harbour, outside Premier Shoal, has depths of 12.2 to 18.3m, sand, gravel, and mud. Except near the head of the harbor, where there is secure anchorage for small vessels, in 6.1m, mud, the port is open to NNW winds, which cause a heavy short sea.

Two anchorages, with depths of 59m, are situated about 0.5 mile W and SW of the Nova Scotia Pulp Company Wharf.

Caution.—Several power cables, pipelines, and other submerged facilities lie across or in the channel between Ship Point and Point Tupper and caution is advised.

Canso Causeway and Canso Lock

4.20 The stone causeway, which carries railway track and roadways, closes the strait at the town of Port Hastings, about 3 miles NW of Port Hawkesbury. The causeway is lighted and there are overhead cables which cross the navigation lock with a vertical clearance of 41m.

The lock at the E end of the causeway allows vessels to navigate the strait free of current which would be caused by a 0.5m tidal difference. The lock, which is 250m long between the gates and has a minimum width of 24.4m, is crossed at its S end by a swing bridge carrying the road and rail tracks.

There is a stone mooring berth available at each end of the lock for vessels standing by for clearance. The S berth is 198m long, while the N berth is 213m long.

Depths—Limitations.—The lock is restricted to vessels with a maximum length of 224m and a beam of 23.2m. Drafts to 8.5m are handled on a regular basis, but vessels with a draft of less than 9.1m may enter the lock when tidal conditions are favorable in the opinion of the Canal Superintendent.

Aspect.—The Canal Superintendent's office on the lock wall is equipped with radiotelephone and will be contacted on VHF channel 11 when within 0.5 mile of the lock.

A traffic light on the swing bridge operates, as follows:

1. Flashing red—preparation of bridge opening and during the time the bridge is in motion.
2. Fixed red—the bridge is fully closed.
3. Fixed white—the bridge is fully opened.

Signal lights are shown from either end of the lock. Vessels enter the lock on the green signal or on the lockmaster's instructions and leave on the lockmaster's instructions.

A light is shown from a post on the outer end of the mooring berth at either end of the canal.

Range lights, in line bearing 131.5°, exhibited from April 1 to December 1, are situated on the N end of the lock and mark the approach to the canal from N.

Range lights, in line bearing 144°, also exhibited from April 1 to December 1, are shown for the outer approach to the canal from St. George's Bay. The front light is shown from a skeleton tower situated near the center of the causeway, and the rear from a similar structure with inverted daymark, on the shore nearly 1 mile SE.

Regulations.—Vessels over 30.5m in length are required to land linesmen on the lock wall to handle the ship's lines prior to the bow of the vessel nearing the lock gates. At the discretion of the lockmaster, ships over 153m in length may be required to land three line handlers. Smaller vessels must land the linesmen before the bow of the vessel passes the mid-point of the lock. Linesmen are not supplied by the Canal Superintendent unless requests are made at least 6 hours in advance of transit. Such assistance will be at the vessel's expense.

A submerged power cable is laid from near the W entrance

point of the SE end of the canal to a position near the middle part of the causeway.

The Canso Lock is closed to navigation during the winter months. It usually closes in January and opens in early April.

Contact Information.—Vessels should establish contact when within 0.5 mile of the lock. See the table titled **Canso—Contact Information**.

Canso—Contact Information	
Canso Port	
Call sign	VAX
VHF	VHF channel 16
Canso Locks	
Call sign	VAZ3
VHF	VHF channels 11 and 14
Telephone	1-902-625-1950 (Lockmaster)

Caution.—Dixon Rock, with a least depth of 4.9m, lies in the S approach to the navigation lock, about 0.1 mile S of McKeen Point. A lighted buoy is moored close WSW of this rock.

4.21 The Strait of Canso N of the causeway is deep and without dangers in the fairway. Vessels generally run the range lights from a position NE of North Canso Light.

North Canso Light (45°42'N., 61°29'W.) is shown from a white circular tower situated on the W side of the N entrance to the Strait of Canso.

Pilotage.—Pilots for the Strait of Canso board in the N approach, about 0.8 miles ENE of North Canso Light.

Additional information on pilotage and procedures is contained in this sector under the heading "The Strait of Canso" in paragraph 4.17.

Aulds Cove is situated on the W side of the Strait of Canso, 0.6 mile NW of the causeway. There is a public wharf extending 30m to an outer end 30m wide. The N side of the stem has depths of 0.9 to 2.7m, and the south side 1.8 to 2.4m. The outer end has depths of 2.1 to 2.7m, and the inside face 1.8m. A floating dock is attached to the south side of the stem; it has a south face 25m long and a least depth of 1.2m alongside. Poor shelter is reported during north seas and swells.

Caution.—Overhead power lines, with a minimum vertical clearance of 49m, span the strait about 0.9 mile NW of the causeway.

St. George's Bay

4.22 A Traffic Separation Scheme has been established in St. George's Bay. The traffic routes are clearly defined on the chart and are compulsory in their use.

There are no dangerous shoals or hazards in the traffic lanes leading through the bay from the Strait of Canso to Northumberland Strait and to the entrance of the St. Lawrence River. The least depth in the channel is 22.9m.

St. George's Bay—East Side

4.23 Between **Low Point** (45°43'N., 61°28'W.), on the E side of the N entrance to the Strait of Canso, and Long Point, about 5.5 miles N, shallow water extends in places up to 0.75 mile offshore. The land is high, and 0.5 mile inland it rises to the summit of a ridge, 278m high, which parallels the coast as far as Long Point. The only prominent feature along this stretch of coast is the spire of the church at Cregnish.

The public breakwater-wharf at Cregnish, 1 mile N of the church, is 68m long and dries on all faces.

From Long Point to Emersion Point (Big Rorys Point), about 7.5 miles N, shoal water with detached rocks and boulders lies up to 2 miles offshore.

Judique Shoals, with a least depth of 1.8m, lie up to 1.5 mile W of Campbell Point, nearly 3 miles N of Long Point. Judique Bank, a rocky area with a least depth of 8.5m, and foul ground all around it, lies about 3.5 miles NW of Campbell Point.

Depths—Limitations.—A government wharf, available only to boats, is situated at Walker Cove, about 0.5 mile S of Campbell Point.

Mackay Point, about 1.3 miles S of Emersion Point, is low with rocks off it. A government wharf, for boats, extends a short distance from the shore on the E side of the point. Kate Point lies about the same distance N of Emersion Point, and a small boat harbor is protected by two breakwaters on the N side of the bay formed between these two points.

Little Judique Harbour, located about 1 mile N of Kate Point, provides a small sheltered anchorage for boats between two breakwaters. The channel has a width of 11m and there is a depth of 0.9m in the approach.

A light is exhibited at the outer end of the N breakwater from a circular mast, 3.1m high.

Close off the entrance, which is 30.5m wide, is a rock which dries 0.9m. The S breakwater is in ruins.

4.24 **Port Hood** (46°00'N., 61°33'W.) is the only harbor along this part of the W coast of Cape Breton Island where shelter can be obtained by small ocean-going vessels. The waters of the harbor are protected from NW winds by Port Hood Island and Henry Island and the reefs between, and also by a breakwater, reported to be partly submerged at HW, between the former and the mainland.

From a position about 2 miles SE of Henry Island Light, the channel, marked by buoys, leads N towards the pier at Port Hood. The entrance to the harbor is narrowed by Spithead Shoal and Dean Shoal, which together provide some protection from SW swell. However, an SW gale will usually override the shoals and send in a heavy sea. Buoys mark the outer limits of these shoals and also the approximate area of deeper water within the harbor.

Depths—Limitations.—A T-shaped wharf, in a state of disrepair in 2002, extends 180m from the shore at Port Hood. The outer face, 75m long, has no berth. The inside face is used by residents who live on Port Hood Island.

Aspect.—The town of Port Hood stands on the mainland opposite the N end of Port Hood Island. The church, near the middle of the town, is red with a spire and is somewhat conspicuous. A smaller white church, with a red spire, is situated about 0.2 mile S of the larger church.

Port Hood Range Lights, in line bearing 007.5°, are situated on the NE side of the harbor. The front light is shown from a skeleton mast, 5.2m high, with a white daymark with a fluorescent red vertical stripe, situated on the outer end of the public wharf. The rear light is shown from a similar structure.

Port Hood Island Light is shown from an aluminum skeleton mast on Smith Point.

Anchorage.—The best anchorage in Port Hood, in depths of 7.9 to 9.1m, sand, lies about 0.8 mile SSE of Smith Point.

Caution.—It has been reported (2008) that submerged ruins lie NW of Port Hood. Mariners are advised that the breakwater ruins are unstable. The ruins and nearby depths are subject to change. A submarine cable lies across the N end of the harbor from Smith Point to the shore close N of the public wharf at Port Hood. Another submarine cable runs from Prince Edward Island, passing midway between Port Hood Island and 0.5 mile N of Port Hood public jetty.

4.25 Port Hood Island is surrounded by cliffs, except for a sandy beach on the head of the bay at the NW end. Gypsum cliffs are conspicuous at the NW extremity of the island. The church in the N part of the island is prominent.

A breakwater extends S from Smith Point on Port Hood Island. A boat basin, enclosed by three faces of total length 150m, and depths of 0.9 to 1.8m alongside, is situated inside the breakwater. A wharf close west of the breakwater is in a state of disrepair. A light is shown from a red and white daymark at the outer end of the breakwater.

At Murphy Pond, N of the Port Hood breakwater, there is a boat basin for fishing craft which is protected by two breakwaters. Lights are shown at the outer ends of each breakwater. Another light is situated on the shore midway between the breakwater and Murphy Pond. The wharf face on the east side is 34m long, a ramp 12m wide lies to the S of the wharf face. The N face totals 180m in length, including two sides of an adjoining pier. On the W side, the marginal wharf is 64m long. A floating wharf, with a total length of 67m, adjoins the W breakwater. There is a reported depth of 1.8m throughout the basin.

Little Judique Harbour lies just north of Cape Susan (Domhnull Ruadhs Head) to the SE of Henry Island. There is a sheltered small craft harbor that is entered between two breakwaters. The channel has a width of 11m and there is a depth of only 0.9m in the approach. A light is shown from a mast at the outer end of the N breakwater. A public wharf with a face 274m long extends along the S side to a highway bridge; there are depths of 0.6 to 1.8 m alongside. A floating wharf on the N side is 34m long with depths of 0.9 to 1.8m alongside. Adjacent to this is a ramp and small boat haul out and storage area. A sector light is shown at the inner end of the south breakwater. The white sector indicates the preferred approach.

Henry Island, which lies SW of Port Hood Island and 2.5 miles off the mainland, is formed of eroding cliffs which reach a height of 30.5m along the W shore. Shoal water completely surrounds the island and extends some distance off Fishery Point, the SE extremity, where there is a stranded wreck. The passage between the two islands is foul and should not be attempted without local knowledge. A light is shown on the summit of the island.

Cape Linzee (Black Point) (46°02'N., 61°33'W.), about 1.5 miles NNW of Port Hood, is the NW extremity of Cape Breton Island and the E entrance point of St. George's Bay.

Henry Island Light

The NW coast of Cape Breton Island is continued later in this sector in paragraph 4.30.

St. George's Bay—South Side

4.26 **Havre Boucher** (45°41'N., 61°32'W.), situated about 1.5 miles W of North Canso Light, is only available to small craft. The entrance is narrow, but there is a least depth of 1.8m along the alignment of the range lights. The channel is marked by buoys. The best anchorage is in the middle of the harbor, in depths of 2.4 to 3.7m, mud. The government wharf on the W side of the cove, just within the entrance, has a T-head about 30m long with a depth of 3.4m off the outer end.

Range lights, in line bearing 194.5° and displayed from May 1 to December 15, are shown from white square towers on the SW shore of the harbor.

Cape Jack (45°42'N., 61°34'W.), 2 miles W of Harve Boucher, is a prominent headland with a red sandstone cliff, 18.3m high, facing to seaward. There are several ponds behind the cape.

Jack Shoal, with depths of less than 5.5m up to 2 miles N of Cape Jack, dries up to 0.9m at two rocky ledges about 0.5 mile offshore. This shoal should be given a wide berth at all times.

North Canso Light, which is obscured over Jack Shoal, kept in sight to the N, leads clear of this danger.

Cape Blue, of limestone, lies about 1.5 miles SW of Cape Jack with Barrio Head, a cliff of red sandstone, about the same distance farther SW. Little Tracadie Harbour, small and shallow, with a drying bar only available to boats at HW, lies between these two points and requires local knowledge.

Tracadie Harbour, enclosed by Delorey Island, is entered about 0.8 mile WSW of Barrio Head through a narrow buoyed channel which, in 1990, had a least depth of 0.9m in mid-channel and was reported to almost dry at LW. There is a depth of 4m in the middle of the harbor, which has many small coves and islets. A breakwater extends NW from the E side of the entrance.

Bowman Head, the NW extremity of Delorey Island, and Middle Head, the NE extremity, are both moderately high, cliffy, and bordered by reefs.

Bowman Bank covers a large area NW of Bowman Head and extends up to 2 miles from shore. It has a least depth of 2.7m, rock, on its outer part and should be considered dangerous.

4.27 Pomquet Island (45°39'N., 61°45'W.) is wooded, 15m high, and composed of red sandstone. A drying reef extends off the E side and curves to the S towards Pomquet Point, leaving a boat channel between the island and the point.

Anchorage.—Pomquet Road is partially sheltered by the island, reefs, and by a breakwater, 187m long, extending from Pomquet Point. The best anchorage, in a depth of 7.3m, sand, lies with the S end of Pomquet Island bearing 353° at a distance of 0.5 mile. Larger vessels anchor farther out, about 0.8 mile SE of the middle of Pomquet Island, but both these anchorages are exposed to NE gales.

Bayfield Wharf, on the SE side of Pomquet Point, is L-shaped and 108m long. The berth at the outer end is 16m long, with a depth of 3m alongside. A breakwater extends close N of the wharf.

Pomquet Island Light is shown from a white square tower on the NE end of the island.

Pomquet Harbour, entered about 1.3 miles WSW of Pomquet Point, is very shallow and available to small craft only. The shifting sand bar across the narrow entrance has only 0.6m, but the channel within has general depths of 1.2 to 3.7m for a distance of 2 miles.

Monk Head (45°40'N., 61°50'W.), a conspicuous cliff of white gypsum, 14m high, is bordered by shoal water which extends up to 1.5 miles to the NE. A rocky head, with a depth of 9.8m, lies just over 2.5 miles N of the head.

St. George's Bay—West Side

4.28 Antigonish Harbour (45°41'N., 61°53'W.), an extensive shallow estuary, lies in the SW corner of St. George's Bay. A partly-drying bar obstructs the narrow entrance, but a channel with a least depth of 0.9m was reported to be buoyed over the deeper part. Within the bar, the channel leads between mud flats and has depths of 1.8 to 11m. The shores are broken up into many coves, and there are several small islets. The tidal currents in the entrance seldom exceed 2 knots except in the spring snow run-off.

The town of Antigonish is situated at the head of the SW arm, about 6.5 miles from the entrance.

Ogden Pond, about 1.5 miles N of the entrance to Antigonish Harbour, is separated from the bay by a bar over which there is a narrow boat channel with a depth of 0.4m. There are depths of about 3m in the pond. There are conspicuous white cliffs close N of the entrance to Ogden Pond.

McIsaac Rock lies nearly 0.3 mile offshore, 1 mile NE of Ogden Point. There is a depth of 3.7m on this rock and it is sometimes marked by breakers.

Cape George Light

Cribbean Head, a triangular shaped point with low cliffs on its NE side, is located about 4 miles N of the entrance to Antigonish Harbor. There is a government wharf, 107m long, with depths of 1.2 to 1.8m along the W face. There is a sea wall and boulders on the E side of the wharf. A basin, 79m by 91m and dredged to a depth of 1.5m, exists on the W side of the wharf.

Cribbean Head Light is shown at an elevation of 20 from a triangular skeleton mast, 3m high, situated on the cliff.

A light is shown from a red skeleton tower standing on the outer end of the wharf at Cribbean Head.

Ballantynes Cove, on the S side of Cape George, is located about 6 miles N of Cribbean Head. An L-shaped government

wharf extends about 162m and had reported depths of 1.2 to 3m alongside. A spur about 38m long, with depths of 2.1 to 3m alongside, extends from the W side of the wharf. Anchorage can be obtained in the cove, but the holding ground is not good.

4.29 Cape George (45°52'N., 61°54'W.), a bold precipitous headland, rises to an elevation of 183m about 3 miles to the SW. Several offshore submerged rocky depths lie in the vicinity of the cape.

Cape George Light is shown from a white tower situated at an elevation of 123m close within the cape.

Caution.—Vessels are cautioned not to round Cape George at distances of less than 1 mile, as the soundings give little or no warning of the proximity of danger.

Cape Breton Island—Northwest Coast

4.30 The coast from Cape Linzee to Cape St. Lawrence, a distance of 73 miles, is high with long stretches of precipitous cliffs rising close inland to a ridge with deviations up to 457m. The cliffs are broken at intervals by ravines and gullies where a few small rivers and streams enter the sea. Small villages and resort towns are scattered along the shore, and there are a few small shallow harbors, the largest being Cheticamp, midway between the two capes.

Tides—Currents.—There is a general set toward this coast at most times. The currents are not constant and usually irregular in rate, with the speed generally not exceeding 1 knot in summer.

Caution.—Vessels should keep a good distance to seaward along this coast, especially in autumn and early winter, when the prevailing NW winds cause a heavy onshore sea and swell.

4.31 Mabou Harbour (46°05'N., 61°28'W.) is located at the mouth of the Mabou River, about 4.5 miles NE of Cape Linzee, and is entered through a channel with a depth of 0.6m. The ruins of breakwaters lie on either side of the entrance and a drying sand bank extends for 0.5 mile just within the entrance on the S side.

Mabou Harbour

The harbor within the entrance is buoyed in places and has general depths of 9.1 to 14.6m near the center. Boats can ascend on the tide to the town of Mabou, about 3.3 miles within, but the river dries above this distance. Local knowledge is recommended for entering. The latest local knowledge is imperative for safe navigation entering due to silting in the channel.

A public wharf, close inside the entrance of the N side, consists of a basin protected by two wharves. There are depths of 0.3 to 3.7m alongside the outside faces and 0.3 to 1.8m along the basin faces. Depths may be reduced by silting. A launching ramp lies near the E side of the basin.

Another wharf lies about 0.7 mile SE on the S side of the harbor. It is 21m long, with a depth of 3.7m at the outer face.

Mabou Highlands rise to an elevation of 363m about 7 miles NE of the Mabou River. The coast along this stretch, including Slight Point and Cape Mabou, is precipitous, with heights of over 183m less than 0.1 mile inland at some places.

The town of Inverness, about 11 miles NE of the Mabou River, is a terminus of the Canadian National Railway and forms a good mark from seaward. Range lights, in line bearing 124°, mark a 12m-wide channel with a safe draft of 0.9m leading into a small craft harbor just S of Inverness.

4.32 Marsh Point (46°18'N., 61°16'W.), about 5 miles NE of Inverness, is formed of low cliffs and backed by a plateau about 91m high. At Broad Cove Marsh, about 0.8 mile S of the point, there is a government breakwater, 123m long.

Margaree Island (Sea Wolf Island) (46°21'N., 61°16'W.), the S end of which lies about 3 miles N of Marsh Point, is composed of precipitous sandstone and rises to a height of about 79m. The shore of the island is fringed by submerged rocks and much of the time a heavy swell rolls in from nearly any direction. There is a strong tidal flow around the island and between it and the mainland, and anchorage in the area is insecure with poor holding ground.

The channel between Margaree Island and the mainland has depths of 9.1 to 21.9m, with rock bottom and occasional sand and gravel.

A light is exhibited on the summit of the island. The light may be obscured by cliffs when a vessel is dangerously close to the island.

4.33 Margaree Harbour (46°26'N., 61°07'W.) lies at the entrance to the Margaree River, about 10 miles NE of Marsh Point. It is a shallow basin which, with the exception of a narrow channel, almost completely dries. The entrance is protected by breakwaters on either side; the least depth on the range line leading through the channel is 1.8m. Lights are shown, from May to December, from the heads of the E and W breakwater.

Silting occurs in the channel and basin and local knowledge is recommended. Buoys mark the entrance and inner channels. Whale Cove is a small bight located 1 mile SSW of the entrance to Margaree Harbour, giving good shelter in moderate weather. The head of the bight is a fine sandy beach.

Tides—Currents.—The Margaree River is influenced by spring tides which rise about 1.4m. At such times, and especially on the ebb, the currents reach 4 knots in the entrance.

Depths—Limitations.—The public wharf has a face 48m long with depths of 1.2 to 2.4m alongside. Marginal wharves are built to the NE and SW. A floating wharf, with depths of 0.9 to

1.5m at the outer end, extends from the NE marginal wharf.

Aspect.—Range lights are shown from the S side of the entrance and lead in through the channel. These lights are in operation from May 1 to December 15. A spar buoy marks either side of the range line, about 0.1 mile from the entrance breakwater. A bridge with a vertical clearance of 2.7 m crosses the Margaree River 0.5 mile above the entrance.

Caution.—The channel is known to shift and the range line may not indicate the deepest water. The latest local knowledge is imperative for safe navigation.

4.34 Friars Head (46°31'N., 61°04'W.), lying about 5 miles NNE of Margaree Harbour, has a small deep cove on its N side where there is the ruins of a breakwater. A rock, with a depth of less than 1.8m, lies close N of the head. At Friars Head Boat Harbor, a fishing station about 2 miles S of Friars Head, there is a short breakwater protecting a boat anchorage and a landing stage with a depth of 1.2m at its outer end.

Grand Etang Harbour (46°33'N., 61°03'W.), 2 miles NE of Friars Head, is a secure harbor for small craft and fishing boats that is protected by two entrance piers. There is a depth of 1.8m in the approach and a dredged basin 167m long and 91m wide inside, with 3.4m of water. The channel and basin are subject to silting and local knowledge is recommended.

Depths—Limitations.—There are three public wharves on the SW side of the harbor. The north wharf is 55m long with depths of 1.6 to 1.4m alongside. The S wharf is L-shaped, 65m long, with an outer end 15m long and a depth of 1.3m alongside. A third wharf, 55m long, has an outer end 22m long with a depth of 1m at the outer end. The former fish plant wharf, 29m long at the face, is situated close to the NW; it has been declared unsafe and it is no longer in use. A causeway and bridge span the head of the harbor; the bridge has a vertical clearance of 2m.

4.35 Cheticamp Harbor (46°38'N., 61°01'W.), lying about 5 miles NE of Grand Etang Harbor, is located between Cheticamp Island and the mainland. It is only suitable as an anchorage for small ocean-going vessels, coasters, and fishing boats. Silting takes place and, although there are charted depths of 3.7 to 4.6m in the channel, local knowledge should be obtained before entering.

Ice.—The harbor is normally open from mid-April to early January. Ice usually forms about the middle of January, and may restrict navigation up to the middle of May.

Tides—Currents.—Spring tides rise 1.4m; neap tides rise 1.1m. Currents in the harbor are slight due to the causeway at the S end.

Depths—Limitations.—On the east side of the inner channel, there is basin which is managed by the harbor authority of Cheticamp. A marine railway lies at the head of the basin. A marginal wharf, 100m long, with depths of 2.7 to 5.2m alongside, extends west from the north entrance into the basin. A floating breakwater-wharf, 70m long, lies close S of the basin. Only the N face is available for use, and it is restricted to vessels not greater than 13m in length. There are depths of 2.4 to 7.4m alongside. A fish plant wharf lies close south. It has an outer face 50m long with a depth of 3.7m alongside.

Quai du phare Marina is located 0.2 mile S of the fisherman's basin. An L-shaped wharf extends 30m from the shore to an outer end 23m long. There is a least depth of 2.1m along the outer face, and 2.4m along the inside face. There are public washrooms. A light tower, no longer in use, is situated at the head of the wharf.

Le Quai Mathieu is located a further 0.2 mile to the S. The wharf face is 21m long with depths of 0.5 to 1.4m alongside. There is a visitors' center and washrooms. The sector light lies close inshore from this wharf. A crib, in disrepair, formally used for oil shipments, is located off the face of this wharf. Caution is necessary in this area.

A T-shaped Public wharf extends about 85m from the E shore, about 0.15 mile N of the conspicuous church. The outer end is 60m long and 10m wide with a least depth of 4.6m alongside. The deck of the wharf, concrete, has an elevation of 1.8m. The wharf is flood-lit.

Aspect.—The harbor is entered through a buoyed channel. A set of range lights and a directional light aid in the approach to the pier.

The outer range lights, shown from Caveau Point, E of the N end of Cheticamp Island, and in line bearing 108°, lead between the island and Caveau Shoal. The lights are shown from white daymarks with red stripes on Caveau Point. Mariners are cautioned not to use the towers remaining from an old set of leading lights as beacons or ranges.

Anchorage.—The most sheltered anchorage is off the government wharf, in 7.3m, but there is little swinging room and it can be unsafe in strong NE winds.

Caution.—A vessel should keep slightly W of the inner range line when passing the shingle spit, 0.75 mile SSW of Caveau Point, to avoid a 2.1m shoal close off the extremity of the spit. Local knowledge is required to proceed in via the buoyed channel.

The range lines and buoys are altered to conform with the channel.

A wreck lies close off the W shore at a depth of 0.3m, opposite the public pier.

4.36 Cheticamp Island (46°37'N., 61°02'W.), located about 30 miles SW of Cape St. Lawrence, is joined to the mainland by a narrow beach of sand and shingle at its S end. At La Pointe, the SW extremity, there is a government wharf which forms a sheltered basin about 49m wide with a depth of 1.5m. The N part dries and a small breakwater lies 91m SW, which provides additional protection.

The coast of Cheticamp Island is a perpendicular or overhanging cliff which is nearly as high as any other part of the island, the maximum elevation of which is 61m. Since these cliffs are composed mostly of sandstone, they are constantly being undermined by the sea.

Enragee Point Light is shown from a white octagonal tower on the NW extremity of Cheticamp Island.

A light is shown from a red skeleton tower on the outer end of the government wharf at La Pointe.

Anchorage.—There is anchorage, during the summer, E of La Pointe, in a depth of 7.6m. The spit extending from the point affords some shelter, but W winds send in a heavy sea. The holding ground is loose sand and gravel; the anchorage is unsafe after August.

Caution.—Jerome Ledge, with a least depth of 0.6m, rock

Cheticamp Island Light

and boulders, lies about 2 miles NE of Enragee Point, with outcrops having depths of less than 5.5m extending over 1 mile offshore.

About 0.2 mile SSW of the SW extremity of Caveau Shoals, rocky patches, with a depth of 5.5m, is located about 0.7 mile ENE of Enragee Point Light. Vessels approaching the area in poor visibility receive little warning from soundings, as Caveau Shoals are steep-to on their seaward side.

A spit, with a least depth of 1.5m, rock, extends about 0.5 mile SSE of La Pointe.

4.37 Red Cape (Cap Rouge)**,** (48°22'N., 70°32'W.), about 4.3 miles NE of Caveau Point, has an L-shaped wharf, 82m long, with a 20m outer head having a depth of 2.4m alongside the outer face. The outer face was in a state of disrepair, and the wharf was not being used.

Pleasant Bay (46°50'N., 60°48'W.), an open bight in the coast, is formed between Mackenzie Point to the S and Red Cape, about 3.5 miles NE.

The entrance channel, with a reported depth of 2.4m, passes between two breakwaters 40m apart, each 97m long, and between two piers, 12m apart, leading into the boat basin. Lights are exhibited from the head of each breakwater. The wharf at this harbor is L-shaped and 25m long across the outer face.

4.38 Cape St. Lawrence (47°03'N., 60°36'W.), the N point of Cape Breton Island, is composed of slate rock. The only landing place is on the W side, where there is a brook and a steep stony beach. The E side of cape is high and cliffy with several rocks close offshore. A light is shown from a mast on the cape.

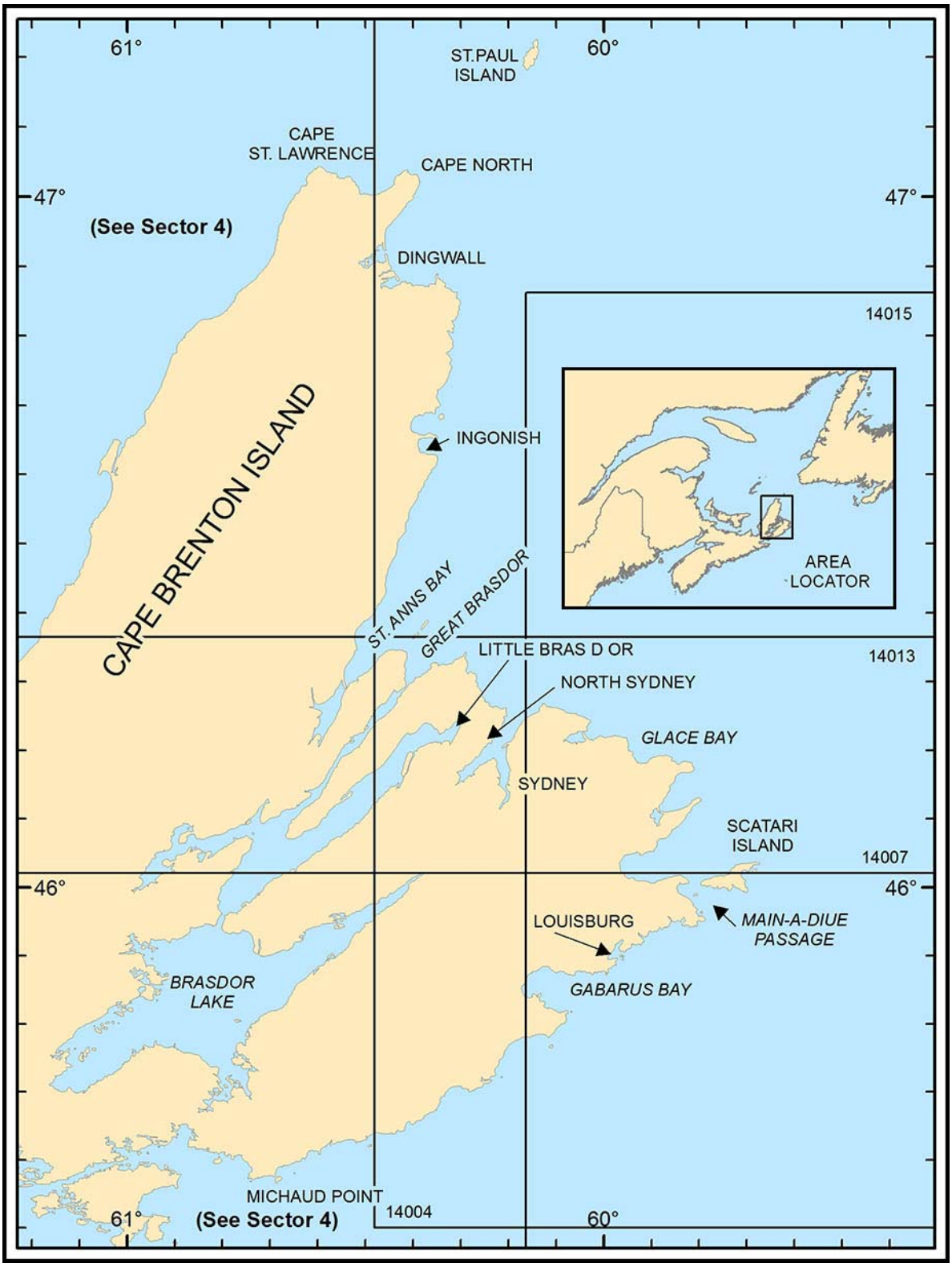
Bear Hill, a remarkable sugarloaf, 247m high, rises close to the coast, about 0.8 mile SE of Cape St. Lawrence.

High Capes, a series of steep cliffs that rise to a height of 316m only a few hundred meters inland, lie about 4 miles SW of Cape St. Lawrence and form a good mark from offshore.

A conspicuous rock slide is visible among the heights about 3 miles SSW of High Capes.

4.39 Cape North (47°03'N., 60°25'W.), described in paragraph 5.3 and lying about 7.5 miles E of Cape St. Lawrence, is the bold and rocky N extremity of Cape Breton Island and rises abruptly to an elevation of 305m. It is generally considered as the N end of the island because of its proximity to seaward, however, it lies slightly S of the parallel of Cape St. Lawrence.

St. Lawrence Bay lies between Cape North and Black Point, about 5 miles to the W. The bay affords temporary open anchorage in summer, when strong N winds are infrequent, in 16.5 to 18.3m, sand and rock, about 0.5 mile offshore. Vessels should leave the bay immediately if the wind shifts from seaward.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **5** — CHART INFORMATION

SECTOR 5

CABOT STRAIT AND CAPE BRETON ISLAND

Plan.—This sector describes Cabot Strait and its general conditions and then the E and SE coast of Cape Breton Island from Cape North to Michaud Point. The Bras d'Or Lakes are included with their approaches in the latter part of the sector.

The general description of the E and SE coasts of Cape Island is S from Cape North, to Scatar Island at the E extremity, and then SW to Michaud Point.

The Bras d'Or Lakes are described first with the N approaches, then through the various channels to the S lake and the S entrance of St. Peters Canal.

Cabot Strait

5.1 Cabot Strait, generally considered as the main entrance to the Gulf of St. Lawrence, lies between **Cape North** (47°03'N., 60°25'W.), the NE extremity of Cape Breton Island, and Cape Ray, at the SW end of Newfoundland. Except for St. Paul Island, there are no dangers in the strait which presents a clear channel with an overall width of approximately 56 miles. During poor visibility, the situation is changed considerably due to the steep-to nature of the surrounding depths off the above island and the S currents so common to this area. Vessels without electronic navigational aids and running in heavy fog must take great care when approaching the strait to prevent running into danger or other vessels.

Winds—Weather.—Winds blow with considerable strength from the NW and W in winter, shifting to SW and SE in spring and summer. Winter gales average more than 10 percent in January and February, but during summer gales are rare.

During autumn, tropical storms may reach this area and if the course of such a disturbance has been mainly over water, it can be a serious hazard to shipping in the strait and in the Gulf.

Fog in Cabot Strait has a frequency of 15 to 20 percent in summer and about 5 per cent in winter. Snow is also a problem during the winter months as it is frequently heavy and reduces visibility to near zero.

Ice.—In an average year ice begins to appear in the strait early in January. At this time it is thin, but it increases gradually to as much as 1.2m in thickness. Occasionally, pieces of hummocked ice pass through the strait. From the beginning of February to after the middle of April it is more or less completely ice covered. Much of the ice is unnavigable, the remainder being penetrable by heavy built vessels. Vessels not specially built to encounter ice cannot navigate the strait safely during these months. Sealing vessels attempt the strait at all times, but are occasionally fast in the ice for up to a week.

The average date at which Cabot Strait becomes open to navigation is about the middle of April, having varied in recent years between March 19 to May 16.

Before the strait is open to navigation, there is nearly every year a great rush of ice out of the Gulf of St. Lawrence, causing a block of tightly packed rafted ice between St. Paul Island and Cape Ray. This block, which completely prevents the passage of ships, is known as "The Bridge". This usually occurs about the middle of April, or soon after, and may persist for several days. In exceptional ice years, it has been known to persist for periods up to 3 weeks. It is known that 300 vessels have been detained at one time by this obstacle, and many wrecks have occurred, in consequence, on the coast of Newfoundland. In severe ice years, the formation of The Bridge occurs later, at any time up to about the first week of May.

For many days after navigation is open, quantities of ice pass through the strait, particularly with N winds. In severe ice years, the passage of ice may continue until about the end of May.

Vessels entering Eastern Canadian waters between December 15 and the time these waters are clear of ice, can obtain ice information, routing, and icebreaker assistance by contacting "Ice Halifax" by VHF or R/T. This service is generally inclusive of the Gulf of St. Lawrence between 58°W and 66.5°W.

Tides—Currents.—Notwithstanding the bold nature of this coast, wrecks have occurred upon it in the dense fogs that accompany E winds. The wrecked vessels have generally been steering a supposedly safe course to pass N of St. Paul Island into the Gulf of St. Lawrence, but with no allowance having been made for current which so frequently runs SSE out of the gulf.

Investigations of currents in Cabot Strait have revealed a complex pattern with marked seasonal differences. In winter, there is a SE flow from the Gulf of St. Lawrence across the strait. The flow, stronger on the Cape North side of the strait with a mean rate of 0.5 knot, decreases to 0.25 knot off Cape Ray. Labrador Current approaches the center of the strait from the E, but is diverted N and S to join the outflowing current on both sides of it. This "blocking" of the inflowing Atlantic may be due to the prevailing NW wind over the Gulf of St. Lawrence during the winter months.

From about April to November, the outflow continues on the Cape North side of the strait, attaining a mean rate of 0.5 to 0.75 knot in August. On the Newfoundland side a weak inflow of less than 0.25 knot takes place 3 to 15 miles SW of Cape Ray, and the SE current on the S side of Cabot Strait, sometimes known as the Cape Breton Current or the Cabot Current, attains its greatest velocity near Cape North, at times reaching a velocity of 2 knots. The current continues to be felt along the sweep of the NE coast of Cape Breton Island, sometimes as far as Scatari Island, before it mingles with the waters of the Atlantic Ocean.

The volume of water which leaves the Gulf of St. Lawrence in this current is largely, if not wholly, made up by the inward flow on the Newfoundland side of the strait around Cape Ray.

Pilotage.—Pilotage for ports in this sector is obtained through the Atlantic Pilotage Authority. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further information.

Traffic Separation Scheme.—The Cabot Strait Traffic Separation Scheme is part of the system in use throughout the Gulf of St. Lawrence and the St. Lawrence River. The use of these separation zones is mandatory.

Cabot Strait is divided into two separation zones, which al-

lows for approach and departure S and SSE. The SSE lanes are separated by St. Paul Island and join the SE lanes off Rochers aux Oiseaux (Bird Rocks), N of Iles de la Madeleine.

Cape Breton Island

5.2 Cape Breton Island, a part of the Province of Nova Scotia, is separated from the mainland by the Strait of Canso, as described in paragraph 4.17. The chief centers are the city of Sydney and the towns of North Sydney, Sydney Mines, and Glace Bay. The outer coastline is 665 miles in length, and together with the Bras d'Or Lakes, the total coastline is 1,098 miles. The exports of the island include agricultural and dairy products, fish, coal, iron, and steel.

The salt water lakes of Bras d'Or bisect the island and are entered by two natural channels at the N end, or by St. Peters Canal, cut through in the S. They provide an inland waterway for small to moderate size vessels.

Tides—Currents.—After long NE or E winds, which raise the level of the Bras d'Or Lakes and neighboring harbors, it is not unusual to find a current with a velocity of 1 knot running for several successive days along the coast from off St. Ann to near Cape North, where it meets the current out of the gulf and is turned to the E, causing strong rips. Fisherman affirm that it as often runs in the opposite direction, and also that at times there is a regular alternation of the flood and ebb tidal currents.

Aspect.—The E coast of Cape Breton Island from Cape North to St. Ann Bay, a distance of 47 miles, is bold, mountainous, and free from off-lying dangers. The hills near the coast reach a height of more than 425m, and are chiefly composed of granite, with clay slate in nearly vertical strata. They form good marks when proceeding a moderate distance offshore.

Cape Breton Island—North End

5.3 **Cape North** (47°03'N., 60°25'W.), a bold rocky headland consisting of slate, is steep-to and rises abruptly to a height of 305m. Violent local squalls are common off the headland and the cape is reported to give good radar returns up to 17 miles.

Cape North Light is shown from a white pyramidal tower, 15m high, situated on a square building on Money Point, about 1 mile SE of the cape.

A microwave tower, marked by obstruction lights, stands at an elevation of 431m, about 1 mile SSW of Money Point. This tower is a good mark from all seaward directions.

5.4 **St. Paul Island** (47°13'N., 60°09'W.) lies with its S end about 13 miles NE of Cape North. The rocky and bold island rises in two parallel ranges of hills which attain a maximum elevation of 148m near the SE end. The N point is a detached pinnacle islet which appears from seaward to be joined to the main island. The peninsula just S of the N point is 125m high and from the E appears as a separate island.

The depths increase rapidly at only 0.5 mile offshore and soundings give little warning when approaching the island in thick weather. Although the island is bold and high, the high incidence of fog in this area has lead to the occurrence of many shipwrecks upon it.

Tides—Currents.— Currents around the island are variable.

Cape North Light

Soundings give little warning when approaching the island in poor visibility as the water deepens rapidly 0.5 mile offshore. There is a high incidence of fog in S, E and often SW winds.

Aspect.—A light is shown from a white tower, 14m high, on North Point. Another light is shown from a white round tower with red upper portion, 6m high, on South Point.

Anchorage.—During offshore winds, small fishing vessels anchor, in 18.3 to 21.9m, sand and gravel, about 0.2 mile off the outer rocks in Atlantic Cove, on the SE side of the island. Anchorage is also available in Trinity Cove on the SW side of the island.

In good weather, large vessels might anchor about 0.5 mile offshore, in depths of 45 to 55m; however, they must be ready to weigh anchor at the first sign of deteriorating conditions.

The above two coves afford the only good landing places on the island.

Caution.—Acoustic sensors, one meter high and positioned approximately 800m apart, along a line that extends from the S end of Saint Paul Island to the NE end of Cape Breton Island, directly on the seabed. Mariners are advised to avoid anchoring or conducting seabed operations in the vicinity of submarine moorings.

Cape Breton Island—East Coast

5.5 **Money Point** (47°02'N., 60°23'W.), from which a light is exhibited, lies about 1 mile ESE of Cape North. Some above-water rocks extend about 0.1 mile off Money Point.

Aspy Bay indents the E shore of Cape Breton Island between Money Point and White Point, about 8.5 miles to the S. Wilkie Sugarloaf, a conspicuous conical mountain, rises to a height of 412m on the NW shore of the bay and marks the N side of the lowlands at the head of the bay.

Dingwall Harbor (46°54'N., 60°28'W.) is entered at the head of Aspy Bay and protected by two pairs of curved breakwaters which form an opening with a width of about 30m. The harbor provides good shelter, but cannot be entered in easterly gales. The entrance is impassable with easterly swells in the range of 1.8m.

Depths—Limitations.—The entrance is subject to rapid silting and the depth was reported as only 1.8m. The remains of former breakwaters, partly dry at LW, parallel the channel and extend E about 90m from the outer breakwaters.

There are several other small wharves with depths of about 1.5m alongside.

A disused gypsum plant and wharf, in ruins, are situated on the N side of Dingwall Harbor. A government wharf is situated close N of the above-mentioned gypsum wharf. The fishing plant wharf is on the S side of the harbor.

Dingwall Harbor—Berth Information		
Berth	**Length**	**Depth**
Government Wharf (L-shaped)	47m	6.7m
Fish Plant Wharf	46m	3.4m

The Bird Islands consist of Hertford Island and Ciboux Island, both long, narrow, and composed of precipitous sandstone. They extend approximately 4 miles NE of Cape Dauphin and terminate in Ciboux Shoal, with a least depth of 4.6m. Shallow water continues to the NE for an additional 2 miles. Hertford Ledge, with 0.9 to 2.1m of water on it, extends from Hertford Island inshore towards Cape Dauphin, effectively blocking all but a narrow 10.1m channel.

Both the N and S breakwaters are marked at their respective heads by a light shown from a red mast. These lights are operated from May 1 to December 15.

A lighted bell buoy is moored a little over 0.75 mile E of the N breakwater. The outer limits of the dredged approach channel are marked by spar buoys and both sides of the inner channel are also buoyed.

Caution.—The harbor cannot be entered during strong winds from the E. The depths in harbor are subject to change and the navigational aids may be moved to best follow the channel. Local knowledge is necessary to enter. Ice restricts navigation from January to April.

5.6 White Point (46°53'N., 60°21'W.), formed by two islets close offshore, is steep-to. A government wharf, with a length of 37m and a depth of 3.4m on its outer side and a length of 24m and depths of 1.3 to 3.0m on its inner side, is situated on the W side of the point, about 0.8 mile S of the two islands. A light is shown from a mast on the outer end of the breakwater.

Cape Egmont (46°51'N., 60°18'W.), about 3 miles SE of White Point, is a comparatively low granite headland nearly bare of trees. At New Haven in Hungry Bay, about 1.8 miles SSW of Cape Egmont, there are small craft facilities. A lighted whistle buoy is moored about 0.6 mile E of New Haven.

Neils Harbour, about 1 mile S of New Haven, has small craft facilities protected by a small breakwater. A light, maintained from April 1 to January 1, is shown from a white square tower on Neil Head, the N entrance point. A lighted bell buoy is moored about 1 mile SE of Neil Head.

Ingonish Island (46°41'N., 60°21'W.), about 61m high, is rocky and surrounded by dangers. A spit and reef extends between the island and Jackson Point (MacLeads Point), on the mainland about 0.5 mile NW.

Ingonish Bay is divided into North Bay and South Bay by a long, narrow, and precipitous strip of land known as Middle Head. The mountains at the head of North Bay are the highest on this coast and Cape Smoky, the S entrance point of South Bay, rises steeply to a height of 289m. Violent squalls sometimes precipitate from these highlands and come down on the bay with great force.

Ingonish Island—Berth Information		
Berth	**Length**	**Depth**
Public Wharf	122m	1.8m
Dundas Head Public Wharf	—	0.9m

There is a breakwater, 158m long with a depth of 4.9m at its outer end, extending SW from The Point, a spit about 0.3 mile SW of Jackson Point, in North Bay. A government wharf lies close N of the breakwater. A drying shoal lies off the S side of the wharf. A light is shown from a mast on The Point.

Anchorage.—Small vessels can anchor SW of the breakwater in convenient depths, sand over hard mud. Larger vessels can anchor W of Jackson Point according to draft, however, there are some rocky patches and local knowledge is recommended. None of the anchorages W of Jackson Point are safe in E winds and vessels should clear the bay if the weather increases from this direction.

Caution.—Fisherman Rock, with a depth of 3.7m, lies about 0.1 mile SE of Middle Head and is a danger to vessels rounding this headland too closely.

5.7 Ingonish Harbour (46°38'N., 60°23'W.) is a fishing center which is separated from South Bay by a gravel beach which protects the harbor area. Access is through a channel marked by spar buoys which had a least depth of 4.9m, although it has been reported that due to shifting sands there may be less water than charted on the N side of the entrance channel.

The government wharf on the N side of the harbor, just within the entrance, is in ruins, the S side has a depth of 7.9m. There are several other wharves, including a fish plant wharf, with depths of 3 to 3.7m alongside.

Ingonish Harbor Light is shown from a skeleton tower on the beach on the S side of the harbor entrance. The light is maintained from May 1 to December 15. A lighted whistle buoy is moored about 1.3 miles NE of Cape Smoky.

The coast from Cape Smoky to Bentinck Point, about 12.5 miles SSW, slopes more gently to the sea and has a more fertile appearance with the mountains receding inland and leaving space for scattered farms.

With offshore winds good landing for boats can be had at the brooks at Wreck Cove, 6.5 miles S of Cape Smoky, and at Rocky Brook, 3 miles farther S. At Briton Cove, 2.75 miles SSW of Rocky Brook, there is a breakwater 96m in length with

a depth of 1.5m at its head. Close S is another breakwater, 183m long, which forms a basin providing shelter for small craft. A lighted buoy, 0.25 mile SSE, indicates the approach.

St. Anns Bay

5.8 St. Anns Bay (46°23'N., 60°25'W.) indents the coast between Bentinck Point and Cape Dauphin, about 5.5 miles SSE. The W shore of the bay is fringed with shoal water to a distance of 0.4 mile and cliffs of white gypsum can be seen about 1.5 miles SW of Bentinck Point. Island Point, about 4 miles farther SSW, appears as an island, but is actually a small wooded peninsula joined to the mainland by stony beaches enclosing a pond.

Cape Dauphin, high and steep, forms the termination of the peninsula on the E side of St. Anns Bay.

Aspect.—Ciboux Island Light is shown from a white tower situated on the summit near the N end of the island.

Anchorage.—Good anchorage is reported in St. Anns Bay, in a depth of 22m, mud, about 0.5 mile off the SE shore with Beach Point Light bearing 220°, distant 2.3 to 3 miles. Vessels are recommended to clear the anchorage in NE winds.

St. Anns Harbour

5.9 Beach Point (46°17'N., 60°33'W.), at the S extremity of a long narrow sandy spit extending from the W shore of St. Anns Bay, forms a natural breakwater that completely shelters St. Anns Harbour. A light is shown from a red framework tower, 6m high, at the head of the bay.

Tides—Currents.—The maximum rate of the tidal current in the entrance to the harbor is 3 to 4 knots. The sea breaks heavily on the bar in strong NE winds, particularly on the ebb. Springs rise 1.5m and neaps rise 1.2m.

Depths—Limitations.—See table titled **St. Anns Harbour—Berth Information** for details on berthing facilities in the harbor.

On the E side of South Gut is a wharf in ruins. Pontoons are moored to the shore.

A buoyed channel, 45m wide, with a limiting depth of 4.6m, has been dredged through the bar NE of Beach Point. Vessels are recommended to have local knowledge before attempting it. The fairway passes close W of Bar Point.

Aspect.—St. Anns Mountain rises steeply from the shore to a height of 343m on the W side of the entrance and forms a good mark from the bay.

St. Anns Harbour—Berth Information		
Berth	**Length**	**Depth**
Beach Point L-head Wharf	12m	4.3m
Englishtown L-shaped Wharf	45m	1.5-5.5m

Anchorage.—Vessels can anchor, in a depth of 14.6m, mud, W of Port Shoal and out of the tidal currents running through the entrance. A more sheltered anchorage is off Seymour Point, in the W part of the harbor, where vessels can anchor as conveniently as in the cove NW of Monro Point.

Caution.—Port Shoal is a mud bank with a least depth of 2.1m located just within and on the W side of the entrance.

Shipyard Rock, with a depth 3.4m, lies off Seal Cove in the SW part.

McLeod Point, marked by a gypsum cliff, is located in the S part of the harbor and divides the head of the bay into South Gut and North Gut. A shoal, with a depth of 3.4m on its E side, extends about 0.35 mile NE of the point.

A cable ferry operates from Beach Point across the entrance to the harbor. When the ferry is docked, the cable has a maximum clearance depth of 7.6m. Each ferry dock displays a green or red light. Green is shown when the ferry is docked; red is shown when the ferry is in transit.

Mariners are cautioned not to proceed across the ferry route unless green lights are visible.

Gales from the NE can be violent in this harbor anytime after mid-August.

Table Head to Sydney Harbour

5.10 Table Head (46°20'N., 60°22'W.), on the E side of Great Bras d'Or, about 2.5 miles ESE of Cape Dauphin, is precipitous, with shoal water extending 0.2 mile off. Table Rock, 6.4m high, lies on the shoal ground a little over 0.1 mile W of the head.

The shore SW of Table Head is composed of red cliffs and is moderately conspicuous.

Aspect.—The coast E of Table Head changes considerably, with the mountains and high shore to the NW giving way to moderate heights and lower coastal cliffs of sandstone and shale. Shoals extend up to 1.5 miles from the shore and in many cases are steep-to on their seaward sides, rendering approach to the coast difficult in fog.

Great Bras d'Or and its approaches are described in paragraph 5.26 with the Bras d'Or Lakes. Little Bras d'Or is included with St. Andrews Channel in paragraph 5.29.

Point Aconi (46°20'N., 60°18'W.), the NE extremity of Boularderie Island, lies about 3 miles ENE of Table Head and consists of eroding cliffs formed by coal strata. A chimney, 106m high, about 2 miles SW of Point Aconi, is marked by white strobe flashing lights. A rocky shoal, on which is located Aconi Islet, about 12m high, extends nearly 1 mile NE of the point and continues S to the entrance of Little Bras d'Or.

Aspect.—Point Aconi Light is shown from a white round tower, 12m high. Lighted Whistle Buoy K6 is moored about 2.3 miles NE of Point Aconi on the approximate alignment of Little Bras d'Or approach range. The buoy is removed during winter.

Adler Point (46°19'N., 60°17'W.), the E entrance point of Little Bras d'Or, lies about 1.5 miles SSE of Point Aconi. Between Alder Point and Cranberry Point, about 4.5 miles SE, the coast is fringed by shoal water extending in places over 1 mile offshore. Numerous dangerous rocks, awash, or with only 1m or less water, lie offshore along this stretch of the coast and vessels are recommended not to approach the land within 2.5 miles without local knowledge. High Cape, on the W side 0.8 mile S of Point Aconi, is a remarkable steep bluff. An open pit mine is conspicuous 0.2 mile south of the cape. A water tower, elevation 36m, is conspicuous 0.7 mile south of Alder Point.

The currents are predominant along the entire length of the channel. Slack water is reported to be 1 hour in duration at both

the high and low waters. The channel is lined by low banks with mostly deciduous trees, and mud and grassy flats which dry. Houses are located near the banks along some of the stretches. Deep water is not always near the center of the two shores, but if navigated at low water, the exposed flats will show the direction of the channel.

Crawley Creek—Berth Information		
Berth	**Length**	**Depth**
Public Wharf (W side)	32m	2.4-2.7m
Public Wharf (E side)	—	2.3-3.0m
Arsenault Creek Public Wharf	9m	2.4m

The Canadian Coast Guard College is located inside Crawley Creek (46º09'N, 60º13.4'W), close SW of Sydport where there are numerous moorings for training craft.

Approaches to Sydney Harbour

5.11 **Low Point** (46°16'N., 60°08'W.), consisting of low cliffs, forms together with Cranberry Point, about 3.5 miles to the W, the entrance to Sydney Harbour, an inlet located on the S shore of Spanish Bay.

The harbor is easy to access, being approached straight from the sea, and is capable of accommodating a large number of vessels; the least depth in the channel is 11.6m.

Aspect.—Low Point Light is shown from a white octagonal tower on Low Point.

The main approach range lights are shown from the vicinity of Dixon Point on the E side of North West Arm, and in line bearing 213°34', lead into the harbor from seaward. The front light is shown from a white octagonal tower and the rear light from a white square tower. The lights are only visible when in alignment.

A lighted whistle buoy is moored on the line of the main approach range, about 2.3 miles N of Low Point.

A lighted bell buoy is moored a little less than 1 mile NE of Cranberry Point and marks the N limit of the shoal water NE of Cran Rock.

Caution.—Cran Rock, with a depth of 5.8m, lies about 0.5 mile NE of Cranberry Point, with shoal water extending in the same direction for another 0.35 mile.

Petrie Reef, which nearly dries, lies about 1 mile SW of Low Point. Livingstone Shoal, with a least depth of 1.2m, lies about 2 miles SW of Low Point.

A number of submarine cables crossing Cabot Strait extend N and NE from a position 1.5 miles W of **Cranberry Head** (46°16'N., 60°07'W.) and from positions N and E of Low Point.

Sydney Harbour (46°09'N., 60°12'W.)

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5.12 Sydney Harbour consists of an inlet running SSW from the coast for about 5 miles to Point Edward, where it divides into North West Arm and South Arm. The navigable channel is restricted to 0.5 mile within the entrance, but remains straight and easy of access.

The town of Sydney Mines is on the W side of the entrance, about 1.5 miles within Cranberry Point. The port of North Sydney is on the W side, within North West Arm, and Sydney is on the E side of South Arm.

The principal imports are fish and fish products; North Sydney exports general freight, asphalt, and cement. North Sydney also provides terminal facilities for ferries to Argentia and Port au Basques.

Sydport Industrial Park is a privately owned complex with a jetty and berthing facilities. A new deep-water container terminal, located at Greenfield, is the proposed site for the Novaporte Terminal. The quay will be 1,600m long and will consist of four berths. Construction will begin in 2017/2018 with an expected opening of the terminal scheduled for 2019. The existing cruise berth at Sydney Marine Terminal is subject to a planned expansion to allow the berthing of a second vessel. A dock, approximately 300m in length, will be extended at an angle from the N end of the existing quay.

Winds—Weather.—Prevailing winds are southwesterly.

Ice.—The harbor starts to freeze about January 20 and is usually free of ice by April 1. Powerful icebreakers are stationed at Sydney and keep the port open for year round use.

Tides—Currents.—Spring tides rise around 1.5m; neap tides rise about 1.2m. LWS usually maintain a height of 0.2m or more over datum in the approach channel.

Depths—Limitations.—The least depth in the entrance channel is 11.6m. North West Arm has general depths of 11 to 14m in the channel and South Arm has a least depth of 14.6m on the range line.

Sydney Harbour—Berthing Information						
Berth	**Length**	**Depth**	**Maximum Vessel**			**Remarks**
			LOA	**Draft**	**Beam**	
Sydney Marine Terminal						
Main Dock	275m	12m	361m	—	43m	Cruise ships, project cargo, breakbulk, bulk cargo, and fuel.
New Pier	180m	10.3m	361m	—	—	Cruise ships.
Atlantic Canada Bulk Terminal						
Wharf No. 1	357m	12.7m	200m	11.5m	36m	General cargo. Berthing length of 495m (including dolphins).

Sydney Harbour—Berthing Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Logistic Stevedoring (Nova Scotia)						
International Coal Pier	180m	15.0m	290m	35.0m	35m	Coal, petcoke, scrap steel, bulk cargo, and general cargo.
Sydpory Industrial Park						
Main Jetty	256m	11.5m	—	—	—	Breakbulk. Closed.
Inner Quay	340m	6.0m	140m	—	21m	Breakbulk.
Outer Quay	234m	6.0m	—	—	—	Breakbulk. Closed.
Quay Wall	190m	6.0m	—	—	—	Breakbulk. Closed.
Marine Atlantic—North Sydney Ferry Terminal						
Passenger Berth	212m	—	—	—	—	Passengers, ferries, and general cargo. Closed.
Cargo Freighter	240m	—	—	—	—	General cargo. Closed.
Third Wharf	150m	—	—	—	—	Training area. Closed.
Ferry Berth	184m	—	—	—	—	Ferries and ro-ro vessels. Closed.
MV Osprey Ltd.						
Wharf No.1 W side	138m	8.0m	—	—	—	Fish processing. Closed.
Wharf No.1 E side	138m	8.0m	—	—	—	Fish processing. Closed.

North Sydney Ferry Terminal and Ballast Grounds

Northwest Bar, which dries, extends with shoal water about 0.4 mile into the channel on the NW side, about 3 miles above the entrance. Southeast Bar, which dries, extends with shoal water about 0.8 mile into the channel the same distance above the entrance. The navigable width between the two is just under 0.5 mile.

At North Sydney, several piers are available. The public wharf, about 0.3 mile W of the Northwest Bar breakwater, is 143m long and 31m wide, with alongside depths of 7.3 to 7.9m. For more details on berthing facilities, see table titled **Sydney Harbour—Berthing Information**.

Northwest Arm Shoal, with a least depth of 7.3m, lies about 0.8 mile W of Point Edward.

North Sydney Marine railroad has a dry dock facility which can be utilized for minor repairs and is located 0.5 mile SW of the breakwater on Northwest Bar. Vessels up to 1,000 tons, with an alongside depth of 5.0m, length of 60m and a beam of 12 meters can be accommodated. Hull and machinery repairs can be undertaken.

Aspect.—A lighted bell buoy is moored about 1.3 miles SE of Cranberry Point on the alignment of the entrance range.

Southeast Bar is marked near its outer end by a light.

Lighted buoys are moored on the edge of the shoal water off Northwest Bar and Southeast Bar.

A lighted buoy is moored about 0.3 mile N of Point Edward.

Range lights, in line bearing 162°32', are shown from the pier 0.5 mile SW of the International Piers. Both lights are shown from triangular skeleton towers and lead up South Arm.

Buoys and lights mark the shoal areas and several piers in South Arm.

Pilotage.—Pilotage is compulsory. Vessels bound for Sydney Harbour must request a pilot from the Atlantic Pilotage Authority at least 12 hours before arrival at the Sydney Pilot Station. A vessel's ETA must be confirmed or corrected not more than 6 hours later.

The area for Cape Breton pilot embarkation is the Sydney Outer Lighted Buoy A. The recognized position for vessels arrival is located at 46°22'N, 60°08'W. For vessels calling at Sydney Marine Terminal, the pilot board in position 46°18'N 60°08'W. In rough weather the pilot boat may direct the vessel in toward the lighted buoy N of Low Point, where boarding may be accomplished under better conditions.

The master of a vessel that is to depart or make a move within the compulsory pilotage area of Sydney must report to the Atlantic Pilotage Authority 4 hours prior to such ETD. The time used should be local.

Contact Information.—See the table titled **Sydney Harbour—Contact Information**.

Anchorage.—Good open anchorage is available off North Sydney S of the charted line marking the anchorage limits at Sydney Mines. This roadstead is open to the NE and may not be safe in strong winds from that quadrant.

There is sheltered anchorage off Fishery Cove, in 11 to 12.8m, mud, protected by Southeast Bar. Good anchorage is also available nearly any place in South Arm, which is likewise protected by Southeast Bar. Several shoal areas exist in the upper reaches of South Arm and caution is advised.

Caution.—Vessels are cautioned not to anchor in the vicinity of the many submarine cables crossing the harbor. Anchorage is prohibited in the harbor entrance, to the N of Sydney Mines, as indicated on the chart, due to numerous cable crossings.

An overhead power cable, with a vertical clearance of 4.6m, crosses the Sydney River close E of a road bridge at the head of navigation. Numerous small craft moorings are situated near the shore in this vicinity.

Sydney Harbour—Contact Information	
Port Authority	
Telephone	1-902-564-6882
Facsimile	1-902-747-0911
E-mail	info@sydneyport.ca
Web site	http://www.portofsydney.ca
Atlantic Pilotage Authority	
VHF	VHF channels 12 and 16
North Sydney Ferry Terminal	
Web site	http://www.marineatlantic.ca
Atlantic Canada Bulk Terminal	
Web site	http://www.provincialenergy.com
International Coal Pier	
Web site	http://www.logistec.com
North Sydney Fisheries Pier	
Web site	http://www.mvosprey.org

Sydney Harbour to Cape Perce

5.13 From Low Point, the shore trends ESE with shoal water extending up to 0.75 mile offshore. The town of **New Waterford** (46°16'N., 60°05'W.) is a coastal town; two breakwaters provide an entrance 18m wide into a small boat harbor, which dries at LW. A public wharf, 30m long at the face, lies on the S side close within the entrance. Vessels are cautioned not to anchor in the vicinity of the submarine cables N of New Waterford.

North Head (46°14'N., 60°02'W.), about 4.5 miles ESE of Low Point, is formed of low cliffs about 2.3m high. David Head Shoal, with a least depth of 4.9m, lies about 0.8 mile NW of North Head.

Indian Bay, entered between North Head and Brian Point, about 1.5 miles SE, is completely open to NE winds and swell, but anchorage can be taken, in about 9.1m, with offshore winds and fair weather. Lingan Beach extends 1 mile NW from the S shore of the bay and leaves only a small boat entrance at its N end, having a depth of 2.1m under a road bridge to Bridgeport Basin, a shallow pond extending 2 miles to the W.

A power station, which is a large concrete structure, is conspicuous about 0.6 mile SW of North Head. White strobe lights are shown from two 158m high chimneys.

Table Head (46°13'N., 59°57'W.), about 12m high, is marked by the township of Glace Bay and is bordered by shoal water to a distance of 0.5 mile. A chimney stands on O'Neils Point, about 1 mile to the W.

Glace Bay, entered between Table Head and Macrae Point, about 3.5 miles ESE, has no safe anchorage because of shoal water and bottom characteristics. Reefs extend from Macrae Point to Wheland Point, about 1 mile WSW, on the SE shore.

5.14 Glace Bay Harbor (46°12'N., 59°57'W.) is located on the SW shore of Glace Bay and is entered between two breakwaters using a 30m wide channel dredged to 3.7m; silting occurs in the channel.

A power plant chimney, marked by red lights, lies 1.5 mile S of the harbor entrance. A second chimney, 109m high and marked by white strobe lights, lies 0.8 mile further S. Five radio towers lie close E of Wheland Point.

Range lights, in line bearing 208.5°, lead to the harbor entrance. Both lights are shown from the S side of the harbor from triangular skeleton towers. A light is also shown from a tower on the outer end of North Wharf.

A lighted buoy is moored on the alignment of the approach range to Glace Bay Harbor.

North Wharf, on the NW side of the harbor, is 386m long and used primarily by fishing vessels. There are several smaller wharves on the SE side of the harbor.

5.15 Cape Percé (46°10'N., 59°49'W.), the NE extremity of the mainland area of Cape Breton Island, is a precipitous headland with cliffs of coal strata and sandstone rising to a height of 30m.

Schooner Rock, with a least depth of 1.5m, is the shallowest part of a reef which extends up to 0.4 mile from the N side of Cape Percé, and rocks with depths of less than 1.8m lie N and E of the headland.

Cow Reef, which dries 0.3m, lies 0.75 mile SW of Cape Percé. A lighted bell buoy is moored 0.5 mile to the E of this danger.

Cape Perce to Main-a-Dieu Harbor

5.16 Flint Island (46°11'N., 59°46'W.), 1.75 miles E of Cape Percé, is formed of broken sandstone rising to a height of 17m, with precipitous shores. Part of the island is completely separated, except by a narrow reef, and shoal water lies up to 0.5 mile in all directions from the middle of the mass.

The passage between Flint Island and Cape Percé has a navigable width of about 1 mile with a least depth 14.9m. Tide rips frequently form over the uneven bottom SW of the island, and in the channel to the W the irregular tidal currents attain a rate of 2 knots.

Flint Island Light is shown from a white octagonal tower on the largest part of the island.

Morien Bay, entered between Cape Perce and Cape Morien, about 2.5 miles S, has flats of sand and mud at its head with shoal water extending 1 mile seaward of these areas. It is not a safe anchorage, being completely open to the E winds and swell.

Ice.—Drift ice with coverage greater than 3 tenths usually persists in this area from mid February to the end of April.

Caution.—A danger area with a radius of 1 mile, lies with unexploded bombs, about 13.5 miles E of Flint Island.

Port Morien (46°08'N., 59°52'W.), for small vessels, is situated on the N shore of Morien Bay, about 3.5 miles SW of Cape Perce. It is protected by two breakwaters which enclose a small basin, 71m wide, and a public wharf. Depth in the basin is 3m. The submerged ruins of an abandoned coal pier, with a depth of 0.3m, lie about 150m SE of the breakwaters.

Port Morien Light is exhibited on the outer end of the wharf, from May 1 to December 15.

Ice appears in Morien Bay around mid-February and may persist until late April.

5.17 Cape Morien (46°08'N., 59°48'W.) is bold, with sandstone cliffs about 43m high on the SE side. It is the NE extremity of a peninsula separating Morien Bay and Mira Bay, and is connected to the mainland by a shingle isthmus and a road bridge.

Mira Bay, entered between Cape Morien and Moque Head, about 7.5 miles S, is entirely open to the E and not a safe anchorage. The Mira River, at the head of the bay, can be navigated by small craft for about 23 miles to the lakes inland.

The buoyed channel, over the bar at the river mouth is shallow, about 0.3 to 0.6m, but is navigable by small boats under power, with local knowledge and under favorable conditions. Currents are fairly strong and continue 2 to 3 miles upstream; SW currents are reported to be 1 to 2 hours before HW. Thereafter, the river is navigable to lakes some distance inland.

A bridge, with a floodlit swing span, crosses the river near its mouth; signal lights, privately maintained, are shown from a tower at the N end of the bridge. A green light means the bridge is open; a red light means the bridge is closed. The open bridge provides a horizontal clearance of 7.3m; the bridge operator is seasonally available (seasonal) on VHF channel 11.

A public wharf, 15m long, lies on the N shore of the river close within its entrance.

Mira Bay marks a change in the character of the coast and the topography of the region. The undulating land and the long ranges of sandstone cliffs, which form the N side of the bay, give way to small round hills rising among swamps, shallow ponds, and clumps of small trees.

Scatarie Island (46°02'N., 59°40'W.), the NE extremity of which is the E land off Cape Breton Island, is similar in appearance to the adjacent mainland. The island is not permanently inhabited, but is frequented by fishermen in summer. The highest summit, near its W end, reaches an elevation of 58m. A sharp-peaked hill, known as Steering Hummock, rises to a height of 45m just within West Point, the W extremity.

The S and SE coasts of Scatarie Island are indented by many coves, but these are exposed to a heavy and nearly constant swell which limits their use to only fishermen. Northwest Cove, on the N side of the island, provides a reasonably sheltered anchorage, but the holding ground is poor and it is dangerous in N winds. A submarine power cable terminates in the cove.

There is a breakwater, 62m long on the E side of the cove, with a depth of about 3m at its outer end. Eastern Harbor, at the E end of the island, lies between the NE point and Hay Island, but is shoal, rocky, and provides a very insecure anchorage within the reefs.

Scatarie Island Light is shown from a white tower, 14m high, on the NE extremity of the island. There are two white dwellings near the light and a fog signal is sounded from the lighthouse.

Cormandiere Rocks, 0.75 mile NE of the above light, are small but bold and from 2 to 6m high. There is no safe passage between them and the island. Wattie Rock, with a depth of 6.4m, lies about 1.3 miles SSE of the same light.

5.18 Main-à-Dieu Passage (46°00'N., 59°48'W.), between Scatarie Island and the mainland to the W, is intricate because of the numerous shoals in its vicinity. Dense fogs are common and the passage is dangerous during bad weather as there is no shelter from the heavy seas which result from S and E winds. It is mostly used by fishing vessels and should not be attempted by large vessels except during very favorable conditions and only in daylight hours.

Great Shag Rock, lying about 0.4 mile NE of **Moque Head** (46°00'N., 59°49'W.), and Little Shag Rock, lying about 0.3 mile NNW of West Point, are both 3.7m high, lie on each side between Moque Head and West Point and must be clearly seen to make the passage safely. The channel is further obstructed by a 7.3m patch reducing the deep water fairway to a width of 0.25 mile W of Little Shag Rock.

Bar Reef, which dries over a distance of 0.35 mile, is located about 1 mile SSW of West Point, and has on it Barstone, a large rock about 2.4m high. Helen Rock, a submerged reef, lies up to 0.6 mile ESE of Barstone and is near the edge of the channel.

Main-à-Dieu Light is shown from a white circular tower, 9.1m high, on West Point.

A lighted bell buoy is moored about 0.5 mile S of Moque Head and close S of Mad Dick Rock, with a depth of 0.6m.

A lighted whistle buoy is moored about 1 mile ESE of Barstone and about 0.5 mile seaward of Helen Rock.

Caution.—An isolated shoal, with a depth of 7.3m, lies E of the S approach to Main-à-Dieu Passage, about 2.8 miles SE of West Point.

5.19 Main-à-Dieu Harbour (46°00'N., 59°51'W.), about 0.8 mile W of Moque Point, is a semi-circular cove on the NW side of Main-à-Dieu Bay, with depths of 2.4 to 4.3m, mud bottom. A breakwater extends from both the E and W side of the harbor entrance and there are several small wharves in the cove. The approach to the harbor is buoyed, but is difficult and dangerous at times and it is advisable not to enter without local knowledge. Harbour Rock, with a depth of 2.1m, lies in the middle of the entrance and can be passed on either side.

Ice.—Ice forms in Main-à-Dieu Harbor in late January and may remain until mid-April. Field ice is present in the bay until March or April, depending on the winter.

Depths—Limitations.—The public jetty at the head of the harbor is cross-shaped and has about 30m of berthage with depths of 2.4 to 3.4m alongside.

Cape Breton Island—Southeast Coast

5.20 Cape Breton (45°57'N., 59°47'W.), the SE extremity of Cape Breton Island, is low, rocky, and covered with grass. The cape is steep-to on its NE side, but a rocky patch with a depth of 2.1m lies about 0.8 mile to the SE. Ile aux Cannes, just N of the cape, is 19m high. A reef, with an above-water rock near its extremity, extends about 0.2 mile SE from the island.

Between Cape Breton and Cape Gabarus, 15 miles to the SW, the land is of moderate height and the coast is indented with coves and small harbors. The hills in the background are about 61m high.

The Portnova Islands, a closely-compacted group, lie on the outer end of a spit with general depths of less than 11m, that extends about 1 mile S from Cape Breton. The highest island has an elevation of 14m and is precipitous. Chameau Rock, which dries 0.6m, lies midway between these islands and the cape, and is surrounded by shoal water. A rock, with a depth of 4.1m, lies about 0.2 mile SW of the Portnova group.

A lighted whistle buoy is moored about 1 mile SE of the Portnova Islands.

Tides—Currents.—A current of up to 1 knot, running WSW, is often experienced about 3 miles off Cape Breton and the coast SW. Closer to the shore its effects are not so frequently felt.

Aspect.—The coast between Cape Breton and Lorraine Head, about 6 miles SW, is indented by three small coves used as fishing harbors. These are namely Baleine Cove, Little Lorraine, and Big Lorraine, all of which require local knowledge to enter.

Wildcove Shoal, with a depth of 4.6m, and White Rock, with a depth of 5.5m, lie about 0.8 mile SE of Big Lorraine Harbor.

Little Lorraine Light is shown from a white round tower, red top, 5m high, on the W entrance point of the harbor. This light is in operation from May to December only.

A lighted bell buoy is moored about 0.5 mile SW of the entrance to Baleine Cove.

Lorraine Head (45°55'N., 59°55'W.), a rocky bluff, 20m high, is the SE extremity of a large headland forming Big Lorraine to the E and Louisburg Harbor to the W. Lorraine Rock, with a least depth of 2.7m, lies about 0.2 mile SE of the head.

Caution.—Curdo Bank, with a least depth of 18.3m, rock, lies 8.5 miles SE of Cape Breton.

Scatarie Bank, with a least depth of 21.9m, rock and coral, lies about 24 miles E of Cape Breton. The bottom W of this shoal is very irregular

5.21 Louisbourg (44°55'N., 59°58'W.) (World Port Index No. 6020) is entered between Lighthouse Point, cliffy, about 1.5 miles SW of Lorraine Head, and Rocky Island and Battery Island, about 0.3 mile to the S. The harbor is divided into Southwest Arm and Northeast Arm, the latter containing the facilities at Louisburg and also the best anchorages in the port.

In general, the harbor is used by small to moderate-sized vessels and coasters. It provides the only shelter from E winds on the SE coast of Cape Breton Island.

Ice.—In general, local ice formation in the Louisburg harbor area is of minor significance. On occasion, during the period February to April, loose gulf pack ice may drift across its approaches.

Tides—Currents.—Mean spring tides rise about 1.5m; mean neap tides rise about 1.2m. Winds can affect the tidal rise to some extent.

Depths—Limitations.—In general, vessels up to 5,000 dwt can be taken to the wharf. Drafts to 9.1m can be taken to the anchorage at HW.

The least depth in the fairway to the anchorages in Northeast Arm is 9.1m. The channel is restricted to a width of about 122m in the approach to the harbor and continues in a sharp turn which may require assistance to some single screw vessels when negotiating.

Information on the piers and jetties in Louisburg are given in the accompanying table titled **Louisbourg—Berth Information**. There is a floating "wave-breaker" moored neared the

Lighthouse Point

Louisbourg—Main Dock

public pier.

Louisbourg—Berth Information		
Berth	**Length**	**Depth**
Han Beck Sea Products Wharf	91m	4.8-5.5m
T-shaped Public Wharf	161m	6.7m
Wharf (0.1 mile NE of Public Wharf)	110m	6.1m

At the E end of town is a quay wall, 213m long, with a depth of 4m alongside.

Harbour Shoal, with a least depth of 7m, lies approximately 0.5 mile SSE of Lighthouse Point and S of the normal approach. The sea breaks on this shoal in heavy weather.

Depths of 3.3m and less lie on the S side of the channel close NE and N of Island. This shoal bank is steep-to and vessels must exercise caution not to be set down on it.

No attempt should be made by boats or vessels to pass between Rochefort Point and Battery Island, as this area is very shallow with large boulders, and it breaks heavily in any swell.

Battery Shoal, with a least depth of 5.2m, lies on the W side of the channel in the entrance to Northeast Arm. Depths of less than 9.1m surround this danger to a distance of up to 0.1 mile.

Aspect.—The Fortress of Louisburg, about 1.3 miles SW of the entrance, has been restored. The spire in the middle of the fortress is conspicuous.

Three oil tanks, each about 19m high, are situated about 0.1 mile W of the National Sea Products Jetty; two of these tanks are conspicuous from seaward.

The entrance range lights lead into the harbor from seaward. These lights are shown on the W side of Southwest Arm from triangular skeleton masts.

Pilotage.—Pilotage is not compulsory. Local pilots are available by prior arrangement. Pilots board 5 miles seaward of the harbor entrance.

Regulations.—Underwater exploration or salvage operations are prohibited without permission of the harbormaster.

Contact Information.—The Port Authority can be contacted by telephone (1-902-733-5705).

Anchorage.—The best anchorage is in Northeast Arm, in about 10.1m, mud. There is some swell after E gales, but the holding ground is good and the sea is smooth. The W shore of the arm is not well sheltered.

Caution.—During the winter, all buoys are replaced by spar buoys more able to withstand the pressure of ice. These spars cannot be depended upon in respect to their charted positions, as heavy drift ice will occasionally cause them to shift.

A dangerous wreck and two historical wrecks lie close N of the 268° range line leading into the harbor entrance. A third historic wreck lies 400m from the coast in the S harbor. Each wreck is surrounded by a restricted area with a radius of 40m.

Gabarus Bay to Michaud Point

5.22 White Point (45°52'N., 60°00'W.), low and rocky, with small cliffs, is about 7m high and is fringed by reefs. Simon Point, about 1.3 miles W, is bordered by shoal water extending nearly 0.5 mile offshore and which is steep-to on its seaward side.

Gabarus Bay, entered between White Point and Cape Gabarus, about 5 miles SW, is generally free of dangers except for some rocks near the shore. Among these is Kennington Rocks, of bare slate and 8.5m high, which lie off Kennington Cove on the N shore of the bay. Harbour Rock, a low ledge above-water, lies near the head of the bay, and a rocky shoal, with a depth of 5.4m, lies about 0.5 mile NE. The N shore is generally high and steep.

Rouse Point (45°51'N., 60°08'W.), on the S side of Gabarus Bay, nearly 3 miles NW of Gabarus Point, is a wooded peninsula about 27m high with slate cliffs. It is steep-to, except on its E side, where a reef extends seaward for about 0.1 mile. Harbour Point, about 0.5 mile W of a small peninsula with low slate cliffs, and it forms the E side of Gabarus Cove, in the SW corner of the bay. A breakwater, in a state of disrepair, extends about 108m SW from the W side of Harbour Point. The only suitable berth, 24m along the outer inside face, has a least

The Old Fortress of Louisbourg

depth of 3.7m. Foul ground lies close off the N side of the breakwater. The ruins of an old breakwater lie close N of the present one.

Aspect.—Rouse Point Light is shown from a white rectangular building situated on the point.

Gabarus Light is shown from a white square tower on Harbour Point.

Anchorage.—In Gabarus Cove, within Harbour Point, there is a fair weather anchorage for small to medium-sized vessels, in about 7.3m, sand and clay. It is unsafe here or in any other part of the bay in E or NE gales.

Cape Gabarus (45°49'N., 60°04'W.) is low and rocky, with a reef extending 0.3 mile offshore to the NE. Green Rock, 11m high, lies surrounded by reef, about 0.5 mile ESE of the cape. A lighted bell buoy is moored about 0.7 mile NE of this rock.

Caution.—Numerous ledges and rocks, above and below-water, including several islets, lie on a shallow shelf which extends up to 1.5 miles offshore between Cape Gabarus and Winging Point, 3 miles SW. Vessels should keep seaward of this area and no attempt should be made to pass inshore of any of the buoys along this part of the coast.

5.23 From Cape Gabarus to Michaud Point, the 30 miles of coast is low, rocky, and barren in appearance. There are many lakes and ponds near the shore, protected by gravel beaches and some rocky islands and ledges. Occasionally, there are reddish clay cliffs 21 to 27m high, but from seaward there are few distinguishable features.

A current of up to 1 knot, running WSW, is often experienced about 3 miles off this coast. It is not so frequent closer to shore.

Guyon Island (45°46'N., 60°07'W.), about 1 mile S of Winging Point, is low and bare of trees. Shoals extend up to 0.4 mile E of the island, and a rock, awash, lies about 0.5 mile W of it. A light is shown from a white tower near the center of the island.

A lighted whistle buoy is moored about 2.8 miles E of Guyon Island.

Fourchu Bay (45°46'N., 60°11'W.), which lies between Guyon Island and Fourchu Head, affords no shelter and is dangerous to approach without extensive local knowledge. The shores of the bay are low and marshy, a general trait of the SE coast. Numerous rocks, shoals, and reefs lie throughout the bay, and Gabarus Round Rock, 6.7m high, lies on a shoal about 1.5 miles SW of Guyon Island.

Fourchu Head (45°43'N., 60°14'W.), low and connected to the mainland by a breakwater, forms the S side of the entrance to Fourchu Inlet. Fourchu Rock, 10.7m high, lies about 1.5 miles ENE of the head is narrow, covered with moss, and conspicuous, and has several shoal patches in its vicinity. Flat Ledge, which dries 0.6m, lies 0.75 mile ENE of the head and divides the entrance to the inlet into two channels.

Fourchu Harbor, at the head of Fourchu Inlet, is entered by a buoyed channel. The channel varies in width from 24 to 100m, with rocks and shoals on either side and a least reported depth of 1.5m, which leads over the bar and into the harbor.

The L-shaped public pier in Fourchu Harbor is 52m long, with a berth 28m long and a depth of 3m alongside the pier head. Range lights, in line bearing 255°, lead into the inlet but local knowledge is required in the approach.

Fourchu Head Light is shown from a white circular tower with two red horizontal bands on Fourchu Head. A lighted bell

buoy, marking the W approach, is moored about 0.5 mile E of the light.

Pot Rock, with a least depth of 3m, lies 1.25 miles SE of Fourchu Head and breaks in heavy weather. A lighted whistle buoy is moored close S of Pot Rock.

Caution.—A submerged power cable lies between Guyon Island and Belfry Gut, about 3 miles NNE of Fourchu Head.

5.24 From Fourchu Head the coast trends SW for about 2.5 miles to Framboise Cove, an open bight which affords no shelter because of its low coast and marshy interior. Framboise Shoal (Haliburton Shoal), with a least depth of 5.2m, lies with two heads across the entrance of the cove and several other shoal patches lie within. Large vessels should keep clear of this area.

Capelin Cove, about 8.5 miles SW of Fourchu Head, has general depths of 3 to 5m and affords shelter to boats in NW winds.

St. Esprit Island (45°37'N., 60°29'W.), partly wooded and 9m high, is joined to the mainland by a partly drying reef of rocks and shoals. Although there is a boat passage between the island and the shore, no vessel should attempt it. A light is shown from a skeleton tower on the NE end of the island.

Note.—The E boundary of the Strait of Canso and Eastern Approaches Vessel Traffic Services (VTS) Zone is established by a line from the S shore of Cape Breton Island at position 45°38.4'N, 60°29.3'W, bearing 181° to the Territorial Sea Boundary. The VTS Zone regulations are mandatory.

Caution.—Numerous coastal dangers lie from about 2 miles E of St. Esprit Island, SW to the vicinity of Michaud Point; only small vessels with local knowledge should attempt to make an approach hereabouts.

Bad Neighbour Shoal, with a least depth of 1.2m, lies 1.5 miles SW of St. Esprit Island, but it only breaks in bad weather. A lighted whistle buoy is moored about 0.8 mile S of the shallowest part of Bad Neighbour Shoal.

Black Breaker Rock, with a least depth of 2.7m, lies midway between St. Esprit Island and Michaud Point, and about 0.8 mile offshore.

L'Archeveque Cove, 3.5 miles W of St. Esprit Island, provides shelter for small craft but nearly dries in the approach. Buoys mark the channel from about 1 mile offshore, however, local knowledge is recommended.

The Grand River, entered between Black Point, low and sandy, and Red Head, 21m high, about 4.8 miles W of St. Esprit Island, is available only to small craft with local knowledge. The river mouth is narrow and obstructed by a bar with a depth of 0.9m, but the channel within and a wharf on the E shore carry depths of 1.8m. The current is rapid in the river and its entrance. On the E shore of the river, near the mouth, there is a wharf 61m long extending to a depth of 1.8m.

The Basque Islands, three in number, lie 1.5 miles ENE of Michaud Point and are low and surrounded with shoal water. Basque Shoal, with a least depth of 6.4m, lies about 1.5 miles ESE of Michaud Point and breaks in heavy weather.

All vessels should give Basque Shoal and Michaud Point a wide berth especially in thick or heavy weather.

Michaud Point and the coast W of it are described beginning in paragraph 4.13.

The Bras d'Or Lakes

5.25 The Bras d'Or Lakes are actually an inland sea located within the confines of Cape Breton Island and divided into two main bodies of water that are completely protected by relatively-high rolling hills. There are two natural entrances to the lakes from the N, and a ship canal and lock system from the S.

During the navigational season, approximately May to December, the various passages and channels are buoyed and lighted. All buoys are removed before heavy ice sets in and relaid after the break up. In proceeding towards the SW, red buoys are left on the starboard side.

Tides—Currents.—The tidal rise at the N entrances to the Bras d'Or Lakes is 0.9 to 1.5m, but within the entrance it decreases rapidly to 0.4m and then 0.2m in the lakes. The water levels in the arms and the S lake are independent of the tide, but fluctuate 0.3m or so due to weather conditions.

Depths—Limitations.—The Bras d'Or Lakes are navigable throughout by vessels not exceeding 5.2m of draft. This draft is controlled by the sills of St. Peters Canal, which have a depth of 5.5m. The canal also restricts lengths to 82.3m for vessels transiting the locks.

Vessels of moderate size can enter by Great Bras d'Or and navigate in most of the N lake channels. Pilots have taken drafts up to 8m over the bar at HW during good weather conditions, but extensive local knowledge is necessary for vessels of this size.

Pilotage.—Pilotage is compulsory for merchant vessels. Vessels must report their ETA by radiotelephone or radiotelegraph to Pilots, Cape Breton, at least 12 hours before ETA at the pilot station. Such ETA transmissions must be confirmed or corrected not more than 4 hours prior to the new ETA. Time is required in UTC.

Vessels proceeding to Great Bras d'Or and requiring a pilot board them at the **Sydney Pilot Station** (46°18.5'N., 60°07.5'W.).

Vessels proceeding to St. Peters Canal and requiring a pilot board them at the Strait of Canso Pilot Boarding Station in Chedabucto Bay in position 45°29'30"N, 61°11'06"W. The pilot boats are equipped with VHF.

Caution.—Fish cultures are established in various coves throughout the lake system. These cultures are suspended from rafts and may be moved without prior notice.

Great Bras d'Or

5.26 Great Bras d'Or is the principal of the two N channels, one on either side of Boularderie Island, leading to the Bras d'Or Lakes. The channel is entered between Cape Dauphin and **Table Head** (46°20'N., 60°22'W.), and is buoyed over a bar with irregular depths of 0.6 to 3.4m, extending NE from Carey Point on the W side of the narrows. The least charted depth in the buoyed channel is 10.6m.

Tides—Currents.—The normal rate of the current is 4 to 5 knots. In the spring after a NE gale, the level of the Bras d'Or Lakes may be raised considerably, increasing the rate to 6 knots and forming rips and eddies, especially off Carey Point.

The tidal currents do not set straight through the channel and generally are the reverse of the tide. The outgoing current sets

to the N after passing Carey Point and generally flows on the rising tide. The incoming current sets towards the E side of the channel and flows on the falling tide.

The entrance to Great Bras d'Or should be made at slack water and should not be attempted without local knowledge.

Aspect.—Range lights, best seen on the chart, stand on Noir Point and help lead through the buoyed channel.

Black Rock Point Light is exhibited from a white square tower, 11m high.

A sector light is shown from a red skeleton tower situated close SW of Black Rock Point Light. The white sector indicates the preferred channel out of Great Bras d'Or.

Within the entrance, Great Bras d'Or runs in an almost straight line to the SW and is generally deep throughout with depths greater than 10m in the fairway. The long reaches allow a considerable swell and anchorage is insecure, due to the currents, except in the sheltered coves.

An unbroken range of hills, in places 300m high, continues along the NW side from Cape Dauphin to Big Harbor, 15 miles to the SW. High cliffs rise along the W side of Kelly Cove and continue for 1.5 miles to Point Jane.

Depths—Limitations.—There is a public wharf close S of Duffus Point, Boularderie Island; another public wharf is located at New Campbellton, on the E side of the cove.

Big Bras d'Or—Berth Information		
Berth	**Length**	**Depth**
New Campbellton Public Wharf	20m	4.3m
Big Bras d'Or Public Wharf (outer face)	86m	3.4-4.6m
Big Bras d'Or Public Wharf (inner face)	25m	1.4-2.7m
Big Bras d'Or Public Wharf (southern section)	27m	3.7m

Anchorage.—Kelly Cove, on the W side of Kelly Point, just within the entrance, has depths of 3.7 to 7.9m and is sheltered from all but SW winds. Good anchorage, in 9.1 to 11m, sand, can be obtained off the entrance out of the main tidal currents.

A bridge and causeway, marked by obstruction lights, crosses Great Bras d'Or close NE of the Seal Islands. The navigational span has a vertical clearance of 36m. Strong tidal currents were observed on both the rising and falling tides in the vicinity of the bridge.

A power transmission cable crosses Great Bras d'Or close N of **Munro Point** (46°10'N., 60°34'W.). The overhead clearance of the cable is about 35m.

5.27 The **Seal Islands** (46°14'N., 60°30'W.) are two low and wooded islets separated from the hilly shore NW by a narrow cove closed at its N end by the bridge causeway. Seal Reefs, with a least depth of 0.7m, lie off the E side of the Seal Islands and partly extend under the main span of Seal Island Bridge on the NW side of the ship channel. Buoys mark the NE and SW limits of the reef adjacent to the channel.

Lime Rock, with a least depth of 0.6m, lies on the E side of the channel, about 0.2 mile SW of McLean Point. A lighted buoy is moored close N of the rock.

Otter Harbour (46°13'N., 60°32'W.) is located on the W side of Great Bras d'Or, about 1.5 miles above the Seal Islands. It is sheltered by Otter Island, 6m high and wooded to the S, and by Harbour Point and the islands off it to the N. There is good anchorage for small to moderate-sized vessels, in depths of 9 to 10m, mud, but the available space is only 0.2 mile across.

A light is shown from a square skeleton mast on a white shed situated on an islet in the middle of the head of the harbor. The white sector indicates the preferred channel. The light is maintained from June 1 to October 31.

Man of War Point (46°11'N., 60°33'W.) lies on the E shore of Great Bras d'Or, about 1.8 miles SSW of Otter Island.

Big Harbour and Bevis Point, about 3.5 miles SW of Man of War Point, are both located on the W side of Great Bras d'Or. The former ferry wharf near Big Harbour is in ruins. The former cable ferry wharf and the land surrounding it have been developed into the Ross Ferry Marine Park. The wharf has been reconstructed for recreational boating use. Water, electricity, showers and sewage pump-out are available. The Park features picnic shelters and walking trails for public use, and is operated by the Ross Ferry Stewardship Society.

Anchorage.—Secure anchorage is available towards the N shore, in a depth of 13m, near the entrance, decreasing to 7m at a position about 0.5 mile farther W, where the harbor divides into two shallow arms.

5.28 **Mackenzie Point** (46°07'N., 60°39'W.), lying about 2 miles SW of Big Harbour, shows a light from a skeleton mast close to the shore.

Kempt Head (Kemp Head) (46°04'N., 60°40'W.), about 2.5 miles SSW of Mackenzie Point, is the SW extremity of Boularderie Island and divides Great Bras d'Or from St. Andrews Channel. Coffin Shoal, with depths of less than 1.8m and with a rock, awash near its center, lies about 0.5 mile offshore between the head and Coffin Point, about 1 mile NNE.

A lighted buoy marks a shoal with a depth of 6.4m about 1.5 miles NNW of Kempt Head.

The description of Great Bras d'Or continues in paragraph 5.36.

Little Bras d'Or

5.29 Little Bras d'Or, 4.4 miles long, is narrow and tortuous. It leads along the E side of Boularderie Island to St. Andrews Channel, but is restricted at its S end by a highway bridge with a vertical clearance of 6.4m.

The N entrance, 1.5 miles S of **Point Aconi** (46°20'N., 60°18'W.), which is marked by a light, is closed by breakers when there is a heavy sea, especially when the tidal currents are setting against the wind. There is a depth of 3.8m on the range line in the entrance channel and several places of similar depth within, however, the channel is very narrow and the deepest water is not always near the center. The fairway is not buoyed, except near the entrance, and once within there are few aids to navigation.

In general, Little Bras d'Or is only used by coasters and fishing vessels proceeding to Crawley Brook or the Alder Point fish plant, and by small craft and fishing boats proceeding to

and from St. Andrews Channel. Local knowledge is strongly recommended.

Tides—Currents.—Tidal currents run in a similar fashion to those of Great Bras d'Or, except that the constant narrowness of the Little Bras d'Or produces a severe tidal effect at maximum ebb that precludes anything but powerful small craft during that time.

Depths—Limitations.—At the mouth of Crawley Creek, on the W side of the entrance, there is a government wharf 57m long with an L-head 32m in length, with a depth of 2.7m on the N face and 2.4m on the S face.

The public wharf on the E side of the entrance has a U-shape, with alongside depths of 0.7 to 3.2m.

South of the entrance there are many wharves along the shores of Little Bras d'Or; however, most of them are in ruins or poor condition.

The highway bridge at the S end of Little Bras d'Or has a vertical clearance of 6.4m and is marked by two white lights on each side which indicate the N and S channels.

Aspect.—A range light, located at the head of Spanish Bay, leads to the N entrance of Little Bras d'Or. A directional light standing on Adler Point (46°18'N., 60°17'W.) leads through the N entrance of Little Bras d'Or. Local knowledge is essential for using this channel.

Caution.—The course change necessary for changing from the range lights to the directional light must be carried out quickly, as the water shoals rapidly to the W.

St. Andrews Channel

5.30 Burchells Point (Chapel Point) (46°15'N., 60°18'W.), a long curving sandy ridge, lies on the E side of the channel at approximately the delineation of Little Bras d'Or and St. Andrews Channel. A wharf, reportedly in a state of disrepair, lies close SE of the point. Small craft can anchor, in 2 to 3m, in a cove E of the point.

A shoal, with a least depth of 1.5m and marked by buoys on its W side, lies about 0.8 mile SW of Burchells Point. The channel lies between this shoal and a buoy marking the shoal water off Codnor Point, about 0.5 mile WSW. Depths of less than 9.1m extend about 0.4 mile S of Codnor Point, and about 0.3 mile S of Groves Point, lying about 1 mile SW of Codnor Point.

St. Andrews Channel, to the SW of Groves Point, lies along the SE side of Boularderie Island and is generally deep throughout with depths of over 183m in places. The shore banks are mostly steep-to and fall off rapidly to deep water, making anchorage in most parts of the channel difficult for anything but small craft.

A conspicuous radio tower is situated on Mount Cameron, about 0.9 mile E of the S end of Long Island.

The NW shore of St. Andrews Channel is formed of an almost continuous bluff ranging from 3 to 23m high, while the SE shore is sloping with numerous coastal sand bars. The prevailing SW-NE winds can affect this arm of the lakes system considerably, with the available fetch allowing a considerable sea.

Point Clear Light (46°05'N., 60°36'W.) is shown from a triangular skeleton tower.

Anchorage.—Long Island (46°11'N., 60°25'W.), on the E side of St. Andrews Channel, is separated from the shore by a narrow steep-sided passage in which only small craft can obtain anchorage. The easiest entrance is from the N, but local knowledge is recommended as the bottom is irregular with deep holes. A microwave tower on Mount Cameron, about 1 mile E of the S end of Long Island, is conspicuous.

Island Point Harbour is entered close W of Island Point, at the N end of a narrow ridge about 5 miles SW of the S end of Long Island. Small craft only can anchor here in sand and mud; the anchorage is not safe in NE winds.

Caution.—A reef, with a least depth of 0.9m, extends about 0.5 mile offshore at Beaver Cove on the E side of the channel, about 1.8 miles ESE of Point Clear.

St. Patricks Channel

5.31 MacKay Point (46°04'N., 60°44'W.) and Red Point, about 1.8 miles NE, form the S and N entrance points, respectively, of St. Patricks Channel, the W channel of the N lakes. This channel trends approximately 20 miles to the SW and is roughly divided near its center by a constricted passage known as Little Narrows.

St. Patricks Channel is navigable throughout by vessels of moderate size and contains the only commercial facilities in the Bras d'Or Lakes region. The shores, which are moderately high, rise to hills of considerable elevation a short distance inland; however, during bad weather the channel is subject to heavy wind squalls.

There are no tidal currents and little tidal rise, but the water level is affected by prevailing winds, being highest during NE winds and lowest during SW winds. The range rarely is more than 0.3m.

There are good anchorages in Baddek Bay, Cow Bay, and Nyanza Bay on the N side, and in the Washabuck River on the S side. The channel throughout also provides fair anchorage with good holding ground.

Spectacle Island, 5.8m high, lies 0.5 mile N of MacKay Point and roughly divides the entrance of St. Patricks Channel in half. The island is a bird sanctuary. Shoal water more or less surrounds the island and extends to the NE for 0.5 mile, with a reef closer to its N shore. Bone Island lies close to the shore, about 0.5 mile W of Spectacle Island, and has shoal water extending around it and to the NNE for 0.4 mile.

An isolated shoal, with a least depth 8.5m, lies near the middle of the channel, about 0.5 mile NNW of the NW extremity of Spectacle Island.

A lighted buoy lies at the N end of the shoal water N of Bone Island. Buoys mark a narrow channel, with a depth of 9.1m, between Bone Island and Spectacle Island.

5.32 Baddeck Harbour (46°06'N., 60°45'W.) lies between Kidston Island, narrow, wooded, and 15m high, and the mainland NW. The preferred entrance is the channel NE of Kidston Island.

Aspect.—Kidston Island Light is shown from a white square tower on the NE point of the island. A light is also shown on the SW end of the island from a white circular tower with red bands.

Depths—Limitations.—The harbor is usually closed by ice from the middle of January to the middle of April. A ware-

Baddeck Harbour

Kidston Island Light

house stands on the jetty.

The white steeple of the United Church in the middle of Baddeck is conspicuous.

Baddeck Harbour—Berth Information		
Berth	**Length**	**Depth**
Public Wharf (outer face)	—	7.2m
Yacht Club Wharf	20m	0.2-2.2m

Anchorage.—The recommended anchorage at Baddeck is in a depth of 10-16m, good holding ground of mud and sand, with the light on Kidston Island bearing about 135°. Vessels should moor. Anchorage is also available near the head of Baddeck Bay according to draft. Care should be taken to avoid a submarine cable which is laid across the SW part of the harbor.

5.33 Stony Shoal, which dries at LW, lies 1 mile WSW of the W extremity of Kidston Island. It is marked on its S side by a lighted buoy and is dangerous to approach.

Crow Point, about 1.5 miles SW of Kidston Island, is connected to the mainland by a narrow above-water ridge. Shoal water, marked by a buoy, extends up to 0.25 mile off the point, and there are shoals along the length of the S side of the channel inside a line drawn between the lighted buoy N of Bone Island and Birch Point, about 4.5 miles WSW.

Murphy Point, about 2.5 miles WSW of Crow Point, is 15m high side. McIvor Cove, on the SE side, has a depth of 3m and is only available to small craft.

A rock, with a depth of 1.8m, lies about 0.3 mile NE of Murphy Point and a buoy is moored about 0.1 mile farther NE.

A government wharf is situated at Washabuck Center, about midway between Crow Point and Murphy Point. The wharf projects 67m from the shore and has an L-head 12m long, with a depth of 3m alongside. It should be approached from the NW as a sand bar extends over 0.2 mile from the shore to the NE.

The Washabuck River, entered by a deep, but narrow, buoyed channel, is located between Murphy Point and Birch Point and provides a snug anchorage in its outer part, with depths of 7 to 12m, sand and mud. Islets and reef border the entrance channel and caution is necessary. There is a pier, with a depth of 2.7m at its head, situated in the upper part of the river, about 2 miles SW of the entrance.

Brian Point (46°04'N., 60°52'W.) extends approximately 0.5 mile NE from the mainland and is mostly low and tree-covered.

Cow Bay, on the N side of St. Patricks Channel opposite Brian Point, is entered over a shingle bar with a least depth of 6.7m. There is good anchorage off the N shore of the bay, in a depth of about 12m, mud.

Nyanza Bay is entered between Cow Point and Cranberry Point, about 1.5 miles W of Brian Point, and is very shallow off the mouths of the two rivers that enter it. A channel, close W of Cow Point, leads NNE from the entrance to a wharf, at the town of Nyanza, which is about 79m long with a depth of 4.6m at its head. There is good anchorage, in depths of 9.1 to 12m, mud, about 0.3 mile S of the pier.

5.34 **MacIvers Point** (46°02'N., 60°56'W.), broad and about 15m high, is connected to the mainland by a narrow isthmus and restricts St. Patricks Channel to a width of 0.5 mile between itself and Hume Island to the NW.

MacIvers Bank, with a least depth of 2.1m, rock, extends up to 1 mile SW of MacIvers Point. Bell Rock, which dries 0.6m, lies about 0.5 mile W of the same point, with a bank having 6.1m lying between. The channel is restricted by these dangers and their surrounding shoals; however, a buoyed fairway, with a least charted depth of 9.4m, has been established leading SW from MacIvers Point.

Two pairs of range lights are used to navigate the channel W of MacIvers Point. The first pair, in line bearing 195.5°, is shown from two skeleton towers near Hazeldale.

The MacIvers Point Range Lights, in line bearing 066.5°, astern, lead through the second part of the channel and are shown from two masts on the shore.

Donald Williams Point (Green Point), wooded, is located on the W side of St. Patricks Channel, about 2.5 miles SW of MacIvers Point. The channel between MacIvers Bank and the shoals off Donald Williams Point opens up to a wide deep ba-

sin with a width of almost 2.5 miles.

Little Narrows, which is only about 90m wide at its narrowest point, is entered between Donald Williams Point and the shore SE, and separates St. Patrick Channel from Whycocomagh Bay, to the SW. There are depths of 9.4m, but pilotage is required for merchant vessels.

Eel Shoal, with a least depth of 1.2m, lies from 0.75 to 2.5 miles ENE of Donald Williams Point and divides the entrance to Little Narrows into two channels. The N or main channel is buoyed and carries depths of 10 to 14m. The S channel is also buoyed, but has a least charted depth of 6.7m.

Depths—Limitations.—Little Narrows Gypsum Company Pier projects from the SE shore, about 1 mile NE of **Little Narrows Light** (46°00'N., 60°59'W.). The berth is 144.8m long, with a maximum depth alongside of 8m. The pier is used only for loading gypsum.

Aspect.—Two lights situated on the S shore of Little Narrows, about 0.8 mile S of Donald Williams Point, when in line bearing 206.5°, lead through the N channel.

Little Narrows Light is shown from a white circular tower on the SE shore of the narrows, about 1 mile SW of Donald Williams Point.

The large galvanized buildings of the gypsum company and the scars of the strip mining operation in the hills SE are conspicuous and form a good mark from MacIvers Point.

Caution.—A cable ferry crosses Little Narrows approximately at its narrowest point. The cable, which is fixed to both shores, drops to a 3.7m loop at the center when the ferry is docked on either side. When the ferry is underway the cable is pulled tight and is situated just below the surface, making passage impossible.

Vessels approaching the narrows should proceed at slow speed to avoid damage to the ferry and piers from wash. The ship's whistle should be sounded in time to warn the ferry not to get underway.

There is a government wharf close SW of the ferry wharf on the SE shore of the narrows. The pier is in a state of disrepair, but reported usable. It has a berth of 12m at the pier head and a depth of 4.9m alongside. A dangerous sand bar juts into the channel about 240m SW of this wharf.

An overhead power cable, with a least vertical clearance of 36m, crosses the narrows near the S entrance. A submerged cable also crosses the narrows close S of the government wharf.

The channel buoys are lifted after each navigational season. The ranges may be slightly altered when the buoys are relaid.

5.35 Whycocomagh Bay (45°58'N., 61°07'W.), the head of St. Patricks Channel, is entered from Little Narrows and is available to small vessels with drafts to about 3.7m.

The channel widens after passing through Little Narrows and maintains considerable depth until about 3.5 miles WSW of the Narrows. The entire N shore of the channel is high and steep, rising to over 229m in several places, only 0.3 mile from the water's edge.

Whycocomagh Light is shown from a skeleton tower on Lovett Point, on the N shore of the channel, about 4 miles W of Little Narrows.

A prominent church (45°58'N., 61°07.9'W.) is situated on the W shore of the inlet leading to Whycocomagh village.

Indian Island, about 84m high and wooded with a rounded peak, lies at the head of the bay and is steep on its E side. The island and Salt Mountain, a conspicuous dome 240m high, about 1.3 miles to the NE, can produce a strong draft into the bay on E winds, which on occasion has caused considerable damage in the harbor.

Depths—Limitations.—There is a government wharf on the E side of Whycocomagh Bay is 21m long, with alongside depths of 3.5 to 4.3m. Part of the berthing head is in ruins and not safe. The buoyed channel has depths of 3 to 3.7m, but may silt. Pilotage is compulsory for merchant vessels.

Anchorage.—There is a sheltered deep anchorage on the SW side of **Indian Island** (45°57'N., 61°07'W.), at the head of the bay. Shallower anchorage can be found on the S side of MacInnis Island.

Great Bras d'Or—Southern Part

5.36 The S part of Great Bras d'Or is actually a junction of the N lakes area, with St. Andrews Channel to the NE, the N part of Great Bras d'Or to the N, St. Patricks Channel to the NW, and Barra Strait to the S. The channel is wide and deep with only Burnt Shoal, MacPhee Shoal, Big Shoal, and Barra Shoal of primary concern. The W shore is high and steep, the E more sloping and sandy.

Burnt Point (46°04'N., 60°44'W.), about 0.5 mile S of MacKay Point, is bordered by shoal water. The land W of the point rises rapidly and then levels off at a height of 206m about 1 mile SW. Burnt Shoal has a depth of 6.1m and lies unmarked about 0.8 mile ENE of the point. An 8.2m patch lies 0.5 mile farther NNE.

Maskells Harbour (46°01'N., 60°47'W.), an excellent refuge for small craft, is entered between Ponys Point, about 2 miles SSW of Burnt Point, and Gillis Point, about 0.4 mile further SW. A reef, marked at its N end by a buoy, extends about 0.2 mile NE of Gillis Point leaving a channel with a depth of 6.7m between it and Ponys Point..

On the N shore, 0.3 mile inside the entrance, is a long steep-to shingle spit which protects the harbor within. There are depths of 7m in the channel up to 0.2 mile W of the spit; small craft can anchor, in depths of 7.3 to 7.6m, mud, within this area and be protected by high, wooded hills to the N.

Blacksmith Point, about 2 miles SSW of Gillis Point, is low and rock-strewn, with salt ponds backing the shore. Shoal water, with depths of less than 9.1m, extends up to 0.5 mile E and 0.75 mile SE of the point.

MacPherson Point, about 10.7m high, lies 1.25 miles S of Blacksmith Point and is bordered by shoal water to a distance of 0.3 mile. Grass Cove lies N of the point, between the above shoals, but the pier within is in ruins.

5.37 Barra Shoal (45°58'N., 60°48'W.), rock, with a least depth of 4.6m, lies directly across the entrance of Barra Strait and a little over 0.75 mile SE of MacPherson Point. Vessels can pass W or E of this shoal, although the latter channel is wider and deeper.

Black Point (46°01'N., 60°40'W.), low and rocky, is backed by salt ponds and lies at the S end of two silted coves. There is a steep hill, rising to about 213m, 1.25 miles S of the point.

MacPhee Shoal (Macphie Shoal), with a depth of 5.5m, rock, lies unmarked about 1 mile N of Black Point.

Big Shoal, the shallowest part of which, with a depth of 1.2m, lies about 2 miles W of Black Point, covers an area of nearly 1 square mile and is divided into two shoal heads.

Christmas Island (45°59'N., 60°45'W.) is a long curving spit of low land connected to the shore at its E end and enclosing a pond. Much of the spit is marshy, but some rocks border its NW side.

Anchorage.—There is good anchorage, except in NE winds, in about 15m, mud, about 0.5 mile SW of the W extremity of Christmas Island. The Neilban Cove rail and highway bridge lies about 0.3 mile SSW of the anchorage area.

Barra Strait

5.38 Barra Strait is a natural formation which leads between Great Bras d'Or and Bras d'Or Lake, the S and largest body of water in the Lakes area. The shores of the strait are high and bold, with the E side rising to over 152m just a short distance inland. The channel is deep in the fairway, except for the shoals bordering **Uniacke Point** (45°58'N., 60°48'W.) and Kelly Point which restrict the width of the N entrance to about 0.3 mile.

Tides—Currents.—The flood current sets SSE and the ebb current sets NNW in the vicinity of the rail bridge. This puts both currents diagonally across the channel at a rate of about 3 knots at mid-tide.

Depths—Limitations.—A public L-shaped jetty, with a length of 87m and an alongside depth of 4.8m, extends from the shore of Iona village, close N of **Uniacke Point** (45°58'N., 60°48'W.). The depth alongside the head of the jetty is 4.6m.

Aspect.—There is a church in the town of Iona close W of the root of the pier.

The Canadian National Railway Bridge, constructed of steel with six spans supported by stone foundations, crosses Barra Strait from Uniacke Point to Kelly Point. The swing span, near the Kelly Point side of the strait, forms a ship channel 31.7m wide, with a minimum depth of 8m on the W side of the pivot pier. A groin, the outer end of which is submerged and in ruins, extends to the SW of the pier and serves to break the force of the tidal current setting across the opening. A buoy is moored about 90m SW of the submerged head. A bascule bridge extends across Barra Strait about 70m N of the railroad bridge. The bascule opening is in line with the swing span of the railroad bridge. The design clearance of the bascule bridge in the closed position is 9m.

White lights are shown from each side of the ship channel.

A white light is shown from the center of the swing span on the bridge. Immediately below this light, a red light is shown when the span is closed and a green light is shown when the channel is open.

During the navigation season, the swing span operates from 0700 to 2300, except for continuous operation during the months of July and August.

Caution.—The flood, or S current, enters the channel at the swing span diagonally to the channel axis and then is deflected off toward the SW. Considerable caution is necessary when proceeding with the current as vessels have been carried into the pivot pier by not maintaining enough speed for good steerageway.

No signal is made from the bridge to indicate when vessels may pass through and the bridge may remain closed until a vessel is close to it.

5.39 **Derby Point** (45°56'N., 60°48'W.), the SE entrance point of Barra Strait, is formed of cliffs about 15m high. A light is shown from a skeleton tower, 6.5m high, situated just within the point.

Hector Point, a little over 0.75 mile WNW of Derby Point, is bold and cliffy, and rises to 91m a short distance inland.

Kelly Point and Hector Point, in line bearing 223°, leads SE of Barra Shoal. Uniacke Point, bearing 238°, leads between Barra Shoal and the shoals off Kelly Point. Kelly Point and Derby Point Light, in line bearing 187°, indicates the turning position for the bridge channel.

Bras d'Or Lake

5.40 Bras d'Or Lake is the largest of the Bras d'Or system, and is entered from the N by Barra Strait or from the S by St. Peters Inlet. The lake measures approximately 12 miles across in a N-S direction and 37 miles from the extremities of the East and West Bays. The depths in the lake are very irregular with numerous shoals in the coastal regions, however, the central part is generally deep and clear, the depths ranging from 14.6 to 73m, with a maximum charted depth of 157m with exception of Cod Shoals and Kelly Shoals. There are many islands in the W and S parts of the bay.

Cod Shoals (45°55'N., 60°49'W.) extend for 1.5 to 3 miles S of Barra Strait, and are extensive rocky banks, with a least depth of 6.2m. Hector Point and Uniacke Point, in line bearing 026°, lead 0.5 mile W of these shoals and through the channel between them and McKinnons Shoal, which is a rocky bank with a least depth of 5.4m extending 1.5 miles SE of McKinnons Point.

A yellow ODAS lighted buoy is situated about 3 miles S of Cod Shoals.

5.41 **Bras d'Or Lake—West side.—McKinnons Harbour** (45°55'N., 60°56'W.) is approached between McKinnons Point, about 4.5 miles WSW of Hectors Point, and Campbell Island, low and wooded, about 1 mile further to the SW. The harbor is not accessible. The entrance channel, 1.4 miles W of McKinnons Point, has filled and is crossed by a narrow pebble beach.

A triangular skeleton tower is situated on the W side of the entrance to McKinnons Harbor.

North Basin and Denys Basin are two landlocked inlets entered through the narrow, tortuous channel between McKinnons Point and Campbells Island. Local knowledge is necessary for safe navigation. A depth of 7.3m can be carried through the channel, and in part of the basins where there is good anchorage. A convenient position in Denys Basin is N of Allans Cove, in 5m, mud, 0.25 mile from the shore. The River Denys enters the head of Denys Cove, and a depth of 2.4m can be found up the river for 2 miles.

Good shelter is available in Blues Cove, at the W extremity of North Basin. A wharf extends 37m from the S side, the outer 10m has depths of 2.1m on either side.

There is some current in and out of the narrow parts of the channel leading to the basins, but it seldom exceeds 0.5 knot, and the direction depends mainly on the wind. Rising water

and incoming flow may be expected with N winds; falling water and outgoing flow may be expected with S and SW winds.

Malagawatch Harbor (45°52'N., 60°57'W.), entered between Malagawatch Point, about 2.5 miles SE of Campbells Island, and Militia Point, 2.5 miles further SW, runs to the NW towards Denys Basin, from which it is separated by a low narrow neck of land. The harbor is entered between Gillis Shoal and Sheep Island. The channel width is about 0.3 mile. At the first narrows, 1 mile above the entrance, the channel is only 135m wide. Inside the narrows the harbor opens into a basin, with general depths of 7.3 to 11m. There is anchorage on the N side of the basin, in depths of 7.6 to 12.8m. Local knowledge is necessary to enter this harbor. From the N side of this basin, a narrow channel with a depth of about 7m leads to the inner harbor.

Gillis Shoal (45°51'N., 60°55'W.) has a least depth of 3m and is surrounded by deep water. The best route into Malagawatch Harbor is S of this shoal. Pellier Point Reef, with a depth of 2.4m, extends nearly 0.4 mile E of Pellier Point. A small rocky patch, with a depth of 8.2m, lies 0.75 mile ESE of Pellier Point.

Pellier Harbour lies between Pellier Point and the peninsula of Milita Point, and can be entered either side of Militia Island. The channel to the NE of the island is preferable. A depth of 6.4m can be carried into the small harbor, but local knowledge is necessary.

West Bay

5.42 West Bay is entered between Militia Point and **Poor Islet** (45°47'N., 60°56'W.), 3.5 miles to the S, and contains many islands and shoals. The depths throughout are irregular. A range of steep, wooded hills, 180 to 270m high, runs along the whole of the N shore.

The dominant features of the S shore are cliffs of red sand and clay, with some sandstone, alternating with shingle beaches which enclose ponds or unite peninsulas with the mainland. Inland 0.5 to 1 mile, a range of wooded hills rises to an elevation of 180m. A number of settlements are situated on the slopes of the hills or between them and the shore.

Paddle Shoal, with a least depth of 2.8m, lies 1.75 miles SW of Militia Point. Outer Shoal, with a depth of 6.2m, lies 0.5 mile S of Paddle Shoal. Nameless Shoal has 3.2m and lies 0.75 mile S of George Island, with George Shoal, with a least depth of 2.6m, extending 0.4 mile S of the island. Middle Shoal, with a least depth of 4.6m, lies 0.7 mile S of Nameless Shoal.

MacLeod Shoal, with a depth of 6.8m, lies between Middle Shoal and the reef extending from MacLeod Point. A buoy is moored 0.2 mile NW of MacLeods Point and marks shoals close off shore. Pringle Shoal, with a least depth of 2.6m, lies 0.5 mile N of Pringle Island and close SW of MacLeod Shoal. A buoy is moored on the N side of Pringle Shoal. Ross Shoal, with a least depth of 5m, lies about 0.7 mile WNW of Pringle Shoal.

Caution.—A shoal was discovered, with a least depth of 4.6m, lying approximately 0.5 mile W of Pringle Shoal, and covering a considerable area in the vicinity.

5.43 West Bay—North side.—Little Harbour, entered about 1.3 miles WNW of Militia Point, has an entrance barely 90m wide, with depths of 5 to 8.2m. A narrow isthmus separates this basin from Malagawatch Harbor. A rocky bank, with a least depth of 5m, lies 0.5 mile S of the entrance to Little Harbour.

Entrance may be made in mid-channel between sand bars extending from each side.

Anchorage.—Good small craft anchorage is available in two coves opening to the S, on the E, and on the W side of the harbor, in depths of 2 to 5m.

A group of wooded islets, about 15m high, with cliffs of sand, clay, and boulders, and connected by shingle beaches or separated by narrow channels, lies along the N side of West Bay in the approaches to Clarke Cove. Their positions can best be seen on a chart. There is good anchorage between them and the N shore.

Clarke Cove (45°49'N., 61°02'W.), N of Cameron Island, is a good anchorage. There is a government wharf 23m long and 6m wide, with a depth of 1.8m at the outer face. A second wharf is in ruins. A narrow buoyed channel passes between Cameron Island and George Island. A second unmarked channel, leading between Cameron Island and Green Island, is constricted at the entrance by a reef extending 0.3 mile S of Cameron Island, but widens beyond. A light is exhibited from a skeleton mast on the government wharf.

A conspicuous microwave tower, 266m high, marked by red aircraft warning lights, is situated about 1 mile W of the Wharf at Clarke Cove.

Anchorage.—Besides Clarke Cove, there is a confined but safe anchorage midway between the N end of Mac Raes Island and the S part of Cow Island, in 12m, mud. Tailor Shoal, with a depth of 5.2m, lies 0.5 mile SE of Mac Raes Island.

5.44 The **Crammond Islands** (45°45'N., 61°05'W.), including Floda Island, form a separate group located 1.5 miles SW of Mac Raes Island. These islands present cliffs of red sand and clay to seaward, and are 15 to 20m high to the tops of the trees. Anchorage is poor around these islands because of the depth of water, but there is a secure small craft harbor between the two Crammond Islands.

The small craft harbor is on the SE side of the channel between the two islands and is protected by a sand bar. The preferred entrance is from the N, in mid-channel, after allowing for a rocky bar extending NE from the W island.

Smith Shoal, with a depth of 1.6m, lies 135m SE of the E Crammond Island. It is marked by a conical buoy. Mid Shoal, with a depth of 4.2m, is nearly 1 mile NW of the N end of the Crammond Islands.

Dumpling Island, 0.6 mile NW of the Crammond Islands, is surrounded by a reef which extends 0.3 mile W towards MacKenzies Point (Widow Point).

The channel between the Crammond Islands and the coast to the W is deep and clear, except for an 8m shoal lying 0.4 mile S of Dumpling Island; another shoal of 8.4m, 0.75 mile farther S, off Spruce Point; and one of 4.6m in Malcolm Cove.

MacLeod Creek, Ross Pond, and North Cove lie W of MacKenzies Point. The channel leading to MacLeod Creek and Ross Pond is buoyed, but both of these small inlets are very shallow.

The head of West Bay, between Spruce Point, about 1 mile S of the E extremity of MacKenzies Point, and Ballam Head,

about 2 miles further S, provides reasonable shelter for boats, but there is no secure anchorage. Reefs extend from the N shore, W of Spruce Point. Magnus Islet lies on a partly drying reef, connected to the shore, and also extending in a tongue for two thirds of the distance across the cove at the head of the bay. There is a wharf at the village of West Bay, which extends to a depth of 4m at the outer face.

Ballam Shoal, with a least depth of 4.6m, is a rocky bank extending for 0.75 mile ENE of **MacIntosh Point** (45°42'N., 61°07'W.) and across the mouth of the cove to Ballam Head.

The Black River flows into West Bay, 1.5 miles E of MacIntosh Point. There is a confined small vessel anchorage off its mouth, sheltered by MacRae Islet, but it is surrounded by shoal water and requires knowledge of its intricacies to enter.

5.45 West Bay—South side.—MacIntosh Cove (43°44'N., 61°02'W.), 3 miles NE of MacIntosh Point and immediately E of McInnes Point, is a good small vessel anchorage, but the area of water over 5m in depth is only 0.1 mile wide. A small islet lies N of the E point of the cove, with a reef connecting it to the shore, and shoals with a least depth of 5.5m extend for 1 mile W of the islet. There is a narrow passage between these shoals and the islet. The beach 0.6 mile NE of MacIntosh Cove encloses a small pond, and a reef with depths of less than 9.1m extends about 1 mile offshore.

McInnes Shoals, rock, at a depth of 5m, lie about 0.8 mile WNW of McInnes Point.

Pringle Island, 3 miles NE of MacIntosh Cove, forms Pringle Harbour between it and the mainland. It is a good harbor for small craft. A wharf, 6.1m wide, extends to a depth of 3.7m at the outer end of the village of The Points.

MacLeods Point lies 1 mile NE of Pringle Island, with a reef, with a depth of 4m, midway between. Another reef extends 0.3 mile N of the point. There is a small boat harbor S of the peninsula forming the point.

Poor Point (45°47'N., 60°56'W.) lies 1 mile E of MacLeods Point. Depths of 1.8m and 0.6m lie 0.25 mile W and N, respectively, of the point. A lighted buoy is moored about 595m N of the point.

Morrison Harbour, about 1.8 miles E of Poor Point, is a small boat anchorage on the E side of Morrison Head, a small peninsula, 11m high, with red cliffs. Shoal water borders the peninsula for 0.2 to 0.4 mile offshore. A rocky bank, with a depth of 8.2m, lies 0.6 mile NE of Morrison Head.

Macrae Point (45°45'N., 60°51'W.) is 2.25 miles ESE of Morrison Head, with a rocky bank having a depth of 5.8m lying midway between them. A shoal, with a depth of 4.1m, lies 0.4 mile NW of the point, and a 7.8m patch lies 0.9 mile E of the point.

Bras d'Or Lake—East Side

5.46 The coast between Derby Point, at the SE end of Barra Strait, and **Benacadie Point** (45°54'N., 60°43'W.), 4 miles to the SE, forms Pipers Cove, a small bay with very uneven depths. A bank, with a least depth of 7.2m, lies 1 mile SE of the light on Derby Point; there are patches, with depths of 7.4 to 8m, about 0.5 mile further to the S and SE.

Benacadie Pond, a narrow indentation immediately E of Benacadie Point, is shallow, with a drying bar across the entrance.

East Bay (45°56'N., 60°33'W.), entered between Benacadie Point and Middle Cape, 4 miles to the SE, extends in a NE direction for 16 miles. The first 4 miles within the entrance are clear of shoals, but the depths throughout are very irregular. The long fetch, the deep water, and the nature of the bottom make anchorage unsafe except in the small places mentioned below.

East Bay

5.47 East Bay—Northwest side.—Amaguadees Pond, a large area of water with depths of 2 to 4.6m enclosed by a beach of gravel over clay, lies on the N shore, 3 miles E of Benacadie Point. A wharf, known as Castle Bay wharf, with a depth of 3.4m alongside the 50m length, is situated near the NE end of the beach.

Christmas Pond, 1 mile NE of Amaguadees Pond, is a small boat harbor enclosed by a sand and shingle beach extending NE from **Dhu Point** (45°55'N., 60°38'W.). The approach is E or W of Christmas Island, which lies 1.25 miles NW of Dhu Point, and then SW to the entrance, which has a limiting depth of 1.5m. Anchorage for small craft is available at the head of the pond.

McPhee Island (45°56'N., 60°33'W.), 2.5 miles E of Christmas Island, is joined to the mainland at Eskasoni by a long sand and shingle beach. West Eskasoni Harbour, close W of McPhee Island, is a small but secure harbor for small craft; the long sand and shingle beach forms the N side of the harbor.

Crane Cove is reached through a narrow shallow winding channel which leads through the Indian Islands and N of McPhee Island. This channel is buoyed at the entrance and requires local knowledge. A public wharf at Crane Cove is 37m long, with a depth of 1.2m alongside.

There is a small shallow anchorage inside the harbor formed by Cossit Point, 3.5 miles NE of McPhee Island. Shoal water extends 0.4 mile to the SE of the end of the point and also extends in a bank on the E side of the narrow entrance channel. There is a wharf in the cove NE of Cossit Point, 64m long, with a pier end 12m long. The bank E of the channel into the cove, with a depth of 1.8m, lies 0.3 mile offshore from this wharf. A spar buoy marks the E limit of the bank, and a channel runs between the buoy and the shoal water extending off McAdam Point.

5.48 East Bay—Head.—Shoals extend off both shores abreast of **Campbell Point** (46°00'N., 60°25'W.) and only a tongue of deeper water continues towards the causeway which terminates the head of the bay. There is a very narrow area of water over 5.5m deep extending to within about 0.4 mile of the causeway.

5.49 East Bay—Southeast side.—At MacDougall Point, about 5 miles SW of Campbell Point, there is a large pond enclosed by a shingle beach. Shoal water extends 0.2 mile from the point.

Marble Point (45°56'N., 60°32'W.), about 1.8 miles SW of MacDougall Point, has a similar pond about 0.5 mile NW of it; a long reef runs 0.25 mile NNE from the point. Marble Hill, 1 mile E of the point, is 180m high.

Lochmore Harbour, about 2.8 miles SW of Marble Point, is

formed by a long shingle beach. The harbor is entered from the NE end of the curving beach. There is a depth of 1.6m over the bar. The small harbor provides good shelter for small craft. The hills inland rise to a height of 210m.

The **Red Islands** (45°49'N., 60°46'W.), 6 miles SW of Middle Cape, consist of one large and one very small island. The connecting reefs form a horseshoe shape, and enclose a small boat harbor open to the S. Two rocky patches, each with a depth of 7.6m, lie 0.5 mile N and 1 mile NE of the islands. The islands, although treeless and with no distinguishing features, show good contrast against the wooded hills.

Campbells Cove is a narrow, shallow inlet on the mainland S of the Red Islands. A disused lighthouse stands on Murdocks Point, the W entrance point of Campbell Cove. South of the cove are a number of peninsulas and islands, connected by shingle beaches, and forming Johnstown Harbour and Hay Cove, which lie within Campbells Island and Evans Island. The approach channels are intricate, but with local knowledge they are navigable for small vessels.

St. Peters Inlet

5.50 St. Peters Inlet, located at the S end of Bras d'Or Lake, terminates at its SW extremity with St. Peters Canal. The channel, which is intricate, is buoyed during the navigation season, however, all vessels except small craft are advised to take a pilot, and his services are compulsory for merchant vessels.

Kelly Shoals (45°46'N., 60°49'W.), with a least depth of 1.6m, cover a large area off the entrance to St. Peters Inlet, midway between the Red Islands and Macrae Point. Deep water surrounds the shoals, but the passage between them and Macrae Point, about 1.5 miles SW, is preferable to the channel on the E side. Buoys mark the W and S limits of the shoals. The passage on the SW side of the shoals is the preferred passage.

Cape George (45°44'N., 60°48'W.), 1.5 miles S of Kelly Shoals, rises to a wooded cliff and is the W entrance point of St. Peters Inlet. A shoal, with depths of 5.5 to 7.3m, lies 0.75 mile N of Cape George.

Cape George Light is exhibited from a white square structure, 8m high.

MacNabs Cove and Soldiers Cove lie on the E side of St. Peters Inlet, outside the entrance to the channel leading to St. Peters Canal. They are entered by passing through narrow channels between shoals. The entrance to both these coves is to the E of Chapel Island. Anchorage, in 6 to 7m, may be found in MacNabs Cove and, in 7 to 13m, in Soldiers Cove.

5.51 Channel leading to St. Peters Canal.—The best water is found by keeping over towards Cape George and passing W of Chapel Island, until off Trap Point. The S end of Chapel Island is marked by a white church with a spire. The entrance to the channel lies between the buoy moored off the edge of the shoal extending from Dock Point and Gregory Island, a small island close W of Doctor Island.

Gregory Island Light (45°43'N., 60°48'W.) is exhibited from a white circular tower, 3m high.

The ship channel curves round between Gregory Island and the mainland, and then between Doctor Island and MacNabs Point. It is clear of detached shoals, and 14.6m can be found in the narrow fairway at this point. Shoals extending from either side reduce the width of the channel to 0.1 mile in places. The passage is again narrow and intricate from about 0.5 mile SW of MacNabs Point, with a least depth of 7.3m. From this point the channel passes SE of MacNabs Island then through a narrow passage S of French Cove. It then passes close E of Carter Point and close around the S end of Beaver Island in a least charted depth of 7.3m. The channel is considerably restricted to a width of about 90m just N of Helens Island (Marjorie Island), where there are charted depths of 6.1m in the channel and shoaling close to the channel edges. In the approach to St. Peters Canal, the channel remains constricted, with many turns; the channel is buoyed. The approach to the canal is dredged to 5.5m and is buoyed. It was reported that two 5.2m depths were discovered in the narrows between Beaver Island and Sandys Point. At the N entrance to St. Peters Canal is a rock with a depth of 4.1m. The turn to enter the canal is very sharp.

Overhead power cables, with a maximum safe overhead clearance of 24m, cross the channel in Beaver Narrows N of Helens Island.

Beaver Island Light (45°41'N., 60°50'W.) is exhibited from an aluminum tower on the SE point of the island.

Helens Island Light (45°40'N., 60°51'W.) is exhibited from a mast, 6.7m high, on a small islet about 1 mile SW of Beaver Island Light.

All buoyage in the channel of St. Peters Inlet is laid as in the entire Bras d'Or Lakes system, that is from N to S with red to starboard. Buoys are removed after the navigation season, approximately December 1.

5.52 St. Peters Canal (45°39'N., 60°52'W.) connects the inlet with St. Peters Bay. It is about 0.5 mile in length, 16.8m wide at the water level, with a limiting depth of 4.1m. There is one tidal lock, 91.4m long and 14.45m wide, with 5.5m over the sills. The maximum length of vessel that can be accommodated in the lock is 82.3m.

The mean lake level of St. Peters Inlet at the N end of the canal is slightly more than 0.6m below the level of HWS in St. Peters Bay. Winds may cause a fluctuation of about 0.6m in level in that part of St. Peters Inlet, but tidal influence is imperceptible.

Vessels should be prepared to land men to handle lines, as it is difficult to maintain steerage way in the canal. There is a wide basin at the S end where ships waiting to transit the canal to the N may secure alongside.

A swing bridge crosses the canal near the N end. It is manually operated and has a vertical clearance of 6.1m when closed.

Two overhead power cables, with a least vertical clearance of 32m, cross the canal close N of the lock.

There is a speed limit of 6 knots in the canal.

Ice.—St. Peters Inlet freezes over from January 15 until April 25, approximately.

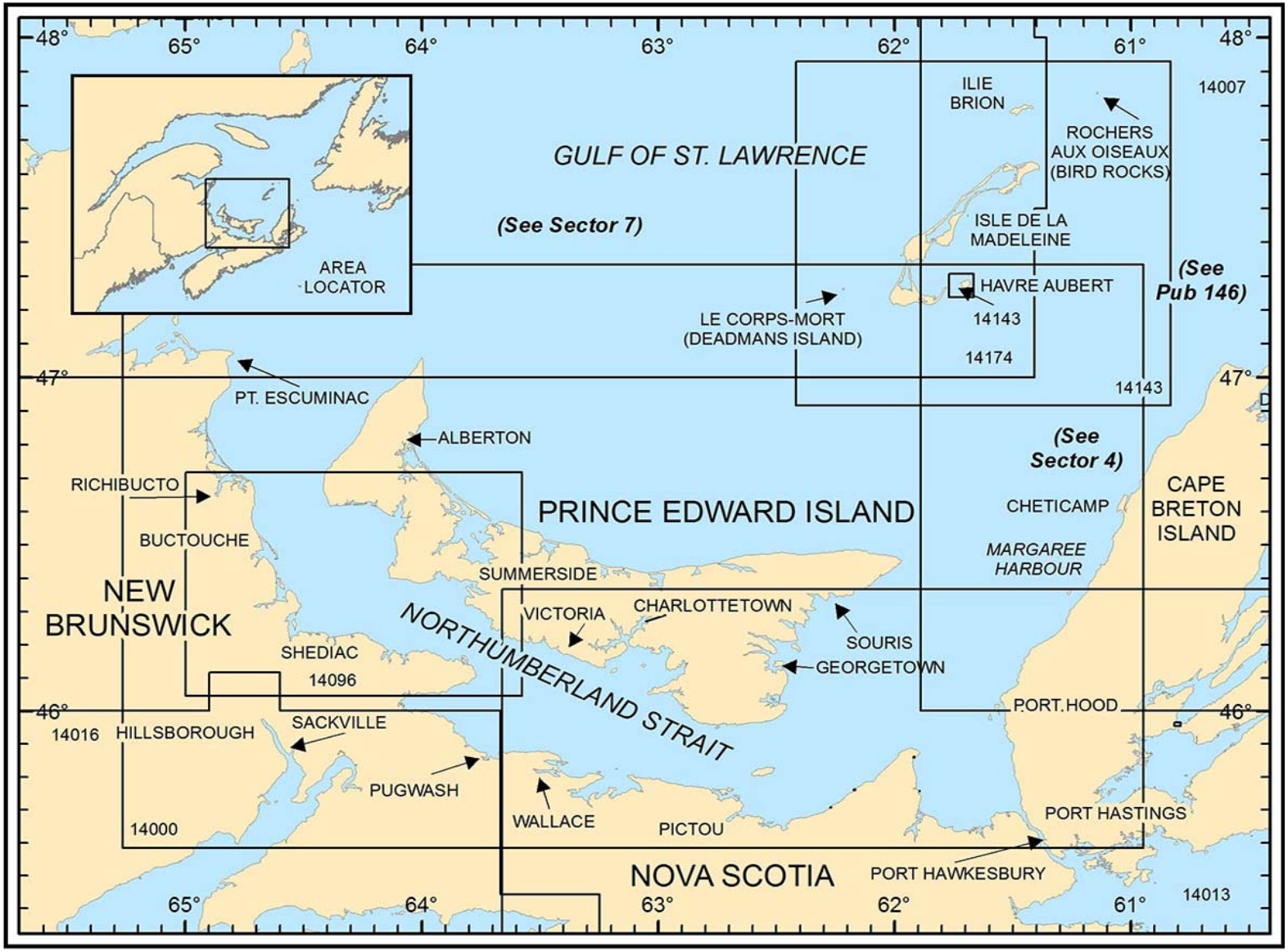
Pilotage.—Pilotage is compulsory for merchant vessels and recommended for all others except small craft. See the Bras d'Or Lakes in paragraph 5.25 for information on pilots.

Regulations.—There is no fee for locking through, but the master of any registered vessel will be required to supply infor-

mation to the Lockmaster on registry, size, tonnage, cargo, crew, and ports of departure and destination.

Control lights are exhibited close to each entrance to the lock. No vessel shall enter the lock unless a green light is shown. A flashing light indicates the lock is being prepared.

St. Peters Bay is described in paragraph 4.14.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **6** — CHART INFORMATION

SECTOR 6

THE ÎLES DE LA MADELEINE, PRINCE EDWARD ISLAND, AND NORTHUMBERLAND STRAIT

Plan.—This sector describes the Îles de la Madeleine, including their off-lying islets and dangers, then the N and E coasts of Prince Edward Island and finally Northumberland Strait.

The general description of the Iles de la Madeleine is from N to S, with both Prince Edward Island and Northumberland Strait being described from E to W.

Pilotage.—Pilotage for ports in this sector is obtained through the Atlantic Pilotage Authority. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further information.

The Îles de la Madeleine

6.1 The Îles de la Madeleine (Magdalen Islands) lie nearly 50 miles NW of Cape St. Lawrence and consist of a number of hilly islands joined together by a double line of sand bars and beaches which enclose extensive lagoons having shallow and narrow entrances. The one exception is Ile d'Entree, which is the highest of the group and completely detached to the E. Îles de la Madeleine form a regional county municipality of Québec. They include the municipalities of Cap-aux-Meules, Fatima, Grande-Entrée, Grosse-Île, Havreaux-Maisons, L'Étang-du-Nord and L'Île-du-Havre-Aubert.

The sand bars which join the main part of the group together are only about 1m above the sea in places, but rise in other parts to hills of blown sand of considerable elevation. They appear to be building up, as there are ridges of sand accumulating and running parallel to the shore and about 0.1 to 0.2 mile offshore. There is generally from 2.7 to 3.7m of water over them, with depths of from 5.5 to 7.3m between the ridges and the shore.

The central part of these islands rise into hills which are rounded and frequently dome-shaped, and attain elevations of 61 to 170m. They are partially covered with small trees and have red cliffs which contrast with the sand, trees, and sky on bright sunny days. In stormy weather, the appearance is equally distinctive, for then the isolated hills and craggy cliffs are dimly seen through the rain and mist and appear to be joined together by long ranges of breakers, which hide the sand bars.

The climate is not as severe as the mainland in winter but summers are damp and cool with frequent fog and rain. During autumn, thick weather and E gales are prevalent.

In the navigation season there is service with the islands twice a week from Pictou, N.S. and Charlottetown, P.E.I. There is also a weekly service with Montreal.

There are no harbors for large vessels, but Havre-Aubert, Cap-aux-Muelles, and Grande-Entrée are suitable for small ocean-going vessels and coasters. The principal industry of the islands is fishing and numerous facilities for this trade are available. There is a scheduled ferry for passengers and vehicles, linking Souris (Prince Edward Island) to Cap-aux-Meules. Seasonal ferries for passengers and road vehicles link Montréal, Québec, Chandler to Cap-aux-Meules.

Tides—Currents.—The tidal currents around the Îles de la Madeleine are variable in both direction and rate, as they are greatly affected by winds and currents in the Gulf of St. Lawrence.

A few miles N of Rochers aux Oiseaux (Bird Rocks) there is usually a current flowing SE, but the tidal currents set NE and SW between Île Brion and the main islands to the S. South of the main islands, the flood flows NW and is divided by Pointe de l'Est, which turns the current to the SW toward Ile d'Entree.

On the SE side of the islands the ebb current sets strongly out of the lagoons and turns to the NE, generally following the S shore of the islands. Off Pointe de l'Est it meets the currents rounding the N side of Île de l'Est and setting to the ESE. Here these two currents, together with the shoal water, cause a heavy breaking sea in strong E winds.

The tidal rise at springs is about 0.9m and 0.6m at neaps. Tidal currents generally do not exceed 1 knot, except close to shore and in the entrances to the lagoons. The ebb current is generally stronger than the flood, and its rate is increased by W winds. The rate of the flood current is increased by E winds.

A few miles off Île Brion and Rochers aux Oiseaux, north of the main group, the current usually sets to the SE, but the flood current can be felt between the main islands of the group and Île Brion. This flood current sets to the NW and breaks up into two currents at Pointe de l'Est, with Pointe Old-Harry and the shoals off it, which deviates the current to the SW, towards Île d'Entrée, nearly causing a slack in the bay between Île de la Grande Entrée and Cap le Moine-Qui-Prie (Cap Alright), as well as in the Baie de Plaisance.

The other part of the tidal current sets north of Île Brion, going from Pointe de l'Est to Gros Cap (on Île du Havre Aubert). The main part of the current sets SW, while the other part flows along the south shore of Île du Havre Aubert and meets the current coming from Pointe de l'Est. The currents join and turn gradually while mixing with the generally weak flood currents which set to the west.

On the SE side of the islands, the ebb current flows strongly out of the ponds and of Baie de Plaisance, between Dune Sandy Hook and Île d'Entrée; it sets to the west along the south shore of Île du Havre Aubert, goes around it and then sets to the NE along the north shore of the islands, between Gros Cap and Pointe de l'Est. Then, the ebb current sets to the NE on the sandy ridge lying about 1.2 miles NNE off Pointe de l'Est, where it meets with the main current which sets to the SE and which goes around the north side of the islands.

These conditions seem to be the rule and occur repeatedly in fine weather, with occasional interruptions. The speed of these currents rarely reach 1 knot, except close to the shore and around the points. The ebb current is usually stronger than the flood current and the westerly winds increase its speed, while the speed of the flood is increased by easterly winds. However, the meeting of the ebb currents added to the shallow depths and

easterly winds cause a heavy and breaking sea.

The hourly surface currents forecasts for the Gulf of St. Lawrence are available on the St. Lawrence Global Observatory web site at http://www.ogsl.ca (click on the Ocean Forecasts tab). You can obtain hourly details of the direction and speed of surface currents forecasted for the next 48 hours.

The tidal range is about 0.9 m during spring tides and about 0.6 m during neap tides. On the west shore of the islands, the tide occurs almost always in daytime. For more information on water levels, mariners should consult the Canadian Tide and Current Tables and the table mentioned on the charts. In addition, a network of digital water level gauges has been installed along the St. Lawrence River; the system, called SINECO (Coastal and Ocean Water Level Information System), allows the mariners to obtain instantaneous water levels at different sites, as well as the forecast for the next few days. The most recent information on water levels can be obtained by contacting the MCTS centers by VHF radio, by calling the automated information service (telephone: 1-877-775-0790) or on the web site (http://www.charts.gc.ca).

ODAS Lighted Buoy IML-5, is moored W of Banc Bradelle, 57 miles W of Île du Havre Aubert and 32 miles NE of North Cape (Prince Edward Island). During winter, buoys are removed and some are replaced by spar buoys. For information on the positioning and removing of buoys, consult the Notices to Mariners.

Regulations.—Strict regulations of the Canadian Department of Fisheries and Oceans control the discharge of ballast water into Lagune de la Grande (Grand Entry Harbor) or within 10 miles of the Îles de la Madeleine. No such deballasting is permitted by these regulations without the appropriate certificate issued by Area Manager, Department of Fisheries and Oceans, Cap aux Meules.

Vessels bound for the Îles de la Madeleine, moored or anchored, must comply with the Ballast Water Control and Management Regulations. It is forbidden to anyone to deposit or allow the deposit of noxious products in waters containing fish that would alter, degrade or destroy the fish habitat.

The Department of Fisheries and Oceans (DFO) has determined that ballast water taken from any waters located W of 68°W and any waters located within 10 miles of the Canadian shoreline, may contain noxious products in such quantities or concentration that they would alter, degrade or destroy fish habitat in the Îles de la Madeleine archipelago. Only ballast water taken in areas not included in the above may be discharged into Lagune de la Grande Entrée or within 10 miles of the Îles de la Madeleine archipelago (protected waters).

All vessels planning to deballast into the protected waters defined above shall, at least three days ahead, inform the Area Manager, Department of Fisheries and Oceans, in Cap-aux-Meules, QC (telephone: 418-986-2095), of the estimated time of arrival and inform him of any subsequent changes. Upon arrival, the ship's master must, if so requested, facilitate access to the vessel by DFO officers for sampling of water in ballast tanks, and inspection of the vessel's log books. No release of ballast water into this protected zone may take place until authorized by DFO.

Any person or vessel that contravenes these provisions, concerning the discharge of deleterious substances in waters frequented by fish, is liable to severe fines.

The Iles de la Madeleine—Outer Islands

6.2 Rochers aux Oiseaux (Bird Rocks) (47°50'N., 61°09'W.), about 16 miles NE of the main islands of the Madeleine group, are two rocks of red sandstone which appear to be diminishing in size from the action of the sea. The cliffs are perpendicular practically all around and sea birds exist on them in great numbers.

Rocher aux Oiseaux (Great Bird), the SE and largest rock, is 32m high and flat on top. Rocher aux Margaux (North Bird) is smaller and lower, and divided into three precipitous mounds which are joined just above the sea. A reef extends about 0.8 mile NE of North Bird and breakers are usually seen in the vicinity of the rocks.

A light is shown from a skeleton tower on the summit of Rocher aux Oiseaux. Two dwellings stand near the light.

Caution.—A magnetic anomaly has been observed in the vicinity of Rochers aux Oiseax. Mariners should use caution when using the magnetic compass in this area.

Depths in this area may be shallower by as much as 1.8m.

6.3 Île Brion (47°48'N., 61°28'W.), 9 miles N of the main Madeleine group and about 11 miles WSW of Rochers aux Oiseaux, is formed of alternating and nearly horizontal strata of red and gray sandstone. The rocks are soft and broken, with perpendicular and overhanging cliffs along much of the shoreline. The cliffs on the N side of the island are much higher than those the S and there are several small coves. The highest point of the island attains an elevation of 75m near its center. Several areas are covered with stunted trees and there is a large grassy upland tract.

Île Brion Light, 11m high, is shown from a white tower on Cap Noddy, the W end of the island.

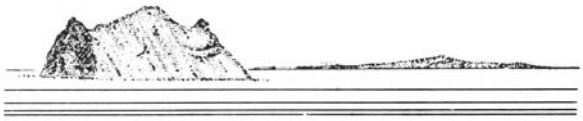
A rocky ridge, with depths of less than 12m, lying roughly parallel with the N coast, at a distance of about 2.5 miles from it, may be a danger to some vessels. Shallower depths continue to be reported in this area. Île Brion is an ecological reserve and an access regulation applies to this protected area.

Île Brion is surrounded by a reef, some of which extends a considerable distance to the W and S. The reef extending S from the SW end of the island is broken with patches of less than 5.5m lying up to 1 mile offshore.

Anchorage.—In offshore winds anchorage can be taken, in a depth of 11m, sand, about 1 mile off the SE shore of Ile Brion and E of the reef extend S from the SW end of the island.

Caution.—A ridge of rocky ground exists between Ile Brion and Rochers aux Oiseax. Although the least charted depth is about 10.3m, shallower depths may exist and the swell builds on this ridge. Groundings have occurred. Ships are advised not to cross this ridge.

Le Corps Mort (Deadman Island) (47°16'N., 62°12'W.), located 7.5 miles W of Ile du Havre Aubert, the S island of the main Madeleine group, has steep sloping sides and when seen from the E or W resembles a pyramid. From the N or S, at a distance, it resembles a recumbent human form, from which it gains its name. It is rocky and the W side is moderately steep-to, but a reef extends 1 mile SE from the E end. Soundings give little warning when approaching the island.



Le Corps Mort bearing 056°, distant 1 mile

The Iles de la Madeleine—Main Islands

6.4 Île de l'Est (47°37'N., 61°25'W.), the NE island of the group, has an isolated hill, known as Cap Nord Est (Northeast Cape), which rises in sheer cliffs to a height of 62m near its NW end. When seen from a distance the cape appears as the NE extremity of Ile de la Madeleine, as all the land E of it is considerably lower.

Île de l'Est from E

Pointe de l'Est, the E extremity of the island, is low and sandy, and encloses several shallow ponds. There are some sand hills on the point and others of higher elevation extend inland.

A sand ridge, with a least depth of 4.3m, lies about 1.3 miles SE of Pointe de l'Est. There is a channel between the ridge and the point, but local knowledge is advisable.

A light, exhibited from a square skeleton tower, and a racon are situated on Pointe de l'Est.

Doyle Reef, about 6 miles ESE of Pointe de l'Est, has a least depth of 7m over sharp rocks. The water surrounding this shoal is deep; this danger seldom breaks except in very heavy gales.

Île de la Grande Entrée (Coffin Island) (47°33'N., 61°31'W.), formed of several low hills, lies SE of Île de l'Est and is connected to it by Pointe Old Harry, a narrow point of red sandstone of moderate height. A small breakwater with about 2.4m of water alongside is situated on the N side of the head. The breakwater-wharf is in ruins. There is a ramp at the inner end of the breakwater-wharf.

Bassin aux Huitres, available only to boats at HW, is a narrow lagoon enclosed by a sandy strip on the S side of Ile de la Grande-Entree.

Caution.—Les Colombines lie SE of Île de la Grande-Entree and consist of a number of small shoals and rocky patches, some with depths of only 0.9m. Shoal water extends about 2 miles NE of Les Colombines, with depths of 4.9 to 10.1m.

Clark Shoal, with a depth of 5.2m, lies 8.5 miles SE of Pointe Old Harry and is generally steep-to. Goodwin Shoal, with a least depth of 5.9m, lies about 6.5 miles SSE of Pointe Old Harry. A depth of 9.4m, rock, lies about 1 mile to the E. Quero Ground lies about 1.5 miles SE of Goodwin Shoal.

6.5 Havre de la Grande Entrée (47°35'N., 61°35'W.) is the largest of the interior lagoons, with depths of from 1.8 to 5.5m. The lagoon extends S to Île du Cap-aux-Meules and can be traversed over its length at HW by boats.

Winds—Weather.—Strong winds and fog are frequent, particularly in October and November, with the prevailing winds being from W and NW.

Ice.—Ice forms in late December or early January and remains, unless broken up by the passage of ships, until April.

Depths—Limitations.—The village of Grand-Entrée is situated on the E side of the entrance, just within the lagoon. The narrow channel to the wharf is marked by buoys. The charted depths are obtained by recurrent dredging. Due to continual silting and to the shifting sandy shoals, mariners should expect to find at some places less water than charted and should be very cautious when entering into the harbor. The flood current, a good visibility and fine weather conditions are essential to reach the harbor.

The depths and the width of the channel leading to the Mines Seleine (Grosse-Île) wharf can vary considerably due to continual silting. Mariners should expect to find at some places less water than charted. For recent informations, contact the harbor authorities of Mines Saleine or the sales office in Montréal.

A causeway and catwalk link Mines Seleine (Grosse-Île) wharf with the shore; the 380m long and 10m wide catwalk is used primarily for loading de-icing salt. An abandoned submarine cable links the wharf's inner end to Île Seleine.

In the harbor near the W entrance point to Baie de la Grosse Île is a wharf for loading salt. The channel across the lagoon has been dredged (1993) to a depth of 7.3m. The channel inside the lagoon is privately buoyed.

The entrance to Havre de la Grande-Entrée is through a narrow channel running NE between sandy, shifting shoals and then between Ile de la Grande-Entrée and Dune du Sud, about 0.1 mile WNW. It should only be attempted with the flood current, and in good weather and visibility. The approach channel was reported to have dredged depths of 7.3m.

Aspect.—Two conspicuous square towers (47°37'N., 61°33'W.), each about 30m high with red lights, are situated about 1.4 miles WSW of Cap du Dauphin. These towers are visible from the S when approaching the entrance to Havre de la Grande Entrée.

Range lights are shown at Grande Entrée from square towers. The lights are in line, bearing 026°.

Havre de la Grande Entrée—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Public wharf	122m	2.0m	Partially in ruins (2009). Situated on Pointe de la Grande Entrée. A fish plant is located adjacent to the wharf.
Mines Seleine	—	—	Grosse-Île. Privately owned.

Grande Entrée Sector Light is 9.2m high. The white sector, on a bearing of 018°, leads in the entrance of Chenal de la Grande Entrée.

La Grosse Île Sector Light, 5.8m high, is situated 0.5 mile W of Pointe de la Grosse Île. The white sector, on a bearing of 034°, leads through Chenal de la Grande Entrée.

Dune de l'Ouest Range Lights, in line bearing 287°, are shown from poles. The front is 10m high; the rear is 5.5m high.

The SE limit of a spoil ground lies 0.2 mile NW of the transit of Grande Entrée Range Lights, to seaward and 0.3 mile SW of YC Lighted Buoy, and runs parallel to the transit for a distance of 0.7 mile.

Anchorage.—Uncharted submarine power cables are reported to be laid between the inner end of the 300m wharf and Ilot B, situated SSE of the wharf. Vessels should not anchor without local knowledge.

Caution.—The range lights and buoys may be moved at any time to best mark the channel through the shifting bars. Several marine farms, marked by yellow cautionary buoys, are situated in Havre de la Grande Entrée; mariners are advised to exercise caution in this area.

6.6 Île du Havre aux Maisons (Alright Island) (47°25'N., 61°47'W.), situated about 11 miles SW of Ile de la Grand-Entrée, is noted for its steep cliffs on its E side which attain a height of 110m. They are grayish-white with shades of brick-red at the base.

Cap Alright, at the SE end of the island, is low, but W of the cape the cliffs rise again. A conspicuous hill, Butte Ronde, about 102m high, is located just N of the cape. A light is shown from a white square tower on Cap Alright.

Dune du Sud extends NE from Ile du Havre aux Maisons to Havre de la Grande-Entrée. Ile Shag, a low, sandstone island, lies close off Dune du Sud, about 6 miles NE of Cap Alright. A windmill is situated on Dune de Sud, about 2 miles SSW of Ile Shag.

Caution.—Alright Reef, with a least depth of 2.1m, rock, extends up to 4 miles E of the E side of Ile du Havre-aux-Maisons.

A rock, with a depth of 4.3m, lies just a little over 1 mile ESE of Cap Alright.

A wreck, with a least depth of 9.1m, lies about 9.5 miles NE of Cap Alright. A fixed highway bridge, with a vertical clearance of 6.3m, spans the harbor. The channel under the bridge is marked by lights and leads into Lagune du Havre aux Maisons. There are piles close upstream of the bridge. Overhead cables, with a least vertical clearance of 5.9m, are 0.2 mile upstream of the bridge. Anchorage is prohibited on either side of the overhead cable area due to submarine cables crossing the channel. A crib is on the W side of the channel immediately downstream of the overhead cables. An outfall pipe extends from the shore just upstream of the overhead cables; A submerged crib is at the outer end of the outfall pipe, Another submerged crib is 50m NNW of the previous crib. A crib, in ruins, is on the W shore immediately upstream of the overhead cables.

Several marine farms are located in Lagune du Havre aux Maisons. These marine farms are marked by yellow cautionary buoys; mariners are advised to exercise caution in these areas.

6.7 Pearl Reef (47°20'N., 61°36'W.), about 8 miles ESE of Cap Alright, consists of several rocks with a least depth of 2.7m. It breaks heavily, even in a moderate sea and is dangerous to approach in any weather. A shoal, with a depth of 9.7m, lies about 1.5 miles S of the reef.

Harve aux Maisons, at the W end of Ile du Havre-aux-Maisons, is entered through a narrow shifting channel with depths of 0.6 to 2.1m. The channel is buoyed, but these aids do not necessary mark the deepest water and local knowledge is necessary.

A road bridge, with a vertical clearance of 3m, crosses the head of the harbor, spanning a channel that leads into Lagune du Havre aux Maisons (The Great Lagoon). An overhead cable, with a vertical clearance of 12m, stands close SE of the road bridge.

The channel beneath the bridge is marked by two lights which are exhibited from the NE and SW ends of the bridge.

The lagoon is connected with Havre de la Grande Entrée at HW by a narrow boat channel.

In the lagoon, close E of the bridge, there are several small wharves and a fish plant.

6.8 Île du Cap aux Meules (Grindstone Island) (47°23'N., 61°55'W.) lies close SW of Ile du Havre aux Maisons and contains the best facilities in the Magdalen group. The island is bordered by cliffs in many places and rises more or less uniformly to an elevation of 162m in a conspicuous peak near the center of the island. The port handles 90% of all shipping traffic to the Magdalen Islands. Located on the central island in the heart of the economic and port zones. The port is divided into Sector 1 (Marine Terminal), Sector 2 (Industrial Port), and Sector 3 (Multi-purpose Harbor). The Ferry Wharf is used by the ferry between the islands and the mainland, and is also used by trucks for the transport of goods locally as well as the export of fishing products.

Cap Aux Meules—Berth Information

Berth	Length	Depth	Remarks
No. 1	82m	5.5m	Passengers and general cargo.
No. 2	29m	4.0m	Ro-ro and general cargo.
Ro-Ro Berth	51m	4.0m	Ro-ro.
New Ferry Wharf	132m	5.6m	Passengers, cruise vessels, and ro-ro.
Fishing Wharf—North	156m	4.0m	General cargo, fishing products, and passengers.
Fishing Wharf—West	146m	5.5m	General cargo, fishing products, and passengers.

Cap Aux Meules—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Old Ferry Wharf	91m	5.5m	Passengers, cruise vessels, and ro-ro.
Oil Wharf	175m	8.0m	Chemicals, petroleum products, cruise vessels, and ro-ro. Maximum draft of 7.8m.

Ice.—Cap-aux-Meules is closed from mid Jan to Apr due to heavy ice. Shore-fast ice begins to form usually about mid-December and its concentration increases in the approaches to Havre de Cap-aux-Meules, a month later. Usually, the ice cover decreases to a mere tenths about mid-April and this whole area is clear of ice around mid-May.

Tides—Currents.—Tidal range is 2.2m with spring at 1.1m.

Depths—Limitations.—The oil wharf is approached by a channel dredged to a depth of 6.8m over a width of 60m. See table titled **Cap Aux Meules—Berth Information** for details on berthing facilities in the harbor.

Depths in the approach channel are reported (2013) to be 6.3m.

Within the harbor, W of the curved breakwater, there are general depths of 4.6 to 6.7m. The two fishing wharves located in the port serve both offshore and inshore boats as well as a vessel of the Coast Guard Search and Rescue Division.

On the N side of the harbor is a 7m wide haul-out facility with a 100-ton travel lift. Havre de Cap-aux-Meules has also a second basin in the SW part which is protected by breakwaters and which offers a minimal depth (2016) of 1m. There is also a 150m long public wharf equipped with pontoons which forms the N side of this basin. A light shown from a tower, marks the SW end of the S breakwater, at the entrance of the second basin.

Aspect.— Two lights, in line bearing about 330° and visible only when in alignment, and lead to the entrance channel. Both the front and rear lights are shown from a red square skeleton tower.

A light is shown from a square skeleton tower 5m in height on the head of the marina breakwater.

A conspicuous point of land extending from about the middle of the E side of Île du Cap-aux-Meules. It is composed of gray sandstone and rises to a height of 45m near its seaward end. An oil tank farm is situated close W of the cape.

Pilotage.—Pilotage services are available upon request.

Contact Information.—A Canadian Coast Guard seasonal rescue station operates from Cap-aux-Meules. Requests for assistance can be addressed at any time to the Marine Rescue Sub-Centre (MRSC Québec) via the MCTS centers by VHF radio on channel 16 (156.8 MHz) or on 2,182 kHz or by telephone 1-800-463-4393. The owners of specific cell phones can also dial *16 which will establish a direct contact with the closest MCTS. It should be noted that it is not possible for the Canadian Coast Guard to trace the origin of calls for those using their cellular phone and that some areas do not have cellular coverage.

Cap Aux Meules—Contact Information	
Port Authority	
Telephone	1-418-648-4166

Cap Aux Meules—Contact Information	
Facsimile	1-418-648-3790
E-mail	marinesafety-securitemaritime@tc.gc.ca
Web site	http://www.tc.gc.ca/quebec
Harbormaster	
Telephone	1-418-986-3785
	1-418-986-4751

For further information, see the table titled **Cap Aux Meules—Contact Information**.

6.9 Le Gros Cap (47°21'N., 61°53'W.), the SE extremity of Île du Cap-aux-Meules, is a cliffy projection about 18m high. A small government wharf, with a depth of 1.5m alongside, lies close N of the cape. A tower marked by red obstruction lights is situated about 2 miles WNW of Le Gros Cap.

Note.—The W coast of Île du Cap-aux-Meules is described after Ile du Havre Aubert, beginning in paragraph 6.14.

6.10 Île du Havre Aubert (Amherst Island) (47°14'N., 61°56'W.), the SW island of the group, is connected to Île du Cap aux Meules by two ridges of sand which enclose Havre aux Basques, an extensive lagoon available only to boats.

The hills on Île du Havre Aubert rise to an elevation of 145m in its S central part. A microwave tower, marked by red obstruction lights, stands at an elevation of 227m on the hills near the center of the island.

Colline de la Demoiselle, toward the E end of the island, is a large conical hill which forms a good mark when approaching Havre Aubert from the NE. The seaward side of this hill consists of dark, red cliffs, and the summit attains an elevation of about 81m. An illuminated cross situated on another conical hill about 0.2 mile E of Colline de la Demoiselle.

Baie de Plaisance (Pleasant Bay), between Île du Cap aux Meules and Île du Havre Aubert, is the best roadstead in the Madeleine group and the only place where vessels can lie protected during the summer months when E gales are infrequent. In other seasons, when E gales are common, a vessel may be in considerable danger; the greatest caution is advised at all times.

Note.—Vessels bound for Baie de Plaisance should pass at least 2 miles W of Pearl Reef.

Caution.—A group of fish havens with a depth of 4.5m lie over an artificial feature in the S end of Baie de Plaisance, and may best be seen on the chart.

6.11 Havre Aubert (Amherst Harbor) (47°14'N., 61°50'W.) is situated on the N side of the E end of Ile du Havre Aubert within a long sandy spit known as Sandy Hook. A nar-

row peninsula of low land, the E end of which is Cap Gridley, presents gray cliffs to seaward and forms the W side of the entrance to the harbor. Shea Point, the N end of the peninsula, is located a little over 1 mile WNW of Cap Gridley.

The entrance channel, which is buoyed, lies between Cap Gridley and the sand flats, and carries a least depth of 4.9m to the government wharf at LWS. At the inner end of the channel, and S of the government wharf, is a sheltered space with depths of 3 to 4m, mud.

Ice.—The harbor is usually frozen over about December 15, and clears of ice about April 10. The first vessel usually arrives about May 1, and the last one leaves about November 15. Field ice is usually present to about May 12.

Depths—Limitations.—A fish plant, with a chimney, is located between the wharf and the point. Fishing vessels of 20m and less in length are allowed to berth at the public wharf, which is 161m long, with an alongside depth of 5.1m.

A wharf in ruins is situated outside the harbor W of Pointe Shea.

A small craft pier with 1.1m alongside is situated in Petite-Baie in the NW part of the harbor.

Aspect.—Range lights, in line bearing about 213.5°, are situated in the S part of the harbor and lead to the entrance channel. Both lights are shown from red square skeleton towers.

A sector light is exhibited from the head of the small craft pier, which accommodates a marina, situated 0.3 mile W of Cap Gridley, the white sector bearing 322.75° to 325.75° leads to the marina and into La Petite Baie. The channel to the pier is privately buoyed.

Anchorage.—The best anchorage outside the harbor is in a depth of 7.3m, sandy clay, with Cap Gridley bearing SSW at about 0.8 mile. Larger vessels can anchor farther out, in depths of 9.1 to 11m.

6.12 Ile d'Entree (47°17'N., 61°47'W.), located off the E end of Ile du Havre Aubert, is the highest and only detached island of the Madeleine group. It attains an elevation up to 170m and has red cliffs up to 122m high at the NE and SE ends. The conspicuous Tower Rock, of red sandstone, is joined to the N side of the island.

Fishermans Wharf, situated on the W side of the island near the village, is L-shaped, with an inner face 90m long, a reported (1997) depth of 1.7m, and a light at its head.

The outer face is protected by rocks. A breakwater lies close N of the wharf; the outer part of the enclosed basin was dredged to 1.7m.

Caution.—Silting may cause the depths to be less than charted.

6.13 La Passe (47°17'N., 61°42'W.), between Ile du Havre Aubert and Ile d'Entree, is restricted to a navigable width of about 0.5 mile by a sandy shoal extending for 2 miles E from Sandy Hook, and the rocky shoals lying off the W coast of Ile d'Entree. The channel is buoyed from S to N and carries a least charted depth of 5.9m, but local knowledge is recommended.

Caution.—A rock, with a depth of 4.9m, lies on the W side of the S approach to La Passe, about 1 miles SW of Ile d'Entree Light.

Rocks, with depths of 3 to 3.4m, lie about 0.5 mile W and 0.4 mile SW, respectively, of Ile d'Entree Light.

A rock, with a depth of 2.4m, lies about 0.3 mile NW of Northwest Spit, the NW extremity of Ile d'Entree. The Ile d'Entree light will longer be maintained.

6.14 South and W coasts of Ile du Havre Aubert.—The S coast of Ile du Havre Aubert, between Sandy Hook and Le Bassin, about 5 miles WSW, consists of sand hills and beaches, with shoal water from 0.5 to 1 mile offshore. There is good anchorage, about 1 mile off the entrance to Le Bassin, in 11 to 16.5m, sand, with winds from the NW through NE.

About 1.5 miles W of Le Bassin, the coast becomes high and cliffy. **Cap du Sud** (47°13'N., 61°58'W.) is the S extremity of Ile du Havre Aubert and the entire Madeleine group. Anse a la Cabane is a small bight formed between Cap du Sud and Le Gross Cap, about 1.5 miles WNW; it affords safe anchorage in NE winds about 0.8 mile offshore. The best berth is in 14.6 to 16.5m, sand, off the middle of the bay, about 0.8 mile offshore. There are several small breakwaters along this section of the coast for the protection of small craft.

Ile du Havre Aubert Light is shown from a white hexagonal tower situated on Cap du Sud.

The village of Millerand, with an L-shaped wharf, is situated at the head of Anse a la Cabane. The wharf is 103m long; the outer face, bordered on the S side by a breakwater, is 135m long. In 1994, the depth alongside was 2m. Another breakwater, 330m long, and which exhibits a light from a square skeleton tower at its outer end, lies to the E; the entrance between the wharf and the breakwater is 59m wide. Due to continual silting, depths vary but dredging is sometimes carried out.

Caution.—Le Fond Georges, a rocky fishing ground with a least depth of 16.5m, lies about 15 miles SE of the light on Cap du Sud.

The W coast of Ile du Havre Aubert is formed of red cliffs about 31m high, which extend N from Le Gros Cap to Etang de l'Ouest, about 2 miles NNW, where there is a small boat harbor. Shoal water extends up to 0.5 mile off this section of the coast and the bottom is irregular.

6.15 West coast of Ile du Cap aux Mueles—Ile aux Goelands (47°22'N., 61°58'W.), about 19m high, is small and rocky, and lies close off Cap aux Meules.

Rocky Bank, with a least charted depth of 5.8m, lies about 2 miles SW of Ile aux Goelands. Shoal water extends E from this bank to the coast and shoal depths of 8.2 to 9.1m lie up to 2 miles to the W and NW.

Cap a Savage, about 0.3 mile NE of Ile aux Goelands, is rocky and formed of steep cliffs. A breakwater, about 305m long, extends SW from the S side of the cape and nearly closes the gap between Ile aux Goelands and the shore. A visible wreck lies at the end of the cape.

Caution.—White Horse Rocks, about 5 miles W of Ile aux Goelands, are a group of pinnacles about 0.1 mile in diameter, with a least depth of 3.7m. The sea usually breaks upon these rocks and irregular depths lie to the N and NW.

6.16 Etang du Nord lies close NE of Ile aux Goelands and is entered between Cap a Savage and another point nearly 0.5 mile N. The shores of the inlet form a near perfect sandy semicircle and are partially protected by two breakwaters. The N breakwater is 355m long with a depth of 4.3m at the outer end.

The S breakwater is 416m long.

Lights are shown from the end of each breakwater.

Depths—Limitations.—There are two public wharves. The first, 215m long, with depths 0.3 to 1.5m, lies along their inside face of the N breakwater. The other is T-shaped, extending 123m W from the shore to an outer face, 73m long. There is a spur extending 54m S from its central part. Depths vary from 0.2 to 1.3m alongside.

The coast of Ile du Cap aux Mueles, from **Pointe Herissee** (Cap du Phare) (47°23'N., 61°58'W.) to Cap de l'Hopital, about 3 miles NE, is rocky with mainly red sandstone cliffs. Anse de l'Hopital, a small harbor SE of the cape, has a wharf in ruins.

A light is shown from a circular tower with a concrete base on Pointe Herissee.

Caution.—Pierre des Gros Cap, about 4 miles NW of Pointe Herissee, is a group of rocky patches with a least depth of 5.5m. It only breaks in very heavy weather and should not be approached by large vessels as it is steep-to on its S and W sides.

A group of rocky patches, with a least depth of 5.2m, lies from 3 to 4 miles NNE of Cap du l'Hopital.

6.17 Ile aux Loups (Wolf Island) (47°32'N., 61°43'W.), about 10 miles NE of Ile du Cap aux Mueles, located about in the center of Dune du Nord, consists of sandstone cliffs with sandy beaches and dunes to the NE and SW. There is a government wharf about 46m long, with a depth of 0.7m off the outer end, situated at the island. A slipway for small craft is situated immediately S of the root of the pier. A breakwater extends 190m NW from the shore, S of the pier.

There are numerous patches and shoals lying from 3 to 4.5 miles W of the island, the least depth being 7.8m. Another shoal, with a least depth of 11.9m, lies about 3.8 miles N of the W extremity of Ile aux Loups.

Grosse Ile (47°37'N., 61°31'W.), about 9.5 miles NE of Ile aux Loups, ends at its N end in Cap du Dauphin, a precipice of considerable elevation, but lower than Cap Nord Est. On the E side of Cap du Dauphin, two breakwaters protect a 100m long wharf. In 1998, there were depths of 2.2m in the entrance to the harbor and 1.6m inside the harbor.

Rochers du Dauphin and Rochers North Cape, some of which are 0.3m high, lie 1.5 miles WSW and 0.25 mile W, respectively, of the cape.

Glawson Patch, with a depth of 10.7m, lies about 5 miles W of Cap du Dauphin on the E end of a rocky bank that extends 2 miles farther SW.

Prince Edward Island

6.18 Prince Edward Island is the smallest of Canada's provinces, being only 120 miles long and about 30 miles wide near its E end. The island attains a height of about 142m above sea level, and is nearly trisected by the deep indentations of Malpeque Bay and by the mouth of the Hillsborough River, which almost meets Tracadie Bay on the N side. Its rich, red soil and red sandstone formations are distinctive features. Crescent-shaped, it lies in a great semicircular bay extending from Cape North, Cape Breton Island, to Miscou Island, New Brunswick, and is located in the S part of the Gulf of St. Lawrence.

The coast of Prince Edward Island presents a succession of large bays and projecting headlands. Of the latter, the most prominent are North Cape, West Point, and East Point, located as indicated by their names. The largest bays are those of Malpeque on the NW, Egmont the S, and Cardigan on the E. The surface of the island is gently rolling with the highest hills near the center and in the SE.

Prince Edward Island is separated from the mainland by the Northumberland Strait, which is described beginning in paragraph 6.41.

The climate of the island is much milder than that of the adjoining mainland; the air is usually free from the fogs which gather along the neighboring shores.

Prince Edward Island—North Coast

6.19 The N coast of Prince Edward Island forms a long bight between East Point and North Cape, about 93 miles WNW. The harbors are small and limited, with narrow entrances through sand bars which become impassable in a heavy sea. The entire coast is exposed to N winds and NE gales and should be avoided at such times.

Tides—Currents.—The flood current sets S into the great bight formed by the N coast of Prince Edward Island, from North Point to St. Peters Bay, near the E end. Farther eastward, the flood, or SW current, which comes from between the Iles de la Madeleine and Cape Breton Island, also sets towards the shore, especially near East Point. The ebb tidal currents appear to set in the opposite directions. The tidal currents meet and separate N of the entrance to St. Peters Bay.

Caution.—The channels through the bars of the harbors on the N coast are liable to be blocked or shifted by storms. Range lights for these channels may be changed without special notice being given and it is never safe for mariners without local knowledge to cross the bars.

With the exception of a few places off the bars of the harbors, the anchorage is, generally speaking, very bad all along, the bottom being red sandstone, thinly covered, occasionally, with sand, gravel, and broken shells.

The harbors all have narrow entrances, between sand bars, with dangerous bars of sand, at various distances offshore. With the exception of Malpeque Bay and Cascumpeque Bay, they are only suitable for very small vessels, and, even for those mentioned, the breakers on their bars extend across them in bad weather with a heavy sea, leaving no visible channel.

Prince Edward Island—North Coast—East Point to St. Peters Bay

6.20 East Point (46°27'N., 61°58'W.), the E extremity of Prince Edward Island, is fully described in paragraph 6.31.

Between East Point and St. Peters Bay, 32 miles W, there are occasional short stretches of sandy beach at the mouths of small streams. Shallow water extends about 0.5 mile offshore, with the 18.3m line generally about 1 mile from the coast. The bottom is of sandstone.

North Lake, 4 miles W of East Point, is a boat harbor with an entrance channel 1m deep and 14m wide between breakwaters, and a pier on the E side of the basin. A bridge crosses the two breakwaters.

A light is shown from a square skeleton tower, 3m high, on the outer end of the W breakwater at the entrance to North Lake Harbor.

North Lake Harbor Range Lights, in line bearing 204.5°, are shown from the E side of the harbor. The front light is shown from a square skeleton tower; the rear light is shown from a similar structure.

Naufrage Harbor, 19 miles W of East Point, is a small boat basin entered between breakwaters 12m apart, with a reported depth of 1.5m inside the basin. There is a pier about 213m long in the harbor.

Shipwreck Point Light (46°28'N., 62°25'W.) is shown from a white circular tower situated on the point close W of the harbor. A light is shown from a square skeleton tower on the outer end of the W breakwater.

A road bridge, with a vertical clearance of 3.4m, spans the entrance close within the breakwaters.

6.21 St. Peters Bay (46°27'N., 62°45'W.), 14 miles W of Shipwreck Point, is approached over a sand bar with a depth in the channel of less than 2.4m and entered between encroaching sand spits which leave a narrow, shifting channel with less than 1.2m of water in some parts. The channel takes a sharp turn to the E immediately inside the entrance. The tidal currents in the entrance run at 3 to 4 knots maximum. Local experience and the latest information are essential to enter this bay safely.

Within the entrance, the bay trends ESE for 7 miles, with depths ranging from 3.7 to 5.2m. The village of St. Peters is situated at the head of the bay. Four rivers and some smaller streams flow into the bay. The Morell River, on the S shore about 3 miles from the entrance, is navigable for boats 3 miles upstream. A railway bridge crosses the river near the mouth, and a highway bridge crosses about 0.5 mile farther upstream. The stretch of water between the bridges provides good shelter for boats. The channel is about 30.5m wide and from 2.4 to 4m deep. At the mouth, below the railway bridge, the channel is narrow with only 0.3m depth.

The boat basin at Red Head, 1 mile within the entrance, is entered between breakwaters 29m apart. The dimensions of the basin are approximately 183 by 122m, with a depth of 1.2m within.

Aspect.—Range lights, in line bearing 200°, are shown from the shore on the W side of the entrance to St. Peters Bay. Both front and rear lights are shown from square skeleton towers. The positions of these lights may be altered as necessary to suit the best channel.

A light is shown from a white square tower situated about 0.5 mile W of the entrance.

The channel through the bar and into the bay is buoyed.

Caution.—The range lights and buoys are moved as necessary to suit the changing conditions, and the greatest care is needed.

Prince Edward Island—North Coast—St. Peters Bay to Malpeque Bay

6.22 Savage Harbour (46°26'N., 62°50'W.), 3 miles W of St. Peters Bay, is only suitable for small craft. The entrance lies at the W end of a long sandy ridge, protected by a retaining wall.

Local knowledge is essential.

Savage Harbor public pier, is situated on the W side of the harbor, 0.5 mile inside the entrance.

A public wharf extends 73m from the E side of the wharf to a depth of 1.2m.

A light is exhibited from a red framework tower near the head of the breakwater at the E entrance point of the harbor.

Caution.—The channel is buoyed, but because of changing conditions, the light and buoys may be moved to indicate the best channel through the sand bar. Local information and knowledge are essential before attempting to enter this harbor.

6.23 Tracadie Bay (46°25'N., 63°02'W.), 8 miles W of Savage Harbor, lies at the W end of a range of sand hills, 15 to 18m high. A shifting sand bar extends for 0.5 mile from the entrance, with a depth of 0.9 to 1.5m in the channel, only about 91m wide through the bar. Favorable weather and recent knowledge of the condition of the channel are necessary to cross the bar in safety. The maximum rate of the tidal currents in the entrance is about 2 knots.

Inside the entrance, the channel trends sharply to the E, close to the outer sand spit, with drying flats on the S side which extend E for over 1 mile. Beyond these flats, the bay deepens to about 3.7m and expands to a width of 2 miles. Aquaculture, in the form of mussel farming, occupies a good portion of this part of the bay.Winter Bay is a branch of the harbor extending to the W.

A U-shaped pier, with an outer face 61m long offering depths of 3m alongside near the NE corner where there is 1.5m alongside, is situated on the W shore, about 0.9 mile SE of the harbor. The N face of the wharf is 46m long with depths of 0.6 to 2.4m alongside. Good shelter is reported at this facility.

Grand Tracadie Wharf Light is shown from a 3.7m high mast situated on the outer end of the aforementioned pier (46°24'N., 63°02'W.).

Range lights, in line bearing 186.5°, are shown from the beach on the W side of the harbor entrance. The front light is shown from a white framework tower; the rear light from a red skeleton tower. The lights are visible only when in alignment.

The channel over the bar is buoyed.

Caution.—Due to changing conditions, the range lights and buoys may be moved to indicate the best channel.

6.24 Cape Stanhope (46°26'N., 63°09'W.) lies 4 miles W of the entrance to Tracadie Bay. A reef extends nearly 0.75 mile from the cape to a depth of 5.5m, and 1 mile to the 9.1m line, but on parts of the reef within 0.5 mile of the shore there is only 0.3m of water over the rocks.

Covehead Bay, entered between Cape Stanhope and Cove Head, is navigable for small craft, but the depth on the outer bar is only 0.6m. A highway bridge, with a clearance of 2.7m, crosses the entrance. Close inside the bridge, on the E side, are two small wharves.

Covehead Harbor Light (46°26'N., 63°09'W.), 8.2m high, is shown from a red and white square tower on Cape Stanhope.

Covehead Bridge Light is shown from a mast on the highway bridge and is 2.4m high.

Range lights, in line bearing 194°, are shown from the E shore of the entrance to Covehead Bay. The front light is

shown from a square skeleton tower and is 4.6m high; the rear light is shown from a similar structure. The lights are visible only when in alignment. Due to frequent changes in the channel, these lights cannot always be followed.

Buoys marking the approach channel over the bar may be moved or lifted without advance notice.

6.25 Rustico Bay (46°27'N., 63°17'W.) is entered at the W end of Rustico Island over a shifting sand bar with depths in places of less than 0.6m. The channel is buoyed to suit the best water available, but local experience and the latest information are necessary to enter this bay safely. A causeway is situated at the E end of the island.

The bay branches into several rivers and small creeks. On the W side of the entrance, a breakwater protects the low beach. There are some fishing stages and sheds on the beach at North Rustico Harbor, and a boat basin with a reported depth of 1.2m At North Rustico Village there are two wharves within a basin dredged to 1.2m. The channel leading to this basin is marked by stakes.

North Rustico Harbor Light (46°27.3'N., 63°17.6'W.) is a white tower on the NW side of the entrance.

North Rustico Harbor Light

Rustico Harbor Light is shown from a red skeleton tower on the outer end of the breakwater. Another light is shown on the SE corner of the inner breakwater; the light is obscured when bearing 175°; however, the building which obscures the tower does not obscure the light.

A light is shown from a red skeleton tower on the outer end of the wharf at North Rustico village.

Orby Head (46°30'N., 63°20'W.), a red sandstone headland, 37m high, is bordered by shoal water to a distance of nearly 1 mile. This headline more or less divides the bight on the N side of Prince Edward Island into two parts and forms a good mark from both directions.

6.26 New London Bay (46°31'N., 63°29'W.), 6 miles W of Orby Head, lies at the W end of a long range of sand hills about 17m high. The entrance to the bay, about 0.2 mile wide, is obstructed by a shifting sand bar, with a depth of about 1.5m. Breakwaters protect the entrance on either side. The Hope River, the Stanley River, the Southwest River, and the French River discharge into the bay, and are navigable for short distances for small craft. A highway bridge crosses the Stanley River about 1 mile above the mouth at the village of Stanley Bridge. A wharf, 53m long, extends along the edge of the channel, with a depth of 1.2m alongside.

French River Wharf, 1 mile above the river mouth, is 110m long with a depth of 1.5m at the face. A wharf parallels the highway bridge at New London, 2 miles above the mouth of the Southwest River. It is 67m long with 1.2m of water on the SW side.

Range lights, in line bearing 211.5°, are shown from the beach on the W side of the entrance to the bay. The front light is shown from a square skeleton tower. The rear light is shown from a white square tower.

The channel to the harbor is buoyed. The channel in the French River is marked by stakes; the channel in the Southwest River is marked by buoys and stakes.

Cape Tryon, 1.5 miles NW of the entrance to New London Bay, is a conspicuous cliff of red sandstone 33m high. The coast to the W as far as Cape Aylesbury, at the entrance to Malpeque Bay, is dangerous inside the 12.8m line.

Cape Tryon Light (46°32'N., 63°30'W.) is shown from a white square tower on the extremity of the cape.

Prince Edward Island—North Coast—Malpeque Bay

6.27 Malpeque Bay (46°34'N., 63°42'W.), about 8 miles W of Cape Tryon, is entered through Ship Channel, between Cape Aylesbury and Billhook Island. The bay extends 8 miles inland to within 3 miles of the SW coast of Prince Edward Island. A narrow passage runs NW inside Hog Island for 16 miles, where it expands into Cascumpeque Bay. Malpeque Bay contains several islands; many small rivers and creeks flow into it.

Ship Channel is obstructed by a bar which extends 3.5 miles E from Billhook Island, with depths of 3m in the fairway of the buoyed channel. In bad weather, all signs of the channel are obliterated by heavy breakers. The bottom is of sandstone thinly and unevenly covered with sand. The channel deepens inside the bar, but the depths are very uneven and there are shoals on either side of the fairway. The channel shifts; local experience and the latest information are essential for safe entry.

Mean spring tides rise 1.3m; mean neap tides rise 1m. Mean sea level is 0.5m above datum.

Ice.—The bay freezes about the middle of December and is not usually clear of ice until early May.

Tides—Currents.—In Ship Channel, the tidal flow is from 1 to 2 knots. The currents are strongest just inside Malpeque Harbor and off Royalty Sand. Farther in the bay, the currents are much weaker and seldom reach a rate of 1 knot.

Aspect.—Range lights, in line bearing 233°, situated on the shore SE of Cape Aylesbury, lead in SW from the approach buoy. The front light is shown from a white square tower. The rear light is shown from a similar structure.

Two sets of range lights are shown from Billhook Island. The front light of the inner approach channel range lights, in line bearing 280°, is shown from a square framework tower on Billhook Island. The rear light lies 451m W of the front light.

The lights are visible on the range line only and are shown from April to December.

Malpeque Harbor Range Lights, in line bearing 038.75°, indicate the fairway from Ship Channel into the harbor. The front light, 4m high, is shown from a square skeleton tower. The rear light, 7m high, is shown from a similar structure situated 75m NE of the front light.

Range lights are also shown from the head of Darnley Basin, in line bearing 140.5°, the small inner boat harbor to the SE of Ship Channel. Both front and rear lights are shown from similar square skeleton towers.

Darnley Basin North Light and Darnley Basin South Light are both shown at an elevation of 4.6m from the center span of the bridge at **Burial Point** (46°32'N., 63°40'W.).

Anchorage.—Malpeque Harbor, the area immediately inside Ship Channel and S of Billhook Island, has sufficient room and depth for anchoring. The bar outside prevents the sea from entering; Horseshoe Shoals shelter the anchorage from the W. There are depths of 4 to 18m and good holding ground of sand and clay.

Temporary anchorage can be taken outside the bar in good weather near the approach range line, in depths of 9 to 13m, sand. The anchorage should be cleared on any sign of increasing N winds.

Caution.—The position of these lights is changed to mark the best channel prevailing; they should not be used without the latest local information.

The inner approach channel and the shoal limits in Malpeque Harbor are buoyed.

6.28 Malpeque (46°32'N., 63°41'W.), one of the oldest settlements on the island, is situated on the neck of land between Darnley Basin and March Water. There is a small boat harbor in the cove 0.35 mile S of Royalty Point. The buoyed channel to Darnley Basin leads through Darnley Spit, nearly 1 mile E of Darnley Point.

Depths—Limitations.—The government wharf at the head of Bentinck Cove, in the SW corner of Malpeque Bay, has a reported depth of 1.8m at the outer end. To the SW of Black Point, on the S shore of the Ellis River, is a wharf, 116m long, with a depth of 1.2m at the head. The ruins of two wharves lie downstream from this wharf, one on each side of the river. A small wharf is situated on the S bank of the Ellis River, 2 miles above Black Point.

Port Hill Wharf is situated on the S side of Lennox Channel at the NW end of Malpeque Bay. A bridge, with a vertical clearance of 2.4m, crosses Lennox Channel from Sharp Point to a wharf on Lennox Island, an Indian reserve. A light, 4m high, is shown from a square skeleton tower on the end of the wharf at Port Hill.

On the W side of the Goodwood River at Bideford there is a wharf, 82m long, with a depth of 0.9m at its end. An aquaculture facility is located near the head of the river.

Aspect.—Summerside Air Station is situated 1 mile S of Bentinck Cove at the SW end of Malpeque Bay. Red lights mark the control tower.

The coast between Billhook Island and the entrance to Cascumpeque Bay, 18 miles NW, is formed of sand dunes and beaches from which shallow water extends 0.75 mile to the 5.5m line. The 9.1m contour roughly parallels the shore about 1 mile off. The narrows, an inside passage with very little water, drying in places, connects Malpeque Bay and Cascumpeque Bay.

Conway Inlet, a small entrance through the sand dunes to the inner channel, has but 1m of water over the bar, but due to silting, the depth may be less. It is used by small craft at HW during good weather. There is a small wharf just within the entrance.

Conway Inlet Light (46°39'N., 63°53'W.) is shown from a framework tower, 5m high, situated on the W side of Conway Inlet.

Prince Edward Island—North Coast—Cascumpeque Bay

6.29 Alberton Harbour (46°48'N., 64°04'W.), at the N end of Cascumpeque Bay just inside the entrance channel, is sheltered and has fair anchorage depths for small vessels. The approach is obstructed by a shifting sand bar. The least depth in the channel over the outer bar, about 0.9 mile ESE of Cascumpeque Light, was reported to be about 2.7m, but this is liable to vary. Mariners are cautioned that, under certain conditions of tides and weather, the entrance channel becomes impossible to navigate because of breakers. Inside the entrance there is a clear channel which trends SW for 1 mile, then turns S between Savage Island and Cascumpeque Point.

As the channel through the bar constantly shifts, local knowledge is essential to enter this harbor safely.

Ice.—The harbor usually freezes over in early January, and normally is clear of ice by the first week of April.

Tides—Currents.—The normal maximum rate of the tidal currents in the entrance is 1.5 knots, but in certain conditions they can exceed 4 knots.

Depths—Limitations.—At Gordon Point, near the mouth of the Foxley River, there is a small government pier. The breakwater close E is in disrepair.

Cascumpeque Bay is very shallow, with a maximum depth of 4.9m in the center, surrounded by large areas of very shallow water and drying flats. Several rivers, navigable for some distance by boats, indent the bay. The deepest of these is the Foxley River, with a stretch of channel with depths ranging from 3 to 11.3m extending about 2 miles upstream from the mouth.

See table titled **Alberton Harbour—Berth Information** for details on berthing facilities in the harbor.

Alberton Harbour—Berth Information		
Berth	**Length**	**Depth**
Northport Public Wharf	123m	1.8-4.9m
T-shaped Wharf	38m	2.4-3.0m
Gordon Point Public Wharf	70m	0.6-0.9m

Aspect.—Cascumpeque Light, 18m high, is displayed from a square skeleton tower, situated on the sand hills to the S of the entrance.

Range lights, in line bearing 306.5°, for the outer approach channel, are shown from the sand dunes N of Kildare Point. Both lights are shown from similar square skeleton towers.

Inner range lights, in line bearing 273°, are shown from the shore to the E of Alberton and lead through the buoyed channel to the point of intersection with the harbor range. Both lights

are shown from similar structures consisting of square skeleton towers. The front light is shown from an elevation of 7.6m; the rear light is shown from an elevation of 12.8m.

Range lights, in line bearing 245°, are shown from Northport, and lead from the inner end of the buoyed channel to the wharves at Alberton. The lights are visible only when in alignment.

The entrance channel is marked by buoys from the outer bar to Sandy Island, about 0.5 mile within the entrance.

The range lights and channel buoys may be moved at any time to conform with the best channel leading into the bay. Vessels should not attempt to enter without local knowledge.

Anchorage.—In good weather, temporary anchorage may be had off the outer bar, in about 11m, sand. The anchorage in the channel within the entrance is secure but confined, in about 5.5 to 9.1m.

Prince Edward Island—North Coast—Cape Kildare to North Cape

6.30 Cape Kildare (46°53'N., 63°59'W.), about 5 miles NNE of the entrance to Alberton Harbor, is a cliff of red sandstone about 9.1m high. The surrounding land is red and topped with clumps of trees. There are no high sand hills N of Alberton Harbor. Shoal water extends nearly 1.5 miles from Cape Kildare, and there are irregular depths of 5.5 to 9.1m extending in places to 2 miles offshore along the whole 16 mile stretch of coast from Alberton Harbor to North Cape.

Tignish Harbor, 4.5 miles N of Cape Kildare, at the mouth of the Tignish River, is protected at the entrance by long breakwaters on either side. The channel between them, Tignish Run, is about 46m wide with a least reported depth of 0.9m. At the inner end of this channel is a small craft harbor used by fishing vessels.

A small basin and a public wharf are situated at Jude's Point, on the NW side of the harbor, about 0.4 mile WNW from Big Tignish Light. Depths alongside are from 1.2 to 2.5m.

Two basins, one on the N side and the other on the S side, lie close W of Tignish Run. Depths are from 1.2 to 2.5m.

A disused light tower, a 9.1m high white square structure, stands on the shore adjacent to the N breakwater. Big Tignish Breakwater Light stands on the head of the N breakwater.

North Cape East Light (47°02'N., 63°59'W.), 4.6m high, is situated on the outer end of the S breakwater at Seacow Pond, about 5 miles N of Tignish.

North Cape (North Point) (47°03'N., 64°00'W.), the N extremity of Prince Edward Island, is a low red cliff with reefs and shallow water extending N and E for 1 mile to the 5.5m line and 2 miles to a depth of 9.1m. Irregular depths continue N, terminating in North Cape Reef, 4 miles off, with a depth of 9.8m about 5 miles offshore. This reef is steep-to at its W edge.

North Cape Light is shown from a white octagonal tower.

A radio tower, at an elevation of 83m and marked by red lights, stands on North Cape.

Caution.—North Cape Reef lies outside the lighted buoy moored N of North Cape.

Prince Edward Island—Southeast Coast

6.31 East Point (46°27'N., 61°58'W.), the E extremity of Prince Edward Island, is formed of red sandstone cliffs, 9.1 to 18.3m high. A reef extends about 0.5 mile off the point, and shoal water lies nearly 1 mile further offshore in an E direction. The point shelters the shore from N and NW winds.

North Cape Light

East Point Light

East Point Light is shown from a white octagonal tower, with a white dwelling nearby.

The tidal currents set very strongly toward the point and attain a rate of 2.5 knots over the bordering East Point Reef and

between East Point and the N end of Milne Bank. Tide rips are frequently present off the point.

There is good anchorage, in N winds, SW of East Point as far as South Lake outlet, a distance of 5 miles, with moderate depths of 10 to 15m, red sand bottom.

Milne Bank covers a large area to the S of East Point. The bottom is sandstone thinly covered in places with red sand; the depths vary between 11 to 16.5m over the N part, with a least depth of 9.8m near the S edge of the bank. The E edge of the bank is steep-to and tide rips are frequently seen when the tidal current is flowing to the SW. In strong NE gales, the sea can be very heavy.

From East Point to Basin Head, the coast is formed of sand hills and beaches. South Lake is a narrow shallow pond inside the sand dunes, with a drying outlet. Cliffs commence at Basin Head.

Basin Head Harbour Light (46°23'N., 62°07'W.) is shown from a tower on the outer end of the S breakwater to this small drying boat harbor.

Shallop Rock, drying, lies on a reef extending 0.4 mile S from Red Point. From this point to Colville Bay, the coast is free of detached shoals; the 18.3m line runs parallel to the shore, about 0.5 mile offshore.

From McKinnon Point, about 3 miles WSW of Basin Head Harbour, to Swanton Point, about 3 miles W, the coast is bold and clear.

Prince Edward Island—Southeast Coast—Souris Harbour to Launching Point

6.32 **Souris Harbour** (46°21'N., 62°15'W.), on the E side of Colville Bay, is protected by a breakwater nearly 518m long from Knight Point. It is a public harbor that is administered by the Department of Transport.

The town of Souris, a small community, is a fishing and farming center. A ferry operates to Îles de la Madeleine from April to December. To the NE of Knight Point are two large buildings that are used as food processing plants. The water tower, 0.7 mile N of Knight Point, is prominent.

Ice.—The harbor usually freezes over early in January and is clear of ice by early May.

Depths—Limitations.—The approach channel to the wharf, 91m wide, was dredged to a depth of 6.7m, but is subject to silting.

A small boat basin is situated on the N side of Eastpack Wharf. Depths in the basin are 0.9 to 2.1m.

Souris Terminal—Berth Information		
Berth	**Length**	**Depth**
Public Jetty (S)	280m	—
Public Jetty (N)	240m	6.1m
Eastpack Jetty (S)	100m	3.1m
Ferry Terminal	76m	4.2-4.6m

Aspect.—The water tower, about 1 mile N of Knight Point, is prominent. The dome of the Roman Catholic Church and the spire of the United Church are both conspicuous marks.

Souris Light

Souris East Light is shown from a white square tower with a dwelling nearby on Knight Point, SE of the breakwater.

A light is exhibited from a square skeleton tower near the outer end of the breakwater.

Pilotage.—Pilotage is available but not compulsory. To avoid delay in obtaining a pilot, vessels must report their ETA at the pilot boarding station to "Pilots Souris" via any coastal radio station 12 hours before arrival, at the pilot board station. Confirmation of ETA should be made not more than 6 hours later. Times must be in GMT. The pilot boarding station is in position 46°19'00"N., 62°13'30"W, located 2.6 miles SSE of Swanton Point, the east entrance of Colville Bay.

Souris Harbour—Contact Information	
Port Authority	
Telephone	1-902-687-7209
Facsimile	1-902-687-7210
Email	info@shai.ca
Web site	https://www.shai.ca/harbour-authority

The master of a vessel that is to take departure or make a move must report to "Pilots Souris" 4 hours prior to estimated time of departure. The time should be local time; if GMT is used, it must be expressly specified.

Souris Harbour is under the control of the local authorities everywhere N of a line drawn from Swanton Point to Souris Head, about 1.8 miles WSW.

The Canadian Coast Guard Lifeboat Souris (call sign VO2652) is stationed at Souris and operates within a 50-mile radius from its base. The vessel is operational from about May 1 to November 30. All distress situations should be communicated to JRCC Halifax via the nearest coastal radio station or by any other available means.

Anchorage.—The best anchorage. in a depth of 10.7m, sand, lies about 0.4 mile SW of the head of the breakwater.

6.33 Between **Souris Head** (46°20'N., 62°17'W.), a wooded bluff, and Spry Point, 7 miles to the SW, there are several bays separated by sharp steep headlands and points of red sandstone. Shoal water extends offshore for 0.3 to 0.4 mile. Rollo Bay has a depth of 12.8m over sand, and is a poor an-

chorage with onshore winds. The W side of the bay has less depth because of silting from the Fortune River.

Fortune Bay, an expansion of the river inside projecting sand spits and breakwaters, is only suitable for small craft, and can be navigated by shallow draft boats at HW as far as Fortune Bridge, 2 miles upstream. Inside the breakwater at the entrance is a government wharf 32m long with a head 21m long and a depth of 1.2 to 3m. On the S side of Fortune Bay there is a government wharf 33m long with a depth of 0.9 to 2.7m. Buoys mark the approach channel.

A boat harbor is adjacent to the S wharf; its S face, 88m long, has a depth of 0.6m, the E face, 40m long, dries.

A sector light is shown from a framework tower situated on the N wharf at the entrance to the **Fortune River** (46°20'N., 62°21'W.).

The whole area is subject to rapid silting.

6.34 The **Boughton River** (46°15'N., 62°24'W.), which flows into Boughton Bay, expands inside projecting points to form a shallow harbor. Sand bars build up outside the entrance and sand partly fills the bay. A narrow buoyed channel, with a depth of 0.9m over the bar, leads into the harbor. Boughton River, west of Annandale to Poplar Point, is mostly occupied by aquaculture facilities which impede safe navigation.

Just within the entrance, at Banks Point, there is a government wharf at the town of Annandale, which has a pier head 45m in length with a reported depth of 1.2 to 2.4m alongside. Range lights stand on and behind the point and in line bearing approximately 304° lead through the buoyed channel.

Launching Pond, more than 2 miles S of Annandale, provides shelter for small craft inside a basin which is entered between breakwaters. The entrance channel is subject to silting and the depth was reported to be only 0.3m, with 1.2m inside the basin. Lights are shown from square skeleton towers situated at the outer end of each breakwater.

A public wharf at Chapel Point, on the south shore nearly 3 miles above Annandale, is used primarily to service aquaculture. The wharf extends 76m from the shore to an outer end 13.7m long and 8.3m wide, with a least depth of 0.6 m at the outer face.

Caution.—Vessels should not attempt to enter the Boughton River without local knowledge, and the latest information on the entrance channel, the aids of which maybe shifted without advance notice.

Prince Edward Island—Southeast Coast—Approaches to Georgetown

6.35 **Boughton Island** (46°11'N., 62°24'W.) is joined to the mainland by a sand bar and is surrounded by drying mud banks and ledges. Boughton Point, at the SE end, is a cliff of red sandstone 9.1m high. Shoal water extends 0.5 mile S of the point.

Boughton Ledge, with some rocks above water at its outer end, extends 0.6 mile from the E side of the island, with shoal water continuing for 0.5 mile.

Cardigan Bay, 4 miles long to the mouth of the Cardigan River, and 3 miles wide at the entrance between Boughton Point and Panmure Head, offers good anchorage with offshore winds, in 11 to 18.3m, mud bottom. The Cardigan River flows into the head of the bay on the NW side. MacPhee Shoal and Maitland Flat, on either side, constrict the river mouth, but there is a buoyed channel with a least depth of 6.1m in the fairway for 5 miles above Cardigan Point; small craft can proceed another 2 miles upstream as far as the causeway at the village of Cardigan.

A public pier, with a berth 41m long, is situated near the S end of the causeway. Alongside depths at the outside corner and adjacent to the causeway are 1.8 and 0.3m, respectively.

The navigational aids are moved as necessary to mark the best channel.

Panmure Island, on the SW side of Cardigan Bay, is partly wooded; there are cliffs of red sandstone 12m high along the NE coast of the island. A narrow sand bar, always above-water, runs from Panmure Head to Smith Point, on the mainland. Panmure Ledge, with a depth of 1.5m near the outer end, extends 0.6 mile to the E from Panmure Head. Foul ground extends off Smith Point for about the same distance.

There is a government wharf on the W side of Panmure Island, with a small boat basin which was in a state of disrepair and not in use in 1990.

Panmure Head Light (46°09'N., 62°28'W.) is shown from a white octagonal tower with a dwelling nearby.

A lighted buoy is moored nearly 1 mile NE of Panmure Head Light.

6.36 **Inner bays.—**Livingstone Bay, Sturgeon Bay, and St. Marys Bay have a common entrance between Panmure Spit and the shoal off Grave Point. The entrance is narrow and shoals rapidly from a depth of 9.1 to 3.4m in places. The channel is intricate and local knowledge is essential for safe navigation. The three bays shoal to very little water towards their heads.

There is a wharf on the S side of Sturgeon Bay; the length of the berth is 18m, extending to a depth of 0.6m. Another wharf, 58m long, adjoins the end of the highway on the E bank of the Sturgeon River. There is a dredged channel, marked by stakes, leading to this wharf. There was a least depth of 0.6m leading to this wharf, but the extreme outer ends dry alongside.

6.37 **Georgetown Harbour** (46°11'N., 62°32'W.) (World Port Index No. 5740) is situated on the SW side of the headland which terminates in Cardigan Point (Burnt Point), just below the junction of the Brudenell River and the Montague River. Thrumcap Spit protects the harbor on the SE side and forms a small bay, bounded on the W side by Gaudin Point and its projecting sand spit.

Ice.—The harbor usually freezes over in late January and is clear of ice by the middle of April.

Tides—Currents.—Mean spring tides rise 1.9m; mean neap tides rise 1.6m. The velocity of the tidal currents in the harbor rarely exceeds 0.75 knots.

Depths—Limitations.—Panmure Spit extends 0.35 mile NW from Billhook Point. Cardigan Shoal, on the N side of the approach, projects nearly 1 mile SW from Cardigan Point. The buoyed channel, about 0.2 mile wide, with a least depth of 8.2m at this point, passes between these shoals. Knoll Shoal, with a least depth of 2.7m, lies 0.5 mile NE of Grave Point, to the NE of the fairway. It is marked on the SW side by a lighted buoy.

East Isle Shipyard carries out steel and aluminum ship building, ship repair and refit, and other heavy industrial fabrication. Ships to 14m in length are constructed and there is a 680-ton marine railway.

Georgetown Marine Terminal—Berth Information		
Berth	**Length**	**Depth**
No. 01	153m	8.0m
No. 02	42m	8.0m
No. 03	164m	8.0m
No. 04	70m	3.0-6.0m
Department of Fisheries and Oceans Pier (West)	66m	7.9m

Aspect.—Range lights are shown from the SW side of the entrance to Georgetown Harbor. The front light is shown from a circular tower on St. Andrew Point (Wightmans Point). It is reported that the lights are visible only when in alignment. Mariners are cautioned that an abandoned lighthouse is situated about 65m S of the front light. The rear light is shown from a square tower, 11m high. These lights, in line bearing 280°, lead between Cardigan Shoal and Panmure Spit.

A light is shown from a small tower on the roof of the freight shed on the railway wharf at Georgetown.

Three oil tanks are situated at the inner end of the Railway Wharf.

Pilotage.—Pilotage is available but not compulsory. To avoid a delay in obtaining a pilot, the masters of ships bound for Georgetown must report via any coast station by radiotelephone or radiotelegraph their ETA to "Pilots Georgetown" at least 12 hours prior to arrival at the pilot boarding station. The ETA must be confirmed or corrected not more than 6 hours later. The time used must be UTC. The pilot boards at position: 46°08.5'N, 62°20.6'W. VHF channel 16 is used.

The master of a vessel that is to depart or make a move within the compulsory pilotage area must report to "Pilots Georgetown" 6 hours prior to such ETD. Time used should be local. If UTC is used, it must be expressly stated.

Contact Information.—For contact information see the table title **Georgetown Harbour—Contact Information**

Georgetown Harbour—Contact Information	
Port Authority	
Telephone	1-902-652-2770
Facsimile	1-902-652-2915
Web site	https://www.georgetownport.ca

Anchorage.—Between Cardigan Shoal and Knoll Shoal, there is anchorage, in depths of 8 to 9m, mud. The best anchorage inside the harbor is between Thrumcap Spit and Gaudin Point Spit, in about 9.1m, with the outer end of Queens Wharf in line with the square tower of the Anglican Church, an alignment of 011°, having good holding ground. Smaller vessels can anchor closer to the shore according to draft. There is also good anchorage upstream near Brudenell Point. The rate of the tidal current is less than 1 knot.

Above Georgetown, the Brudenell River and Montague River unite at Brudenell Point. The Brudenell River is navigable as far as Brudenell Islet, 1.25 miles above the mouth, and small craft can navigate as far as the head of tide, about 3 miles farther upstream.

6.38 **Montague** (46°10'N., 62°38'W.) is situated on both sides of the river, 4 miles upstream from Brudenell Point. The buoyed channel up the river has a depth of about 3m, subject to silting, and there is about 2.4m of water in the turning basin at the government wharf. Silting occurs, especially towards the W end of the basin. Several aquaculture facilities are located along the shores of Georgetown Harbour, Brudenell River, and Montague River. Caution should be exercised in navigation. Many small craft anchorages may not be accessible.

Montague—Berth Information		
Berth	**Length**	**Depth**
Montague Town		
East Public Wharf	104m	2.7m
West Public Wharf	49m	2.1m
Lower Montague		
Public Pier (46º10'N, 62º34'W)—outer face	24m	2.7m (reported)
Public Pier sides	40m	0.3-2.7m

An aquaculture facility is situated off White Point, at the head of the entrance channel, and also in the center of St. Marys Bay.

The Port Authority can be contacted by telephone (1-902-838-4772).

Prince Edward Island—Southeast Coast—Smith Point to Cape Bear

6.39 Between **Smith Point** (46°07'N., 62°28'W.) and Terras Point (Cape Sharp), about 1 mile SSE, a shoal extends about 0.6 mile offshore. Graham Ledge is situated about 6 miles SE of Terras Point and has a depth of 1.6m. The depths between Panmure Head and Graham Point are very irregular within 3 miles of the shore.

Graham Pond provides shelter for small boats. The entrance through the sand bar is between breakwaters 10m apart. The depth at the entrance was reported to be 0.9 to 1.2m.

Murray Harbour (46°01'N., 62°30'W.) is formed by the junction of five rivers which expand into a partially-drying shallow basin, that contains five wooded islands joined together at LW by drying mud flats. Poverty Beach, a sand spit extending S from Cody Point (Irvings Cape) for over 1.5 miles, closes the basin except for the narrow entrance passage between Sable Point, the S end of Poverty Beach, and Beach Point (Oldstore Point), a projecting spit on the S side of the channel.

A sand bar, with a depths of 0.6m-2.4m in the channel through it, extends to seaward for over 1 mile from the entrance. This channel is sometimes impassable in E winds because of the line of breakers which may extend from Cody Point to Murray Head.

Tides—Currents.—The combined tidal and current flow runs at 2 knots at Beach Point.

Aspect.—Inside the bar, the channel contracts to a width of little more than 90m, expanding again inside Beach Point. The depth increases gradually to a maximum of about 7.9m off the steep-to sandy beach of Beach Point.

Range lights, in line bearing 234° at the entrance, lead over the bar and through the channel to within about 0.2 mile of Beach Point. The front light is shown from a white square tower on Beach Point. The rear light is shown from a similar structure on Penny Point.

The approach channel is marked with lighted buoys. Inside Beach Point, the main channels are marked by lighted buoys, casks, spar buoys, and numerous stakes.

Murray Harbour village is situated at the head of navigation on the South River, 2 miles above Beach Point. A channel about 30m wide, in two courses, dredged to 2.7m, leads from a point 0.5 mile WSW of Sable Point to the government wharf at the village. The outer course is marked by lighted buoys and range lights to the entrance of the South River; the inner mile of channel is marked by stakes and another set of range lights.

The outer set of lights are shown from the shore near Machons Point. The front light is shown from a red skeleton tower. The rear light is shown from a similar structure. This range is in line bearing 273°.

The inner pair of range lights, in line bearing 233.5°, are shown from the shore near the village at the head of navigation. The front light is shown from a skeleton tower; the rear light is shown from a similar structure. The lights are visible only when in alignment.

Depths—Limitations.—The government wharf at Murray Harbour on the NW side of the channel is composed of four sections paralleling the channel; the sections are 22m, 73m, 55m, and 61m in length. There are depths of 1.8 to 2.4m alongside. The outer part dries at the extreme E end. On the opposite side of the river is a government wharf, with a face 61m in length and depths of 0.9m at the W end to 2.4m at the E end.

About 0.3 mile SW of Machons Point there is a government wharf extending to a depth of 1.2m.

Murray River Village, at the head of navigation on the Murray River, has a government wharf on the S shore with a berth 64m long and a depth, in the central part of the wharf of 1.8m. The E end dries and the bridge has a depth of 0.6m alongside.

On the Mink River, opposite the mouth of the Greek River, there is a wharf that has an L-shaped berth, 12m long, having a depth of about 2.1m at the outer end. An adjoining wharf has an outer end 11m wide, with depths of 0.3 to 0.9m alongside. Several private moorings lie off the ends of these wharves. Cahoon Wharf, on the Greek River, is 65m long and 15m across the face of the L-shape, with a depth of 1.5m alongside its head. The shallow channels to these wharves may not always be marked by buoys or stakes.

The church spire at Murray Harbour North, 0.7 mile WNW of Irvings Cape, is conspicuous.

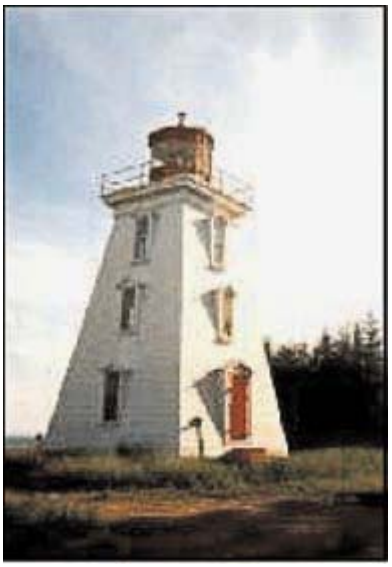
Between Beach Point and Penny Point, on the S shore inside the harbor entrance, there is a government wharf with a pier head 24m in length. There is a boat slip near the center of the wharf. A staked channel leading to the pier head had a reported depth of 2.1m.

A light is shown from a square skeleton tower on the end of this wharf.

Clay and sandstone cliffs, about 12.2m high, run W from Murray Head toward Beach Point, and to the S toward Cape Bear.

Caution.—Aids to navigation may be moved without advance notice because of the continuous silting. This harbor should not be entered without local assistance and the latest information concerning channel depths, positions of buoys, and range lights.

6.40 Cape Bear (46°00'N., 62°28'W.) is the SE point of Prince Edward Island. A large rock, 3.7m high, lies close under the cliffs of red sandstone, and another rock 2.1m high lies close off a point 0.6 mile SW of Cape Bear. A light is shown from the cape from a white square tower.



Cape Bear Light

Bear Reef, of sandstone and large stones, extends 0.75 mile E from the coast between Murray Head and Cape Bear to the 5.5m line, and 1 mile to 9.1m. There is little water over most of this extensive reef.

Fishermans Bank, 8 miles E of Murray Head, is sandstone thinly covered with stones, gravel, and broken shells. The general depth over the bank is 11 to 16.5m, but there are two small areas near the central part of the bank with depths of 7.3m and 9.1m.

Caution.—Vessels should keep in depths greater than 18m when in the vicinity of Cape Bear.

Northumberland Strait

6.41 Northumberland Strait, about 160 miles long and from 5.5 to 30 miles wide, separates Prince Edward Island from the N and E shores, respectively, of Nova Scotia and New

Brunswick. The E approach of the strait lies between Prince Edward Island and Cape Breton Island, about 30 miles to the E. The least depth in the middle of the fairway is 12m; the navigable breadth of the narrowest part, Abegwait Passage, off **Cape Tormentine** (46°08'N., 63°46'W.), is 5.5 miles.

The S shores of Northumberland Strait from Cape George, Nova Scotia, at the E entrance of the strait, to Escuminac Point, New Brunswick, at the W entrance, are also indented by many bays and coves. At the E end the coast rises to a ridge of hills about 305m high, but generally the coast consists of low cliffs. Many rivers flow into the strait.

Because of the strong and variable tidal currents encountered in Northumberland Strait, very careful navigation is required.

Dense fogs seldom occur in Northumberland Strait. The prevailing SW wind of summer loses much of its moisture in passing over the land of Nova Scotia, and becomes a warm dry wind off its N coast. It acquires its moist and foggy character long before reaching the N shore of the gulf and frequently before reaching the Iles de la Madeleine.

Ice.—In a normal winter the ice builds up gradually along the S side of the estuary, spreads E from the New Brunswick coast through Northumberland Strait during the first half of January, and then gradually fills the SW half of the gulf from the Gaspe Peninsula to Cape Breton Island by the early part of February.

In December and January, new and gray ice is prevalent everywhere, with thickness up to 0.15m. Floe size is generally under 91m and impedance to navigation arises only from ice sticking to a vessel's bow. In February, gray-white ice, 0.15 to 0.3m thick, becomes more common and in cold winters, white ice, 0.3 to 0.75m thick becomes the prevalent type. By March, this white ice is common even in a normal winter, but some proportion of the thinner categories is usually present because the ice is continually moving about.

Tides—Currents.—In the W entrance to the Northumberland Strait, there is a weak SE set into the strait, part of which eddies out again near the shore of Prince Edward Island. This weak SE set persists throughout the central part of the strait and is directed towards St. Georges Bay. In the E entrance there is an inset on the W side, part of which eddies N farther inshore, but which is mainly directed also towards St. Georges Bay.

Prior to the construction of the causeway across the Strait of Canso, there was a fairly strong set through the strait from St. Georges Bay towards the Atlantic Ocean. The former outset through the Strait of Canso has been replaced by a fairly strong NE outset along the shore of Cape Breton Island.

Under settled weather conditions the currents in the vicinity of Cape Tormentine and Port Borden are weak and somewhat uncertain in direction. In the Gulf of St. Lawrence, minor oscillations in sea level, generated by changes in meteorological conditions, are a frequent occurrence even in the summer months. There is a transport of water through Northumberland Strait, associated with these oscillations, which temporarily dominates the long-term flow. With the major meteorological disturbances, which generate storm surges, these temporary current movements will be strong and could reach rates of 2 knots between Cape Tormentine and Port Borden. These currents will be alternately W and E for periods of 12 to 14 hours, which approximately coincide with the periods during which sea level is raised and lowered by the surge.

In Northumberland Strait, the characteristics of the tide and of the tidal current differ, in that there is a relatively large diurnal component in the former and only a fairly insignificant one in the latter. In consequence, there is no constant relationship between the occurrences of slack, or turn, of the tidal currents. The intervals between the two sets of occurrences will vary with astronomical conditions.

In the middle and N parts of the strait between Cape Tormentine and Port Borden, the tidal currents commence to flow E about 55 minutes before LW at Yarmouth, and W about 35 minutes before HW at Yarmouth. In the shallow water near the Tormentine shore, in charted depths of about 9.1m, the currents turn about 1 hour earlier than in mid-channel and even closer to the shore may turn still earlier. To the W, in the whole area between Richibucto Head and Cape Egmont, the currents turn at about 30 minutes before the times of HW and LW at Yarmouth.

The horizontal flow is the result of tidal flow and current. The currents vary considerably with astronomical conditions and have quite appreciable effects upon the times at which SW of the resultant occur.

The tidal currents have their greatest rates, just over 2 knots, in the more restricted parts of the strait, that is between Cape Tormentine and Port Borden, between Cape Pele and Cape Egmont, and farther to the W, between Richibucto Head and West Point.

Directions.—Vessels proceeding through Northumberland Strait from the E should steer to clear Fishermans Bank, and then round the **Wood Islands** (45°57'N., 62°45'W.), at a distance of about 3 miles. From a position about 7 miles SSW of **Prim Point Light** (46°03'N., 63°02'W.) a vessel can steer directly through Abegweit Passage to a position about 3.5 miles S of **Cape Egmont** (46°24'N., 64°08'W.). A vessel should then proceed approximately NE, midway between the cape and Egmont Bank, to pass about 3 miles off West Point.

Northumberland Strait—North Side

6.42 The S coast of Prince Edward Island, from **Cape Bear** (46°00'N., 62°28'W.) to the Wood Islands, is formed of sandstone cliffs, in some places 12.2 to 15.2m high. There are few beaches or landings and no harbors along this very exposed stretch of coast. The 11m curve nearly parallels the shore at a distance of 0.5 mile, until approaching the Wood Islands, where the shallow water extends 1 mile from shore.

There is a nearly drying sand spit at White Sands, about 4 miles WSW of Cape Bear, which affords some shelter to boats, and a sandy shoal extends 0.5 mile offshore. The edge of this shoal is steep-to.

Little Sands Wharf at **McLean Cove** (45°58'N., 62°39'W.) is 52m long, with 0.9m of water off the inner face and 2.4m alongside the outer face. This is the only shelter between Cape Bear and the Wood Islands available at all stages of the tide for small boats. The wharf was reported to be in a state of disrepair.

Northumberland Strait—North Side—The Wood Islands to Prim Point

6.43 The **Wood Islands** (45°57'N., 62°45'W.) are separated by the dredged channel leading to the ferry terminal. They

present sandstone cliffs to seaward, and the W island is joined to the main coast by a long sand bar with low dunes upon it. A road connects the mainland with the ferry wharf and the E island.

Depths—Limitations.—The terminal for the Caribou-Wood Islands Ferry lies in the enclosure between the islands and the connecting sand bar and road. Guard piers, each 183m long, protect the entrance channel, which is 61m wide. The approach to the ferry dock is 146m wide and dredged to a limiting depth of 4.3m. There are two ferry berths with depths up to 4.6m alongside.

On the E side of the ferry berths there is an L-shaped wharf, 170m long, which encloses a small craft harbor. The NW side of the wharf is used to land fish. Depths alongside are from 1.2 to 3.7m. A shallow patch, with depths of 1.2m, lies close off the SW face of the wharf. Depths within the harbor are about 2.1m.

Aspect.—Wood Islands Light is shown from a white square structure, with a dwelling attached, on the S side of the E island.

Range lights, in line bearing 002.5°, are shown on the E training pier. The front light is shown from a white square structure; the rear light is shown from a similar structure. The lights are visible only when in alignment.

Anchorage.—There is good anchorage in NW winds within 1 mile E of the Wood Islands, in depths of 5.5 to 16.5m, mud, according to draft.

Note.—Submarine cables, originating from the vicinity of position 45°46'N, 62°47'W, cross the strait, terminating at South Point and 1.5 miles W of South Point.

6.44 Indian Rocks (45°56'N., 62°47'W.) lie parallel to the coast between the Wood Islands and Bell Point, with their S edge being 1.5 miles offshore. They dry in several spots near the W side. The area with less than 1.8m depth extends over 0.5 mile E and W, and about 0.3 mile N and S. The water is deep close S of these rocks, and breakers and tide rips are almost always present on the drying part. Tidal currents in the deep water close outside Indian Rocks frequently run at 3 knots.

The channel between Indian Rocks and the shoal water inshore is 0.5 mile wide, but depths are irregular and tidal currents strong, and it should only be used, with local knowledge, by small craft.

Bell Point, about 3 miles WNW of the Wood Islands, is a sandstone cliff, 9.8m high.

Bell Point Reef, with a least depth of 1.2m, lies 0.7 mile S of the point and from there it extends about 0.8 mile to the E. The outer edge of this reef is steep-to, and it should be given a wide berth.

The Belle River, 1 mile NW of Bell Point, has a small tidal harbor with a drying bar at the mouth. There are breakwaters on either side of the entrance and also several small wharves in the harbor with depths at their outer ends of 0.3 to 1.2m.

Rifleman Reef extends 2 miles SW from Stewart Point. Near the outer point of the reef is a depth of 2.4m and there are several patches of 1.5 to 1.8m between it and the shore. The soundings off Rifleman Reef are very irregular; the deep water close to it gives no warning of the presence of the reef. It should be given a wide berth.

The Flat River, 2.5 miles NW of Stewart Point, is only suitable for small boats. Shoal water extends 1 mile SW from Jenyns Point, the SE entrance point of the Flat River.

6.45 Pinette Harbour (46°03'N., 62°56'W.) is obstructed by Pinette Shoals, which extend 2 miles SW from Pinette Point. These shoals have depths of 1.2 to 1.8m just within their outer edge.

The harbor has a dangerous bar at its entrance, which dries in places. There is a channel over this bar with a reported depth of 1.5m.

McAulay Wharf, about 1 mile above Pinette Point, has depths of 0.9 to 2.1m on its E side. There is a wharf at the village of Pinette, 1.5 miles above Pinette Point. The wharf is situated at the highway bridge across the Middle Pinette River. The W portion, parallel to the channel, is 38m long with depths of 1.2 to 3m alongside. The E part is 30m long with depths of 0.6 to 2.1m alongside.

The dredged channel is marked by stakes. The bridge spanning the entrance to the Middle Pinette River and Middle Creek at Selkirk Point has a vertical clearance of 1.2m.

Range lights, in line bearing 018°, are shown from Pond Point at Pinette Harbor. The front light is shown from a square skeleton tower. The rear light is shown from a similar structure.

Caution.—Considerable silting has been reported in the approaches to the Pinette River. Local knowledge is essential.

Northumberland Strait—North Side—Approaches to Charlottetown

6.46 Hillsborough Bay, 7 miles wide at the entrance between Prim Point and St. Peters Island, opens into a broad expanse of water with many shoals and rocks. The NE part of the bay is seldom used by shipping, except the local fishing vessels, and its navigation should not be attempted without local knowledge or the services of a pilot.

A deep channel leads from the middle of the entrance to the bay and Charlottetown, the principal harbor and capital of Prince Edward Island.

Prim Point (46°03'N., 63°02'W.) the SE entrance point of Hillsborough Bay, presents low sandstone cliffs, 3 to 4.5m high, to seaward. Prim Reefs extend for 2.5 miles W from the point, and cover a large area to the N and S as well.

Prim Point Light is shown from a white circular tower situated close within the point.

Aspect.—Orwell Bay, the SE arm of Hillsborough Bay, leads to the Orwell River, the Vernon River, and the Seal River. From Cameron Island to the NE, the drying shore bank increases in width until it stretches halfway across Orwell Bay.

Rocks, awash at LW, extend offshore for over 1 mile W from Buchanan Island.

Boats can ascend the Vernon River through a channel marked by stakes, as far as Vernon Bridge, where there is a government wharf, 38m long with a depth of 0.6m at the face. There is a staked boat channel up the Orwell River for more than 1 mile.

Pownal Bay is shallow and exposed to W winds. A large part of it dries, but there is some shelter for small craft near its head.

6.47 Governors Island (46°08'N., 63°04'W.), low and

Prim Point Light

partly wooded, is surrounded by shoals, reefs, and foul ground. Governors Shoal extends SW from the island for 2.5 miles, with many rocks and hazards. A submerged crib, with a depth of 0.3m, lies 1 mile SW of the island. Fitzroy Rock, with a depth of 6.1m, lies nearly 2 miles SW of the S point of Governors Island and is of considerable danger, especially in poor visibility.

Squaw Bay, NE of Governors Island, provides good anchorage for small vessels, in depths of 2.7 to 4.6m, mud.

6.48 St. Peters Island (46°07'N., 63°11'W.), located on the W side of the entrance to Hillsbourgh Bay, is of moderate height and fronted on the E side by cliffs of red clay and sandstone, 10.7m high. The central part of the island is wooded. St. Peters Shoals extend up to 2 miles off the island and St. Peters Island Bar, drying 0.3 to 1.2m, joins the island to Rice Point. St. Peters Spit dries for over 1 mile from the NE point of the island and continues for another mile with depths of 0.3 to 0.6m.

St. Peters Road is sheltered by the island and spit, but with depths of 3 to 5m, it is only suitable as a small vessel anchorage.

Bacon Cove, at the SW end of St. Peters Road, dries at LW, but there is a small wharf on the S side. A channel dredged to 1.2m, marked by buoys, leads to the wharf. The depth alongside the outer end, 40m long, of the L-shaped pier is 0.3 to 0.9m.

St. Peters Island Light is shown from a square tower on the SE side of the island.

A light is shown from a square skeleton tower on the outer end of the wharf at Bacon Cove.

Chartlottetown Harbour (46°14'N., 63°08'W.)

World Port Index No. 5750

6.49 Charlottetown, the principal port and capital of Prince Edward Island, lies at the junction of the Hillsborough River, the Yorke River (North River), and the Eliot River (West River) and N of the head of Hillsborough Bay. From seaward the habor entrance is practically obscured.

The approach channel leads from Northumberland Strait, NNE between St. Peter Island and Governor Island, then NNW to the outer harbor entrance between Blockhouse Point and Seatrout Point.

The city is built mainly on the W bank of the Hillsborough River, at its junction with the Yorke River. The harbor is spacious and deep in the anchorage off the wharves, where the channel is nearly 0.3 mile wide.

The main imports are aggregates, petroleum products, and fertilizers. Potatoes are exported.

Ice.—The harbor usually freezes over about the end of December and is clear of ice by late April.

Tides—Currents.—Mean spring tides rise up to 2.8m and mean neaps rise up to 2.4m. The tidal currents usually run at a rate of 2.5 knots in the harbor entrance and 1.75 knots off the waves. They continue to run for about a 15 minutes after HW and LW.

Depths—Limitations.—The channel leading through Hillsborough Bay to Charlottetown Harbor is in two reaches. The outer reach is 0.3 mile wide, with a least depth of 11m in the vicinity of Fitzroy Rock.

Throughout the remainder of the approach the fairway is wider, with average depths of more than 15.2m. Inside the harbor there are depths of 12.8 to 18.3m off the wharves and depths of 6.1 to 9.1m in the entrance to the Eliot River.

Charlottetown Harbour—Weather Characteristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Sea Level Pressure (millibars)												
Mean	1013	1012	1012	1013	1014	1013	1014	1016	1016	1016	1014	1013
Temperature (°C)												
Mean	-7.2	-7.5	-3.0	2.7	9.2	14.8	18.8	18.4	14.0	8.6	3.1	-3.6
Mean daily maximum	-3.3	-3.4	0.7	6.5	13.8	19.4	23.1	22.7	18.0	12.2	6.1	-0.2
Mean daily minimum	-11.3	-11.7	-6.7	-1.1	4.5	10.1	14.4	14.1	9.9	5.0	0.0	-7.2
Extreme high	12.5	12.2	15.6	26.7	31.7	31.7	33.3	36.7	31.1	26.7	21.0	16.7

Charlottetown Harbour—Weather Characteristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Extreme low	-30.6	-29.2	-27.2	-16.1	-6.7	-0.6	2.8	3.9	-0.6	-5.6	-15.0	-27.8
Relative Humidity (per cent)												
Mean	86	83	86	80	72	77	78	79	78	82	85	84
Cloud Cover (tenths)												
Mean	7.4	6.8	6.7	6.9	6.8	6.7	6.1	6.4	5.8	6.4	7.8	7.5
Precipitation (millimeters)												
Mean	97.1	82.3	83.1	88.3	94.2	87.5	78.5	90.1	91.9	112.4	115.0	116.7
Maximum in 24 hours	64.0	51.6	54.6	56.6	63.8	72.6	63.0	87.6	163.8	97.8	59.4	58.4
Mean amount of snow (cm)	67.4	56.0	48.1	28.1	3.5	0	0	0	0	2.8	18.4	60.5
Mean number of days with precipitation	18	13	15	13	13	12	11	12	12	13	17	18
Mean number of days with snow	14	12	11	5	1	0	0	0	0	<0.5	4	13
Wind Speed (knots)												
Mean	12.2	11.5	12.2	10.9	10.2	9.6	8.4	8.7	9.3	10.2	10.9	11.4
Mean number of days with gales	1	1	1	<0.5	0	0	0	<0.5	0	<0.5	<0.5	1
Wind Direction (percentage of observations)												
North	7	6	10	10	8	6	4	4	6	6	5	3
Northnortheast	5	5	8	8	6	5	3	3	4	4	5	4
Northeast	4	5	8	7	5	6	4	4	4	4	4	4
Eastnortheast	4	3	4	4	3	2	2	2	2	4	4	3
East	5	4	4	5	4	4	3	3	3	3	4	3
Eastsoutheast	3	3	3	3	4	3	2	2	2	2	2	2
Southeast	2	3	3	3	4	3	3	3	3	3	4	3
Southsoutheast	3	3	3	4	5	4	4	3	3	3	5	3
South	3	3	3	5	7	7	9	6	5	5	5	4
Southsouthwest	4	4	3	6	8	10	12	9	9	7	6	5
Southwest	5	5	5	7	10	13	16	16	13	10	6	6
Westsouthwest	10	12	8	8	12	18	16	18	15	14	11	14
West	18	18	10	8	7	7	8	11	12	15	19	20
Westnorthwest	12	11	9	5	4	2	3	5	6	8	10	12
Northwest	6	7	7	6	4	3	3	4	5	4	4	5
Northnorthwest	6	5	9	8	6	4	4	7	5	5	4	4
Calm	3	3	3	3	3	3	4	3	3	3	2	3
Wind Speed (mean speed in knots)												
North	14.0	14.0	13.5	12.9	11.9	11.5	8.9	8.6	10.6	10.9	12.2	12.5
Northnortheast	15.5	14.2	14.4	13.7	12.1	11.5	8.5	9.6	10.3	12.0	13.5	13.0
Northeast	16.0	12.9	15.1	13.3	10.4	10.5	8.6	9.8	10.9	10.8	12.4	13.7

Charlottetown Harbour—Weather Characteristics												
Weather Element	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Eastnortheast	14.2	13.1	13.1	11.6	10.0	9.9	8.4	8.5	8.9	10.9	12.6	12.4
East	11.3	11.6	10.8	9.0	10.4	8.2	6.5	8.2	7.4	7.0	8.8	10.4
Eastsoutheast	14.9	13.0	12.9	10.5	9.6	8.5	7.5	7.8	8.0	10.1	9.7	12.5
Southeast	11.3	10.2	10.8	8.7	8.2	7.5	7.5	7.6	7.8	9.9	10.4	13.0
Southsoutheast	10.7	9.6	9.2	9.6	9.3	7.8	7.8	7.7	8.0	9.7	11.1	10.2
South	10.0	8.2	8.2	8.2	8.2	7.1	7.4	7.6	7.6	8.8	10.6	9.8
Southsouthwest	9.7	9.1	9.1	9.6	8.9	8.8	8.6	8.3	8.9	9.7	10.8	9.1
Southwest	9.2	8.9	9.6	9.1	9.7	9.6	9.0	8.9	9.7	10.1	9.7	9.9
Westsouthwest	11.3	11.8	12.0	10.9	11.9	11.4	10.2	10.3	10.6	11.1	10.7	12.1
West	12.5	11.4	12.4	10.4	11.0	10.1	9.3	9.1	9.3	11.1	11.3	12.0
Westnorthwest	13.4	12.5	13.7	11.9	12.0	10.6	8.9	8.4	9.8	11.0	12.0	12.5
Northwest	11.9	12.5	11.7	11.2	11.4	9.8	8.3	9.2	9.5	10.8	10.9	10.8
Northnorthwest	14.8	13.2	14.2	12.9	13.0	11.6	9.7	9.9	11.0	11.5	12.4	12.0
Visibility												
Days with visibility = or < 1,000m	3	3	3	5	4	5	2	3	2	3	1	2
Temperature and precipitation data courtesy of Environment Canada												

Charlottetown—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
South Berth	183m	13.0m	Cruise vessels, breakbulk, and liquid cargo. Maximum loa of 220m.
East Berth	150m	7.0m	Breakbulk and liquid cargo.

Spithead Shoal and Squaw Shoal, with depths of 2.4 and 3.3m, respectively, near the edge of the channel, lie about 2 miles SSE of the entrance near the junction of the first reach and the second reach.

Within the entrance the channel is steep-to with depths of 2.4 to 3.7m off Battery Point and 0.6 to 4.0m to the N of Blockhouse Point.

Pilots will take vessels up to 175m in length, with a maximum draft of about 9.8m, into the harbor under good conditions. The Charlottetown Marine Terminal is 240m long with an outer face 183m long with depths of 11.8 to 13m alongside. Water and oil pipelines are laid onto the wharf. Mariners are advised that the two mooring buoys adjacent to the east and west sides of the Charlottetown Marine Terminal are used for mooring purposes only, and not winching. It is recommended that all cruise ships over 152m length overall that use the south side berth of the terminal use the services of a tug no less than 1200 B.H.P., to assist in berthing and holding the ship to the berth when necessary during strong winds.

Mooring dolphins have been placed at the outer end of a public park, to the SW of the marine terminal. There are depths of 7.9m in the berth, which is used for small vessels.

The Canadian Coast Guard marine depot wharf is 107m long and 91m wide with a depth of 9.8m at the outer face. A marina is situated between the oil berth and the Coast Guard wharf. The Charlottetown Yacht Club is situated close W of the Coast Guard wharf.

The Hillsborough River is bridged just above the harbor. The navigation span has a vertical clearance of 4m and small vessels can navigate the river for several miles above the port. The piers of a former bridge lie close SW of the present one.

Aspect.—The twin steeples of the Roman Catholic Cathedral are easily identified. The spires of St. Pauls Church and St. James Church are also prominent. A chimney, 63m high, at the power station N of the railway wharf and marked with red obstruction lights, is conspicuous.

A radio tower, 80m high and marked by obstruction lights, is situated about 0.8 mile W of Blockhouse Point.

Approach range lights are shown from Haszard Point, about 2 miles E of Seatrout Point. These lights, in line bearing 019.5° and visible only when in alignment, lead up the bay, close W of Fitzroy Rock, to the intersection of the Brighton Point range lights.

Brighton Point Range Lights, for the inner reach, are shown from the E shore of the Yorke River entrance. The front light is exhibited from a white square tower; the rear light is exhibited from a hexagonal tower. These lights, in line bearing 337°, lead between Spithead and Squaw Shoal, through the entrance of the harbor to the intersection of the Warren Cove Range Lights. These lights are visible only when in alignment.

Charlottetown Harbor

A lighted buoy is moored SW of Fitzroy Rock and close E of the line of the Haszard Point Range Lights.

Blockhouse Point Light (46°11'N., 63°08'W.) is shown from a white square tower, with a dwelling attached.

Range lights are shown on the S side of Warren Cove. The front light is exhibited from a white square tower; the rear light is exhibited from a similar structure. These lights, in line bearing 197.5°, lead to the wharves at Charlottetown.

Pilotage.—Pilotage is compulsory. Masters of vessels bound for Charlottetown must report via any coastal radio station their ETA to Pilots Charlottetown 12 and 6 hours prior to arrival at the pilot boarding station, which is located at position: 46°00'N, 63°08'W. The master of a vessel that is to depart or move within the compulsory pilotage area must report to Pilots Charlottetown 6 hours before the ETD.

The time used should be local time. If UTC is used, it must be expressly stated.

Contact Information.—See the table titled **Charlottetown—Contact Information.**

Charlottetown—Contact Information	
Port Authority	
Telephone	1-902-556-7974
Facsimile	1-902-566-7980
Web site	https://www.portcharlottetown.com
Harbormaster	
Telephone	1-709-664-3411

Anchorage.—There is good anchorage, in depths between 8 and 17m in the area in which the three rivers meet, but the usual anchorage is off the wharves, where the channel is more than 0.2 mile wide, with depths of 12 to 18m.

Northumberland Strait—North Side—Rice Point to Summerside

6.50 Rice Point (46°08'N., 63°13'W.), on the shore just within St. Peters Island, marks the shift in the coast from Hillsborough Bay to a straight and nearly unbroken shoreline extending WNW for nearly 8 miles to Black Point. Canoe Cove (Allen Cove) is the only indentation; the ruins of a detached breakwater lie in its entrance.

Shoal ground extends about 0.8 mile offshore in places along this stretch of the coast. Inman Rock, with a least depth of 1.2m, and Inman Reef, with a depth of 6.4m, lie about 0.8 mile SW and 1.5 miles SSE, respectively, of Black Point.

A television tower, marked by obstruction lights, stands at an elevation of 326m on the hills about 3.5 miles NE of Black Point.

The De Sable River, which nearly dries, is entered between Black Point and Brocklesby Head, about 2.5 miles SW. The latter, which is about 4.6m high, is formed of gray clay cliffs. A reef, with depths of less than 5.5m, extends nearly 1 mile S from the head.

Tryon Shoals (46°11'N., 63°31'W.) dry for over 1.5 miles S of Birch Point and Tryon Head (Pauls Bluff). These shoals are not very steep-to and appear to be extending to the E. The tidal currents meet off them and frequently set down in their direction, requiring great care when navigating in the vicinity.

A lighted bell buoy is moored about 1.8 miles S of Tryon Shoals.

6.51 Victoria Harbor (46°13'N., 63°29'W.) is a small shallow anchorage off the mouth of the Westmorland River, entered between Tryon Shoals and Brocklesby Head. As sand from Tryon Shoals encroaches to the E, the narrow channel leading to this anchorage may have less depth than charted. The depth on the range line was reported to be 0.3m. The anchorage space, with depths of 2.1 to 4.3m, is only about 0.3 mile long and 0.15 mile wide, but there is a larger area with depths between 2.1m and 2.7m, close to the E.

Depths—Limitations.—At the village of Victoria, at the mouth of the river, there is a government wharf, 122m long. The wharf has depths of 1.2 to 1.8m on the E side and 1.5 to 2.4m on the W side, although caution is necessary as it has been reported that shoaling has reduced the depths to as little as 1.2m in the approach and 0.3m alongside. On either side of the government wharf are the ruins of old wharves.

A causeway and bridge span the Westmorland River about 107m E of the wharf. The bridge has a vertical clearance of 1.8m.

Aspect.—Leards Range Lights are shown on the shore at the village of Victoria. The front light is shown from a white tower, 8m high, at the NW end of the bridge. The rear light is displayed from a similar structure about 0.5 mile NNW. The

alignment of these lights leads towards the harbor.

Wrights Range Lights are shown from the NW side of the harbor. The front light is shown from a white tower, 3m high, on **Pauls Bluff** (46°12.3'N., 63°29.3'W.). The rear light is shown from a similar structure, 9m high. It is situated 695m WNW of the front light. The alignment of these lights leads N of Tryon Shoals.

Palmers Range Lights lead through the channel to the government wharf. The front light is shown near the NW end of the bridge; the rear light is 120m N of the front light. The alignment of these lights leads through the buoyed channel to the wharf at Victoria, in a least depth of 1.8m, which improves to about 3m when within 0.3 mile of the wharf.

In the anchorage, tidal currents are weak and irregular, but sometimes reach 1.5 knots for short periods along the edge of the shoals and in the entrance.

The Tryon River flows out on the E side of Tryon Head through the drying sands of Tryon Shoals. Small craft enter the river near HW.

Between Tryon Head and Bells Point, 4.5 miles W, the coast is indented by three drying coves separated by bluff points. The 9.1m line runs about 2 miles S of Tryon Head and approaches the coast within 0.5 mile off Bells Point.

6.52 Port Borden (46°15'N., 63°42'W.) is formed by a railway pier extending 0.35 mile SE from Borden Point. A guard breakwater attached to the outer end of the pier runs for 122m in a SW direction. A detached breakwater, 0.1 mile long, running in a NE-SW direction, lies 0.1 mile SE of the outer end of the pier. There is a depth of 7.6m in the ferry berth. The least charted depth in the turning basin inside the entrance was 5.6m in 1992.

Depths—Limitations.—A public wharf, with an L-shaped head used by fishermen, extends 220m SE from the head of the harbor; the depth alongside the pier head is 1.3m.

Aspect.—A light is shown from a red skeleton tower on the outer end of the detached breakwater. Another light is shown from a white pyramidal tower situated on the outer end of the railway pier.

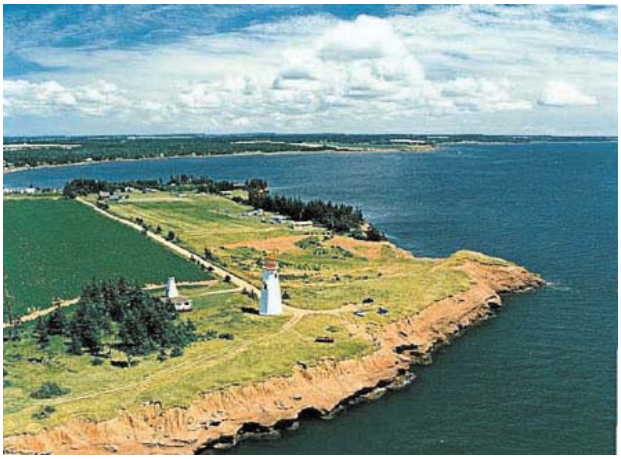
Caution.—Local knowledge is recommended for entering Port Borden. Pilots are reported to be available, but only on an emergency basis, as the berths are designed mainly for the ro-ro service.

The Confederation Bridge, a fixed highway bridge, crosses Abegweit Passage from Port Borden SW to Jourimain Island, NW of Cape Tormentine. See paragraph 6.72 for further information. A wreck, with a least known depth of 11.5m, is reported (2008) to lie E of the center channel in Abeqweit Passage, about 2.25 miles SW of Bells Point. An obstruction, with a least known depth of 16.4m, is reported (2009) to lie about 1.4 miles SW of the center channel and about 2.4 miles NE of Gunning Point.

Northumberland Strait—North Side—Approaches to Summerside

6.53 Between Borden Point and Seacow Head, a low flat point, 6 miles NW, the coast is indented with several coves divided by points of red sandstone and clay cliffs with anchorage for small craft, with offshore winds, in good weather.

Seacow Head Light (46°19'N., 63°49'W.) is exhibited from a white octagonal tower situated on the SW extremity of the headland.



Seacow Head from NW

Bedeque Bay (46°20'N., 63°52'W.), shallow and open, contains Summerside Harbour and Sunbury Cove. Shallow water extends across the mouth of the bay from Seacow Head and continues along the coast to Cape Egmont, 15 miles distant. Miscouche Point, a peninsula on the N coast, is fronted by the extensive Miscouche Bank, which dries for nearly 1.5 miles S of the point.

A radio tower, with red air obstruction lights, is situated on the E side of Miscouche Point.

Anchorage.—The roadstead lies between the E side of Miscouche Bank and the shoals extending from the E side of the bay, between Graham Head and Indian Spit. There is a safe summer anchorage, in 6.1m, sand and clay, but open to S winds. The shoals and land on both E and W sides of the anchorage prevent heavy seas when the winds are from other directions.

A designated prohibited anchorage area is located between Graham Head, on Prince Edward Island, and Cape Bruin, in New Brunswick. Its position can best be seen on the appropriate chart.

Indian Head (MacCallums Point) (46°23'N., 63°49'W.), 3.5 miles N of Seacow Head, is faced by sandstone cliffs, 7.6m high, and the land rises to about 15.2m inland. Two white square structures with red roofs, near Indian Head, resembling lighthouses, are conspicuous from seaward.

Caution.—A submarine cable area crosses Abegweit Passage from the vicinity of Cape Tormentine to the N shore, about 1.5 miles SE of Port Borden.

A breakwater extends from Indian Head to the outer end of Indian Spit. A light is shown from a white octagonal tower on a circular stone pier at the outer end of Indian Spit.

Summerside Harbor

Summerside (46°24'N., 63°47'W.)

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6.54 Summerside Harbor is entered through a narrow dredged and buoyed channel which commences about 0.3 mile W of Indian Head Light, and leads ENE into the harbor.

The harbor, which is only 0.5 mile wide, has one government wharf, two piers for fishing boats, and a yacht basin. The town is built on the N side of the harbor.

Winds—Weather.—The prevailing winds are NW.

Ice.—The average thickness of level shore-fast ice in Summerside is about 0.6m. Freeze-up usually begins about the middle of December, with a solid ice cover forming before the end of the month. Break-up normally begins during the first week of April, with the harbor clearing of ice by the fourth week of April. Two to five weeks variation in freeze-up and break-up can occur.

Tides—Currents.—Mean spring tides rise 2.2m and mean neaps rise 2m. Maximum current rates rarely exceed 2 knots.

Depths—Limitations.—The dredged entrance channel is reported to be maintained to a depth of 6.7m. The harbor channel turns to the SE just off the public wharf and a narrow channel over 5.8m deep extends for 1.5 miles, between Holman Island and McDonald Point, towards the shallow mouth of Dunk River. Wilmot River dries at its mouth on the east side of Summerside Harbour. See table titled **Summerside—Berthing Information** for details on berthing facilities in the harbor.

Aspect.—Summerside Outer Range Lights, in line bearing 029°, are shown from white square towers situated about 1 mile WNW of the government wharf.

A second set of range lights is shown from the vicinity of the government wharf. The front range light is shown from a red skeleton tower on a shed roof on the government wharf at Summerside; the rear light is shown from a white square tower on shore. These lights, in line bearing 072°, lead through the channel into the harbor.

A conspicuous tower, 38m high, painted orange and white and marked by red air obstruction lights, is situated on top of a building about 0.1 mile N of Queen's Wharf.

A radio mast, with an elevation of 76m, marked by red air obstruction lights, is situated nearly 2 miles NE of the harbor.

A conspicuous red and white checkered water tank is situated about 1 mile N of the government wharf.

Summerside—Berthing Information

Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Beam	
Summerside Marine Terminal					
Dry Cargo Berth	187m	8.5m	225m	30.4m	Aggregates and fertilizer.

Pilotage.—Pilotage is available but not compulsory. To avoid a delay in obtaining a pilot, the masters of vessels bound for Summerside must report via any coast station by radiotelephone or radiotelegraph their ETA to "Pilots Summerside" at least 12 hours before arrival at the pilot boarding station.

The ETA must be confirmed or corrected not more than 6 hours later. The time used must be UTC. The pilot boarding station is situated in position 46°19.12'N, 63°53.45'W, about 3 miles W of Seacow Head.

The master of a ship that is to depart or make a move must report to "Pilots Summerside" 6 hours prior to such ETD. The time used should be local time. If UTC is used, it must be expressly stated.

Contact Information.—See the table titled **Summerside—Contact Information**.

Summerside—Contact Information	
Harbormaster	
Telephone	1-902-432-6530
Facsimile	1-902-432-6943
Pilots	
Telephone	1-877-273-3477
Facsimile	1-866-774-2477
E-mail	dispatch@atlanticpilotage.com
Web site	http://www.atlanticpilotage.com

Anchorage.—The approaches to Summerside Harbor lie between the E end of Miscouche Bank and the shoals extending from the E side Bedeque Bay off Salutation Cove. There is a safe summer anchorage, in 6m, sand and clay, but open to S winds. The shoals and land on both E and W sides of the anchorage prevent heavy seas when the winds are from other directions.

Caution.— Berthing water depths are be best represented on the harbor chart, but may be subject to unannounced change. The approach channel is susceptible to silting that can cause the water depths to be less than charted. The harbor authorities should be contacted for latest water depth information.

Northumberland Strait—North Side—Summerside to West Point

6.55 From the W point of Bedeque Bay to Cape Egmont, shoal water extends off the coast for 1.25 miles to the 5.5m line. Fifteen Point can be identified by the conspicuous twin spires of Mount Carmel church, close to the point. The ruins of a detached breakwater, drying 0.9m, lie about 230m offshore and 0.5 mile W of Fifteen Point.

Cape Egmont (46°24'N., 64°08'W.), a prominent sandstone cliff about 15.2m high, lies on the NE side of what is sometimes referred to as the central narrows. Shoal water borders the cape to a distance of about 1 mile to the SW, but lies over a considerable area to the NW.

Cape Egmont Light is shown from a white square tower on the S extremity of the cape.

A conspicuous microwave tower, 69m high, exhibiting red air obstruction lights, is situated 5 miles NE of Cape Egmont.

Egmont Bank (46°23'N., 64°14'W.), a narrow ridge of fine red sand with a least depth of 7.3m, commences 4 miles SW of Cape Egmont and extends 4 miles to the NW. There is a channel on either side of the bank, the S being deeper, with depths of 13.7 to 18.3m. The N channel, with depths of 11.9 to 13m, is generally recommended as it lies farther from the dangers on the NW side of the strait and closer to the light structures on Seacow Head and Cape Egmont.

Egmont Bay, between Cape Egmont and West Point, is an open bight 17 miles across between those points. The 9.1m line roughly follows the coast at a distance of up to 4 miles, and inshore of this line the water shoals rapidly. There is good anchorage with offshore winds, but vessels should not approach inside depths of 11m because of irregular shoaling.

At Fishing Cove, 1 mile N of Cape Egmont, there is a government wharf, 160m long. A breakwater extends S from the end of the wharf for 138m. A second breakwater extends to the W for 122m from the shore, forming an enclosed boat harbor. The depth in the basin is 0.6 to 1.2m.

Fishing Cove Light is shown from a red skeleton tower on the outer end of the E breakwater.

Fishing Cove West Light is shown from a skeleton mast on the S end of the W breakwater.

6.56 **Red Head** (46°25'N., 64°08'W.), low and rocky, lies about 1.5 miles N of Cape Egmont. Dutchman Rock, which dries 1.2m, lies about 0.1 mile offshore, 0.5 mile farther to the N. Canoe Gully, entered 1.5 miles N of the head, is a narrow shallow channel between sand bars, which leads to a boat basin at the mouth of Haldimand Creek. Rapid silting takes place and the depth in Canoe Gully was reported to be 0.3m. Inside the boat basin, the depth was reported to be 0.3 to 1.2m.

Aspect.—Canoe Gully Outer Range Lights are in line bearing 106°. The front light is shown from a square skeleton tower; the rear light is shown from a similar structure, close ESE.

Canoe Gully Inner Range Lights are in line bearing 144°. The front light is shown from a square skeleton tower; the rear light is shown from a similar structure.

Egmont Bay Wharf Sector Light is shown from a square skeleton tower situated on the SW corner of the wharf. The white sector indicates the preferred channel.

The twin domed towers and black roof of the church at St. Jacques, 5 miles N of Cape Egmont, are conspicuous from seaward.

6.57 The Enmore River and the Percival River flow into the head of Egmont Bay. They are approached by very narrow intricate channels through partly drying flats of sand, clay, and oyster beds extending 1.5 miles from the shore. The tide flows about 5 miles up these rivers between low marshy banks. These streams have a depth of 0.9 to 2.1m and the channels are buoyed or staked.

Egmont Bay Pier, 116m in length, with a cannery on it, is situated on the E side of the river, just below the bridge. This pier, together with another L-shaped wharf, form a boat basin with reported depths of 0.3 to 1.2m. A marine farm lies E of the Egmont Bay lighted range and close N of the entrance to Moore's Point on the Enmore River.

The entrances of the Brae River and Wolfe Inlet, on the N

shore of Egmont Bay, are obstructed by drying sand bars.

West Point (46°37'N., 64°23'W.) consists of sand hills, 3.7m high. West Point Light is shown from a white square tower, on the beach close N of the point.

West Point Light

West Point Range Lights are in line bearing 007°. The front light is shown from a square skeleton tower, situated on the outer end of the breakwater.; the rear light is shown from a similar tower.

West Spit, sand over sandstone and covered in places with only 1m or less of water, runs 3 miles NW from West Point. It nearly joins West Reef, a narrow rocky ridge with a least depth of 5.5m, lying 3.5 miles offshore at its N end. The narrow passage between West Reef and West Spit should not be attempted, as the soundings are irregular and the tidal currents strong, sometimes reaching a rate of 2.5 knots. The currents cause a heavy sea when running against the wind. The reef is marked by a lighted buoy on its W side.

Prince Edward Island—Northwest Coast

6.58 **Cape Wolfe** (46°43'N., 64°24'W.), about 6 miles N of West Point, forms between itself and North Point, 27 miles NE, an almost unbroken coastal line. Red clay and sandstone cliffs, with stretches of sandy beaches, prevail along this shore, with shoal water extending to a considerable distance in places. It is prudent to remain to seaward of the 18.3m line when passing along this stretch of coast.

There are a few ponds and shallow inlets, where boats obtain shelter, but they are entered through narrow nearly drying channels in the sandy beaches, which shift in heavy weather and sometimes are completely blocked.

Howard Cove, near Seal Point, lies 1.5 miles NE of Cape Wolfe, and has two breakwaters forming a small boat harbor, with reported depths of 0.6 to 1.2m alongside the wharves inside the harbor and 1.2m in the entrance.

Howard Cove Light, shown from a white tower, is situated near Seal Point.

Seal Point Light is exhibited from the head of the longer breakwater.

Miminegash Pond (46°53'N., 64°14'W.) has two breakwaters protecting the channel into a boat basin, which has a least depth of 1.3m. Depths within the basin are from 1.2 to 2.2m.

Range lights, in line bearing 173°, are shown at Miminegash. The front light is shown from a square skeleton tower on the outer end of the N breakwater; the rear light is shown from a similar structure on the shore.

Miminegash Reef, a nearly drying ledge of rocks, runs parallel to and 0.5 mile off the shore from abreast the entrance to Miminegash Pond to Cape Gage and is marked by a lighted bell buoy 0.5 mile NE.

A boat basin at Skinner's Pond, about 6.5 miles NE of Miminegash Pond, has an entrance channel protected by two piers. Extending from the shore NE of the piers is a curving breakwater 195m long. The least depth in the entrance to the basin was reported to be 0.8m. In the basin depths are from 0.3 to 2.5m. A bridge crosses the channel near the inner end of the breakwater.

Skinner's Pond Light is shown from a square skeleton tower situated on the S pier. Another light is also shown from an aluminum circular mast situated on the outer end of the breakwater.

North Cape (47°03'N., 64°00'W.) is described in paragraph 6.30.

Northumberland Strait—South Side

6.59 The coast between **Cape George** (45°52'N., 61°54'W.) and Merigomish Harbour, 27 miles SW, is bold and free of off-lying dangers. The 11m line parallels the shore at a distance of less than 1 mile. The land rises to a ridge 2 to 3 miles inland and reaches a summit of 335m, 3.5 miles S of Arisaig Point.

A government wharf is located at Livingstone Cove, 3.5 miles W of Cape George.

Livingstone Cove—Berth Information		
Berth	**Length**	**Depth**
Public Wharf (outer section)	21m	0.6-1.2m
Public Wharf (inner section)	52m	0.3-1.8m

A rockfilled area adjacent to a sunken ship lies 4 miles SW of Livingstone Cove.

Malignant Cove, 10 miles SW of Cape George, has a small stream at its head and is a good landing place for boats. Sugarloaf Hill, 196m high, lies 1 mile inland.

Frenchmans Barn is a conspicuous rock formation 2 miles SW of Dunn Point, the SW point of Malignant Cove.

A small boat harbor is located on the W side of Arisaig Point, about 0.8 mile SW of Frenchmans Barn. A breakwater, 147m long, extends from the point. This breakwater has berthing space on its E side with depths of 0.6 to 1.2m. A second breakwater extends 85m from the shore on the SE side of the harbor. A public wharf, 107m long and 6.1m wide, with depths of 0.6 to 0.9m, is situated between the two breakwaters.

Range lights, in line bearing 090°, are shown from the E side of Arisaig Harbor. The front light is shown from a red square skeleton tower; the rear light is shown from a similar structure.

Baillie Brook Wharf (45°42'N., 62°16'W.) has a fish-curing and freezing plant. The mouth of Baillie Brook is enclosed be-

tween two breakwaters, 37m apart. Sandbars sometimes obstruct the entrance. The E breakwater, 194m long, has an L-head, 46m in length. The W breakwater is obstructed by ruins. There is a shallow dredged channel, with a reported depth of 0.3, leading to the fish plant and the public wharf, where there were reported depths of 0.6 to 1.2m alongside the 119m long berth.

Big Merigomish Island, 46m high, is composed of clay and sandstone, with thin seams of coal visible at Coal Point, where the cliffs are 10.7m high. A sand bar, 2.5 miles long, connects the E end of the island to the mainland.

6.60 Merigomish Harbour (45°39'N., 62°27'W.), entered between the W extremity of Big Merigomish Island and Kings Head, 0.75 mile W, is available as an anchorage to boats and small vessels with local knowledge. There is a depth of 4.3m over the bar and a maximum depth of 10.1m in the harbor. Rocky shores extend 0.75 mile N of the entrance between Kings Head and Merigomish Point. The buoyed channel between the steep shoal banks is only 210m wide; at the entrance to the inner harbor, between Savage Point and Dulse Rocks, it narrows to 90m. The tidal currents at this point frequently run at a rate of 5 knots, but within the harbor the rate is generally less than 1.5 knots.

The harbor extends 5 miles to the E within Big Merigomish Island and also 4 miles SW up a bay containing many islands, coves, and precipitous headlands. Several small streams enter the area. The French River is navigable for boats through a narrow staked channel as far as the bridge at the village of Merigomish.

A cable crosses the harbor from the mainland to Big Merigomish Island, 1.75 miles E of Savage Point.

Piers are situated within **Savage Cove** (45°38.9'N., 62°27'W.). Pilotage was reported (1993) to be compulsory.

Little Harbor, entered between Roy Island and Black Point (Evans Point), about 3.5 miles W of Merigomish Island, is only suitable for small boats. Narrow intricate channels lead through drying flats into shallow inner basins, with only a few small pools where the depth is 1.8 to 3m.

Roy Ledge, a rocky shoal with a least depth of 3.4m, lies about 0.4 mile N of Roy Island. This part of the coast is foul inside the 11m line.

Between Little Harbor and the entrance to Pictou Harbour, the land is lower and shoal water extends farther offshore. Roaring Bull Point presents a low cliff to seaward, marked by a conspicuous red patch. A reef of sandstone extends for 0.3 mile NE from the point terminating in a rock drying 1.2m. Chance Harbor, to the E of the point, is nearly dry at LW. A public wharf is close W of Roaring Bull Point. The wharf is 89m long and 6.4m wide, with depths of 0.9 to 1.2m alongside the S face.

Caution.—Several oyster farms are situated in Little Harbor; the areas are marked by buoys at each corner; mariners are advised to proceed with care in their vicinity.

Northumberland Strait—South Side—Approaches to Pictou Harbour

6.61 Mackenzie Head (45°41'N., 62°38'W.), 2 miles W of Roaring Bull Point, is a sharp pointed cliff of clay and sandstone, 12.2m high. Mackenzie Shoal is a rocky bank, with a least depth of 4.3m, which extends from 0.5 to 0.75 mile NE of Mackenzie Head. Vessels should not pass S of this shoal.

Pictou Road, between Mackenzie Head and Logans Point, about 2 miles NE, although open to NE winds, affords good anchorage, in 9.1m, clay and mud, with Pictou Bar Light bearing 244°, distant 2 miles.

MacDonald Reef extends 0.4 mile E of Logan Point, with a rock drying 0.3m near the outer edge of the reef. The 5.5m line runs almost parallel to the shore, about 0.4 mile off Cole Point, a clay and sandstone cliff 9.1m high. Cole Reef, with 0.9m near its outer end, extends nearly 0.4 mile E of the point.

Pictou Harbour (45°40'N., 62°42'W.)

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6.62 The entrance to Pictou Harbor lies between Lighthouse Beach (Pictou Bar Spit) and Lowdens Beach (Louden Beach), about 0.2 mile NW. About 2 miles inside the entrance, the harbor expands into three arms, the mouths of the East River, the Middle River, and the West River. A causeway blocks the entrance to the West River and the Middle River.

There is a regular sea freight service to Charlottetown and the Iles de la Madeleine during the navigation season, which is important commercially in the coastal shipping trade. Pictou makes major lumber shipments to overseas markets.

Ice.—The harbor is usually closed by ice from the beginning of January to mid-April.

Tides—Currents.—Mean spring tides rise 2m and mean neaps rise 1.6m.

The channel over the bar is only 122m wide. The tidal currents sometimes attain a rate of 2.5 knots.

Depths—Limitations.—The least depth in the channel over the bar, on the alignment of the range lights, was 6.7m. Within the bar, depths of 9.1 to 13.7m extend nearly to the causeway, with an average width of 0.4 mile between the 7.3m line on either side. See table titled **Pictou Harbour—Berthing Information** for details on berthing facilities in the harbor.

Several smaller wharves are situated W of Pier B.

An isolated shoal, with a depth of 5.2m, lies 150m NE of the outer end of Pier C, and two other shoals with the same depth lie close off the quay wall. A shoal area, with a depth of 4.9m, extends SE from the W end of the quay wall.

Pictou Landing, 1 mile SW of Pictou Bar Light, has an L-shaped pier for small vessels. The pier is 56m long and 32m across the outer face, with depths of 2.4 to 4.6m alongside and 4m available on the inner face.

Abercrombie Point, lies nearly 1 mile SSW of the piers at Pictou. It is the site of the Scott Maritimes Pulp Mill which is marked by a conspicuous tower 74.4m high.

A causeway connects Skinner Point, 0.2 mile WSW of Abercrombie Point, to the opposite shore; the causeway closes the Middle River and the West River to navigation.

Aspect.—The town of Pictou stands on the N shore of the harbor and on the slope of a ridge rising to 61m. A spur of this ridge forms Battery Point. The most conspicuous building is the Roman Catholic church, of red brick with a spire, situated near the summit of a hill E of the town. A large blue water tower is also conspicuous.

The head of Pictou Harbor is blocked by a causeway extend-

Pictou Harbor

ing N from Skinner Point to the opposite shore. The West River and the Middle River, which originally flowed to the harbor, now form a reservoir behind this structure.

Pictou Bar Light is exhibited from a hexagonal tower situated on the extremity of Lighthouse Beach on the S side of the harbor entrance.

Range lights are shown from the N shore about 0.7 mile W of Pictou Bar Light The front light is shown from a white square tower with red top and red stripe; the rear light is shown from a similar structure. These lights, in line bearing about 262°, lead into the entrance of the harbor.

Town Point Light is shown from a square skeleton tower at the outer end of Pier C.

Pilotage.—Pilotage is not compulsory but is available. Due to the narrow channel over the bar and the strong tidal currents, pilotage is recommended for those without local knowledge. To avoid a delay in obtaining a pilot, the master of a ship bound for Pictou must request pilotage from the Atlantic Pilotage Authority at least 12 hours before arrival at the pilot boarding position. The ETA must be confirmed or corrected 4 hours prior to arrival. The time used must be UTC. The pilot boarding station is in position 45°42'30"N, 62°34'00"W.

The master of a ship that is to depart or make a move must report to the Atlantic Pilotage Authority 4 hours prior to such ETD. The time used should be local time. If UTC is used, it must be expressly stated.

Contact Information.—See the table titled **Pictou Harbour—Contact Information**.

Pictou Harbour—Contact Information	
Marine Terminal	
Telephone	1-902-485-9280
Facsimile	1-902-485-9281
E-mail	straitline@truroreload.com
Web site	http://www.pictoumarineterminals.com
Harbormaster	
Telephone	1-902-485-6686

Pictou Harbor—Berthing Information			
Berth	**Length**	**Depth**	**Remarks**
Pictou Terminal—Pier C			
North Wharf No. 2	182m	7.6m	Cement, wood pulp, fertilizer, and steel.
South Wharf No. 1	182m	7.6m	Cement, wood pulp, fertilizer, and steel.
Quay Wall	213m	4.5m	General cargo.

Anchorage.—The usual anchorage is to the E of the wharves at Pictou, in 9.1 to 12.2m, mud, avoiding the prohibited anchorage area described below.

The recommended anchor berth is with Pictou Bar Light bearing 244°, distant 2 miles.

Anchorage is prohibited in the area within a radius of 305m from the inner end of the marine railway slip at Battery Point.

Caution.—A submarine cable crosses the harbor from a position near Seaview Point (Grave Point), the opposite shore near Moodie Point. A second cable crosses from a point W of Pier B to Christie Point. Another cable is laid from the outer end of Lighthouse Beach to a position near Moodie Point.

6.63 The East River of Pictou.—This river is navigable from Pictou to **New Glascow** (45°36'N., 62°39'W.), a distance of 6.5 miles. The narrow channel is marked by range lights and buoys.

The channel has been dredged from the river entrance to Trenton, a distance of about 4.5 miles. This channel is in three long reaches and avoids many of the curves and bends in the river. The depth in the first two reaches as far as Stonehouse Point is 3.4m, and is 3m in the third reach, starting just north of Stonehouse Point to Trenton. The river is bouyed upstream to Trenton. Silting takes place and local information should be obtained before attempting to navigate this river.

A lift bridge and causeway cross the river at Stonehouse Point. Close above the bridge, power cables with a vertical clearance of 21m cross the channel. A large electrical power plant is situated at Stonehouse Point.

The T-shaped wharf of Irving Oil Company at Trenton, with a face 15m long, was reported to have a depth of 2.1m close off the outer face. There is a small turning basin at Trenton. It has been reported (1997) that this wharf has been removed.

At New Glascow, about 2.3 miles above Trenton, navigation is limited to small craft by a bridge with a vertical clearance of 2.4m. There is a marginal wharf about 183m long just below the bridge, with a depth of 1.8m alongside.

Range lights are shown from Norway Point for the first reach of the channel. Both front and rear lights are shown from skeleton towers. These lights are in line bearing 324°.

Range lights for the second reach are shown from the shore E of the abandoned lock at Stonehouse Point. The front light is shown from a white pyramidal tower; the rear light is shown from a red pyramidal skeleton tower. These lights are in line bearing about 119.5°.

A shipyard at Battery Point, 1.5 miles WSW of Pictou Bar Light, can undertake major hull and machinery repairs. Two slipways are situated on the point. The cradle length is 98.8m, with a maximum beam of 18.2m.

One floating dock is available; it has a 2,000 gt capacity and can handle vessels up to 91.4m long, with a beam of 18.2m and drafts of 5.4m forward and 7.9m aft. Mobile cranes up to 25 tons are available.

Caution.—The aids marking the East River channel may be adjusted to suit the water conditions prevailing.

Northumberland Strait—South Side—Pictou Harbour to Cape John

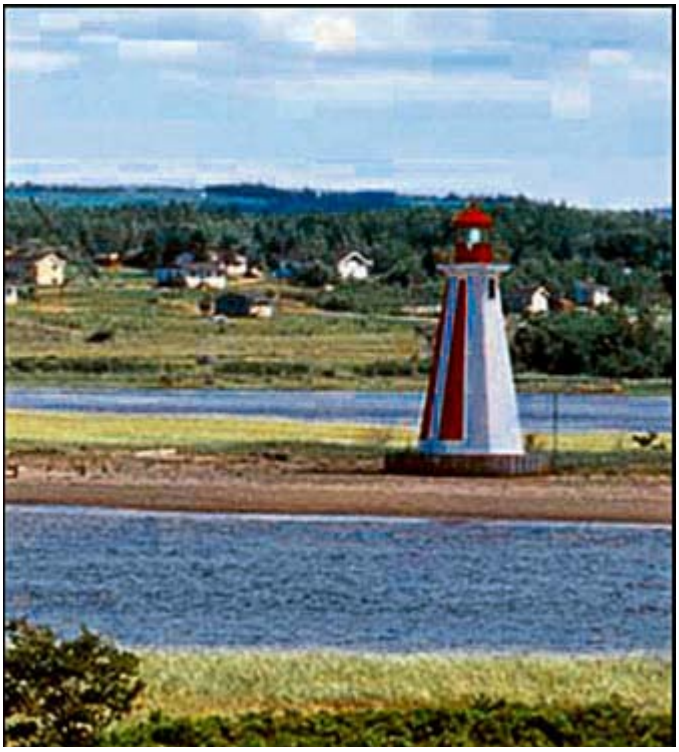
6.64 Pictou Island (45°49'N., 62°33'W.), nearly 8 miles NE of the entrance to Pictou Harbour, is composed of clay and sandstone, and is 46m high near its center. The N side of the island is wooded and the coast is mostly formed of low cliffs. A submarine cable runs from Roger Point, low and sandy, to Widow Point on the mainland. A reef extends 0.5 mile from Seal Point, the E extremity of the island. Deep water lies N and S of this reef and vessels should not pass close either side, especially with a flood or W current. A detached breakwater lies about 0.3 mile S of Seal Point. Shallow water extends 0.3 mile, in places, off the N coast. The 5.5m line runs about 0.5 mile off the W end of the island, with nearly drying rocks within it.

Depths—Limitations.—A wharf, protected by two breakwaters, is situated on the S side of Pictou Island, about 1 mile from West Point, the W extremity. The wharf is 38m long, with a depth of 1.8m at the end. There is very little water in the basin between the breakwaters.

Aspect.—Pictou Island East End Light, situated on the SE point, is a red and white rectangular daymark on a red framework tower, 10m high.

Pictou Island West End Light, on West Point, is shown from a red tower with a similar daymark, 6m high.

Pictou Island Breakwater Light is shown from a red pyramidal skeleton tower situated on the outer end of the W breakwater.



Pictou Island Light

Pictou Island South Light is shown from a white pyramidal tower situated on the S coast of the island close NNW of Pictou Island Breakwater Light.

Pictou Banks extend from the W end of Pictou Island for the distance across the channel towards the mainland. The depths vary from 5.2 to 7.3m except on Middle Shoals.

Middle Grounds (Middle Shoals), a chain of rocky patches

with a least depth of 3.4m, cover a part of Pictou Banks about midway between West Point, Pictou Island, and Caribou Point.

Caribou Channel lies between the SW end of Pictou Banks and the reefs extending from Doctor Island and Gull Island. At the N end, in the narrowest part, the least depth is 8.2m. The tidal currents run up to 2 knots.

Caribou Light (45°46'N., 62°41'W.) is shown from a white square tower situated on Gull Point, the NE end of Gull Island.

Caution.—Doctor Reef extends 1 mile from Doctor Point to a depth of 5.5m. Skinner Reef, drying, lies 0.4 mile NE of Doctor Point. Seal Rock, which also dries, lies 0.6 mile SE of Doctor Point, and shoal water forming to Logan Point. Caribou Reef dries out for 0.3 mile N of Caribou Point. Shoal water extends 0.5 mile N of Gull Island and Caribou Island.

A wreck, with a depth of 7.9m, lies about 1 mile W of Middle Grounds. The wreck, of which the superstructure has been removed, lies in an E-W direction; the maximum height of the wreck above the sea bed is 3m.

6.65 Caribou Harbor (45°44'N., 62°42'W.), between Caribou Island and Doctor Island on the N side, and the mainland on the S side, is shallow except for a narrow tongue of deeper water extending about 3 miles within the S entrance. The dredged channel, used by the Wood Islands Ferry Service, lies between Gull Island and Doctor Island. This channel is buoyed and is reportedly maintained at a depth of 4.6m, but continuous silting takes place. The ferry service is maintained from May to November inclusive.

The ferry terminal at Caribou consists of two ferry berths. Fishermans Wharf extends 69m from the E side of the ferry terminal; this wharf is 6m wide. There is a least depth of 1.2m alongside. Boats can also secure to the ferry wharf for a distance of 30m N of Fishermans Wharf, in a depth of 2.1m. There is a least depth of 0.9m alongside the wharves in the basin close S of Fishermans Wharf.

Aspect.—Range lights, in line bearing 209.5°, are shown from the ferry terminal.

The former S entrance to Caribou Harbor, between Widow Point and Oak Tree Point, was reported to be closed to navigation due to silting.

The coast between Caribou West Gully and Cape John, 15 miles W, is nearly straight and unbroken, with shallow water extending 0.4 mile off it. Low cliffs of clay and sandstone, with a maximum elevation in places of 15.2m, predominate. There is good landing for boats in good weather.

At the Toney River, 5 miles W of Caribou West Gully, are two piers 10m apart, with 0.9m of water in the river mouth between them. A breakwater-wharf extends from the E point of MacDonalds Cove, 4 miles W of the Toney River, with 3m depth at the outer end. Skinner Cove, 3.5 miles E of Cape John, is a small boat harbor protected by two breakwaters. Part of the basin dries at LW.

A sector light is shown from a square skeleton tower on the NE corner of the W breakwater at Skinner Cove.

Northumberland Strait—South Side—Amet Sound to Pugwash Harbour

6.66 Cape John (45°49'N., 63°07'W.), with sharp sandstone points 12.2 to 15.2m high, is the E entrance point of Amet Sound, which affords good anchorage for vessels of moderate size. The entrance to the sound is divided by Amet Shoals and Waugh Shoal into three passages. John Bay, Brule Harbor, Barrachois Harbor, and Tatamagouche Bay all lie at the inner end of the sound.

Amet Island, in the entrance to Amet Sound, presents sandstone cliffs on every side, is flat and grassy on top, about 6.1m high, and is constantly diminishing in size from erosion. Reefs and shoals surround the island; Amet Shoals extend 4 miles E and 2 miles SE of the island. There are depths of 1.2m, 1 mile from the island, and East Patch, with a depth of 4.3m, is 3 miles NE of the lighthouse.

Amet Island Light (45°50'N., 63°11'W.) is shown from a square skeleton tower, 6m high, situated near the center of the W part of the island.

Waugh Shoal, about 2 miles WNW of Amet Island, is a rocky bank, with a least depth of 3.4m towards the N and steep-to part of the shoal.

Saddle Island, wooded and low, is joined at LW to the N side of Malagash Point, the W entrance point of Amet Sound. A spit runs out 1 mile from the E end of Saddle Island, with Washball Rock, awash, 0.4 mile from the island. A reef extends E from Malagash Point, with shoal water extending nearly 0.5 mile.

John Bay (45°47'N., 63°06'W.) is clear of detached shoals, but the shoal bank extending from the shore is often very steep. The head of the bay is encumbered by sandy shoals, drying out 1 mile at the mouth of the River John. The bar across the river mouth has a depth of 0.3m, and a channel with depths of 0.3 to 2.1m leads as far as the bridge at River John Village, 1 mile upstream. The river mouth is buoyed and the channel is marked by stakes.

There is an L-shaped breakwater-wharf on the E side of Reef Point, 0.5 mile S of Cape John, providing a boat shelter. There is a depth of 1.2 to 2.1 at its outer end.

Anchorage.—Good anchorage can be taken in summer, in a depth of 6.4m, mud, near the head of John Bay, about 0.8 mile N of Long Point. The anchorage is not safe in NW winds.

6.67 Brule Harbor (45°45'N., 63°11'W.), on the SE side of Brule Point, is shallow with the greater part consisting of drying mud flats and weeds. Weatherbies Spit and the drying flats extending 0.5 mile SE of Brule Point provide some protection for small craft. The entrance channel is buoyed. The public wharf in the harbor is in ruins.

Brule Shoals, 1 mile N of Brule Point and parallel to the shore for 1 mile, has a least depth of 2.7m, rock.

Barrachois Harbor is entered between Peninsula Point and Chambers Point by a narrow channel with a depth of about 4m. Jollimore Reef, drying 0.6m at the outer end, extends 0.3 mile NW from Peninsula Point. A drying reef extends 0.2 mile E from Chambers Point, and Middleground Shoal, with a least depth of 1.8m, lies in the entrance to the harbor. The harbor contracts to a very narrow channel 1 mile S of Chambers Point, with depths of 0.9 to 2.4m, and turns SE near the highway bridge. A small government wharf lies on the W side of the channel below the bridge.

Tatamagouche Bay affords good anchorage, with soft mud bottom everywhere, for shallow-draft vessels, but the head of the bay shoals rapidly and McNabs Bay (The Basin) is nearly all dry. The best anchorage for vessels of moderate draft is

about 1 mile NW of Peninsula Point, in depths of 7.3 to 7.9m. This anchorage is not safe in strong NE winds.

The government wharf near South Shore (Malagash Wharf), with an L-head 82m long, extends from the ruin of a large warehouse. Inside the basin formed by the L-head there was a depth of 0.6m. The dredged approach channel is reported to have silted to less than charted depths.

Malagash Wharf is shown from a red square skeleton tower on the SE end of the wharf.

The Waugh River is approached through a very narrow channel between drying mud flats, but there is said to be 1.5m as far as the wharf at Tatamagouche, with 0.6m over the gravel bar. The wharf is 21m long and dries at LW. Stakes mark the channel.

Caution.—The passages into Amet Sound are difficult and complicated by erratic tidal currents. Local knowledge is necessary for safe navigation. Middle Passage is considered to be the safest under normal conditions.

Treen Bluff, 1.5 miles W of Saddle Island, is a low cliff, with Treen Reef extending 0.5 mile N from it to a depth of 5.5m. Gravois Point, 2.5 miles W of Treen Bluff, is the highest part of the clay and sandstone cliffs in the vicinity.

6.68 Wallace Harbour (45°49'N., 63°29'W.), at the mouth of the Wallace River, has depths of 4.3 to 9.1m in a narrow channel between drying mud flats. The alignment of the outer range lights crosses Oak Island Bar, composed of sand with a depth of 2.7m, into Ship Channel. Ship Bar, with a least depth of 4.3m and marked by two buoys, provides a deeper but less direct approach. This channel is entered on a W course, 0.5 mile N of Gravois Point; course is altered to the NW after passing Buoy UH2, moored at the S limit of Oak Island Bar. Buoy UH3 is moored close to the E edge of Horton Bank, and course is then altered to the alignment of the outer range lights.

Within the harbor, drying flats of stiff red clay lie either side of the narrow buoyed channel. A drying middle ground, 0.5 mile W of Palmer Point, further diminishes the width of the channel to about 90m. Nearly abreast the E end of the middle ground a narrow channel leads to the S and then through drying flats into Lazy Bay, which has gypsum cliffs 9.1m high at its head. The land on the S shore of the harbor rises gradually to the summit of a 122m high ridge.

There is an L-shaped government wharf at Wallace Village on the S side of the harbor, with a depth of 3.4m at the 43m outer face. A bridge crosses the river at Betts Point, 0.5 mile W of the government wharf.

Anchorage may be taken, in depths of 5.5 to 11m, mud, inside the harbor entrance, close W of Palmer Point, where the channel is 228m wide. Fairly safe anchorage may be found in 5.8 to 8.2m, mud, W of the buoy off Horton Bank.

Tidal currents attain a rate of 1.5 knots in the entrance. The ebb is somewhat stronger in the spring from the snow runoff.

Range lights are shown on Mullins Point, on the N side of the harbor entrance. The front light is shown from a square skeleton tower; the rear light is shown from a similar structure. These lights, in line bearing 280.5°, lead across Oak Island Bar and into Ship Channel to the point of intersection with the inner sector light.

Wallace Harbour Sector Light is situated on Macfarlane Point. The light is shown from a white pyramidal tower with a red vertical stripe. The white sector indicates the preferred channel.

A light is shown from a red square skeleton tower on the outer end of the government wharf at Wallace.

Caution.—It is strongly recommended that the services of a local pilot should be obtained for vessels of even moderate size unless previous experience and local knowledge have been acquired.

Fox Harbour, between Mullins Point and Mackenzie Point, consists of a channel through drying flats of red clay and weeds. There are depths of 4.3 to 7.6m in this channel, but only 1.2m over the bar from Ship Channel.

The coast between Mackenzie Point and Pugwash Point is unbroken and composed generally of clay and sandstone cliffs about 15.2m high, rising inland to a ridge 45.7m high.

Numerous shoals, some of them detached, lie with depths of less than 5.5m up to 1.5 miles off this coast, and depths of 6.7 to 7.6m lie up to 3.5 miles N of McLean Point.

Pugwash Harbour (45°51'N., 63°40'W.)

6.69 Pugwash, situated at the mouth of the Pugwash River, is a small port that ships a considerable amount of wood pulp and rock salt.

Pugwash Road, at the confluence of the Pugwash River and the River Philip, lies between Pugwash Point and the Lewis River, about 2.5 miles WSW. Reefs extending from both reduce the usable area of the road and caution is necessary in the approach.

The entrance to the harbor is subject to silting and is difficult to transit; extensive local knowledge is required due to the shifting sand banks and sharp turns.

Ice.—The navigation season is from April to December.

Tides—Currents.—Mean spring tides rise 2.6m and mean neaps rise 2.3m.

Tidal currents generally follow the channel and attain rates up to 2 knots at the river entrance, but may be stronger on the outgoing current during the spring thaw. Close by Oxley Point is a small basin formed by the bend in the river where the tidal current can run at up to 4.5 knots.

Depths—Limitations.—The least charted depth in the channel is maintained at about 4.5m. Silting causes frequent dredging. Reports indicate pilots can carry a depth of 4.6m to the berths by varying from the entrance ranges.

The greatest danger on approaching is Ballast Ground, with a least depth of 3.3m, about 2 miles NNW of Pugwash Point. A depth of 3.3m is located on the third range and requires local knowledge to avoid. There is a rock, with a depth of 2.7m, close W of the junction of the second and third ranges and a rock, with a depth of 1.5m, 45m S of the S face of the wharf.

Vessels up to 5,000 gt are taken in frequently. Drafts to 5.5m can be taken in on most HW. The greatest draft accommodated was 6.5m.

A bridge, with a vertical clearance of 3.6m, crosses the Pugwash River E of the public wharf. The river above the bridge is much encumbered with flats of mud and weed which nearly dry, restricting passage to small craft only. Small craft can proceed upstream for several miles above the bridge. A bridge, with a vertical clearance of 2.7m, crosses the river at Port Philip. Underwater obstructions from an old bridge are sit-

uated close downstream of the bridge. These are not marked and make the channel hazardous; local knowledge is essential.

Aspect.—The channel from Pugwash Road into the harbor is buoyed.

Pugwash Light is shown from a red skeleton tower with a white enclosed upper portion on Fishing Point.

Range lights are shown on Bergeman Point (Bergmans Point). The front light is shown from a square skeleton tower; the rear lights are shown from a similar structure. These lights are in line bearing 205° and lead in from the strait.

Fox Point (Biglow Point) Range Lights are shown from the shore E of the point. Both lights are shown from red square skeleton towers. These lights, in line bearing 160.5°, are only visible when in alignment and lead into Pugwash Roads.

Range lights are also shown near Steven Point. The front light is shown from a red skeleton tower; the rear light is shown from a similar structure. These lights, in line bearing 086.5°, lead from the intersection with Biglow Point range lights across Pugwash Bar and are only visible when in alignment.

A fourth pair of range lights is shown close E of Fishing Point. The front light is shown from a skeleton tower; the rear light is shown from a similar structure. These lights, in line bearing 350.5°, astern, lead from the intersection with the Steven Point range into the entrance to the Pugwash River and are visible only when in alignment.

A radio tower, 101m high, is situated 2.5 miles SSW of Pugwash Light.

Pilotage.—Pilotage is compulsory. Pilots operate through the Atlantic Pilotage Authority. Vessels should send their ETA 12 and 4 hours in advance. The time used must be UTC. The pilot boarding station is situated in position 45°54'30"N, 63°40'42"W, about 0.7 mile NE of UK2 Lighted Buoy. The pilot vessel can be contacted on VHF channels 7A, 17, and 77.

The master of a ship that is to depart or make a move within the compulsory pilotage area must request a pilot through the Atlantic Pilotage Authority 4 hours prior to such ETD. The time used should be local time. If UTC is used, it must be expressly stated.

Contact Information.—See the table titled **Pugwash Harbour—Contact Information**.

Anchorage.—Pugwash Road affords excellent anchorage, in depths of 4 to 6m, sand and clay. The anchorage is bounded on the E side by the shoal ground, with depths less than 3.7m, extending 0.3 mile W and 0.4 mile SW from **Fishing Point** (45°52'N., 63°41'W.) and on the W side by Philip Bar (sand and stones), with depths of less than 1.8m, extending about 1.5 miles ESE from Lewis Head, 2 miles W of Fishing point. The anchorage is sheltered from NE winds by Pugwash Reef, which extends 0.4 mile WNW from Pugwash Point, and from NW winds by Lewis Reef, 1.25 miles N of Lewis Head.

Pugwash Harbour—Contact Information	
Harbormaster	
Telephone	1-902-243-3014
Facsimile	1-902-243-2079
Port Authority	
Telephone	1-902-243-3139

The best anchorage in Pugwash Road is in a depth of 5.8m, with Fishing Point Light bearing 085° at about 0.5 mile. There is also anchorage about 0.5 mile farther SSE in depths of 4m.

Caution.—Mariners are cautioned that due to shifting sand, the depths in the approaches and in Pugwash Road may vary considerably from those shown on the chart. Local knowledge is essential in this area.

Northumberland Strait—South Side—Lewis Head to Cape Tormentine

6.70 Lewis Head (45°54'N., 63°44'W.), formed of a bank of clay about 9.1m high, is bordered by drying sand banks for a distance of 0.5 mile offshore. A conspicuous white house is situated just within the extremity of the head.

The River Philip, entered 0.75 mile SE of Lewis Head, is obstructed by a drying bar of sand and stones, leaving a narrow tortuous channel on the S side N of Rocky Ledge, with a depth of 1.2m or less in places. Within the bar, a depth of 3.7m can be carried for 5 miles upstream in a channel only 30m wide, in parts, through flats of mud and weeds. Boats can ascend for about 9 miles. The river discharges little water, except in a freshet.

The channel from Philip Bar to Port Philip is marked by buoys at some of the essential points.

From Lewis Head the coast trends NW for 7 miles to the Shinimicas River, the narrow channel of which is buoyed.

There is a government wharf at Northport, near the river mouth. The wharf, the inner end of which adjoins the highway bridge, is 40m long, with an L-end 43m long. There is a depth of 1.2m alongside.

Coldspring Head, about 8 miles NW of Lewis Head is low and fringed by reef. A light is shown from a white square tower situated on the head.

Pugwash—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Canadian Salt Company Wharf (Oxley Point)			
West Face	146m	6.7m	Depths of 2.7m lie 40 and 76m off the E corner of the wharf.
South Face	149m	6.7m	
Fisherman's Wharf	61m	6.4m	—

Baie Verte, between Coldspring Head and Indian Point, 9 miles NNE, is completely open to E winds. The head of the bay

is shallow, and flats of mud and weeds dry out to 0.75 mile from shore. There are no deep water ports along its shores but several boat harbors are situated in the area hereabouts.

Aggermore Rock, with a depth of 5.2m, lies 4 miles NNE of Coldspring Head. Laurent Shoal, with depths of 4.9m, runs NW from Aggermore Rock. Shoal water extends from both sides of the bay.

Spear Shoal, of sand and sandstone, lies 2 miles S of Indian Point, with Heart Shoal extending W of Spear Shoal. Both these shoals have least depths of 2.4m.

Boss Spit, drying, extends 0.75 mile from the S shore between Boss Point and Jackson Point, on the S side of the bay.

The Tidnish River enters the bay on the S side, 7.5 miles W of Coldspring Head. There is a narrow boat channel, with depths of 0.6 to 2.1m, through flats of mud and weeds, which dry out 1 mile from the river mouth. The channel is marked by stakes as far as the bridge, 2 miles above the entrance. Buoys mark a detached shoal 0.75 mile N of Tidnish Head.

The Gaspereau River flows into the head of the bay on the N side. There are only 0.6m of water in the boat channel to the railway bridge at Port Elgin. There is a government wharf, 71m long, parallel to the channel, with a depth of 0.6m alongside, situated about 1.3 miles from the entrance to the channel on the N bank.

Fort Monckton Point (46°03'N., 64°04'W.), the S entrance point to the Gaspereau River, is marked by a light exhibited from a circular tower.

Northumberland Strait—South Side—Cape Tormentine to the Confederation Bridge

6.71 Cape Tormentine (46°07'N., 63°46'W.), 1 mile N of Indian Point, is formed off low cliffs about 9.1m high. This headland is located at the E end of New Brunswick, and along with the coast W, is responsible for the reduction in the width of Northumberland Strait at Abegweit Passage. The cape and the village of Cape Tormentine will probably be the first S land seen by W vessels transiting the strait in moderate visibility.

Tormentine Reef lies about 2.8 miles E of Indian Point, and part of it just dries. Rock Reef, an extensive rocky area with a least depth of 2.1m, lies between Tormentine Reef and Indian Point.

A lighted buoy is moored 0.75 mile ENE of the drying parts of Tormentine Reef. Vessels should not attempt to pass W of this buoy when rounding Cape Tormentine.

Depths—Limitations.—The abandoned Canadian National Railway ferry pier extends about 0.4 mile NE from the shore, then divides into two arms which trend to the SE from the approach pier and form a docking basin about 0.1 mile wide. The inner arm is 0.2 mile long, and the outer about 0.3 mile in length. The basin between the arms of the ferry dock has depths of about 6m for the major part, but shallows at its head and SW side to 1.7m. The ferries berth on the SW side of each of the two arms. A public wharf extends at right angles from the inner arm of the basin. This wharf has a depth of 1.2m alongside. The entrance to the basin has a depth of 0.8m and depths of 1m lie close E from the E wall. The E wall of the basin is 91m long.

Railway tracks serve the outer arm and loading ramp. Two detached breakwaters, each about 0.1 mile long, lie in the NNE-SSW direction about 0.1 mile off the arms.

Local knowledge is recommended for approaching the above berths.

Aspect.—A light is shown from a square skeleton tower on the NE end of the outer breakwater.

Submarine cables are laid across Northumberland Strait between the Cape Tormentine ferry terminal and Traverse Cove, as indicated on the chart. Vessels are cautioned against anchoring in the vicinity of these cables.

Anchorage.—Anchorage is prohibited in the turning basin of the ferry terminal.

Northumberland Strait—The Confederation Bridge

6.72 The Confederation Bridge crosses Northumberland Strait joining Jourimain, New Brunswick and Borden Point, Prince Edward Island, a distance of about 7 miles. Over the navigable waters of Northumberland Strait, the bridge is composed of 44 concrete navigation spans, numbered from Pier 1, on the Prince Edward Island side, to Pier 44, on the New Brunswick side. The typical span has a horizontal distance of 250m and a minimum vertical clearance of 23m, with a vertical clearance of 35m at mid-span. The Northumberland Strait Vessel Traffic Services Zone has been established to facilitate traffic through the Northumberland Strait.

The navigation span for vessels greater than 1,425 gross tons lies between Pier 21 and Pier 22, about 3.1 miles SSW of Borden Point. The horizontal clearance is established at 172m, with a vertical clearance of 48m at the center of the span.

The Confederation Bridge

Winds—Weather.—It has been reported that during summer, in the early evening and early morning, the piers of the Confederation Bridge become surrounded by fog across its entire length. In the evening, bridge superstructure could cool quicker than the surrounding air and heat would be conducted away from the piers to cool the surrounding air to below the dew point. In the morning, the bridge could take longer to heat in the upper levels and conduct heat away from the piers to cool the surrounding air to below the dew point.

The following restrictions apply at the navigation span:

Restriction Category	Passenger Ships	Cargo Ships
Maximum gross tonnage	33,500 gt	47,000 gt
Maximum draft	15m	15m
Maximum air draft	48m	48m
Maximum beam	35m	35m
Maximum speed over the ground within 5 miles of the bridge	11 knots	8 knots

No vessel greater than 1,425 gross tons shall transit the bridge if visibility is less than 1.5 miles.

Vessels of 1,425 gross tons or less, other than tug and tow combinations, may transit the bridge between Piers 3 and 5 on the Prince Edward Island side and Piers 42 and 44 on the New Brunswick side. The following restrictions apply:

Restriction Category	Between Pier 3 and Pier 5	Between Pier 42 and Pier 44
Maximum draft	10m	5.5m
Maximum air draft	28m	28m
Maximum speed over the ground	15 knots	15 knots

The waters within 5 miles on either side of the bridge are designated as an area of alternating one-way traffic for vessels greater than 1,425 gross tons transiting the bridge.

Pilotage is compulsory for all vessels 1,500 gt and over within the Confederation Bridge Compulsory Pilotage Area, which is bounded, as follows:

a. 46°11.0'N, 63°47.0'W.
b. 46°15.2'N, 63°49.2'W.
c. 46°14.0'N, 63°43.5'W.
d. 46°10.5'N, 63°41.5'W.

Vessels approaching from the E board the pilot about 3.4 miles SE of the navigation span. Vessels approaching from the W board the pilot about 3.9 miles NW of the navigation span. A Vessel Traffic Service Zone (VTSZ) has been established between lines, as follows:

1. West side—Cape Egmont, Prince Edward Island (46°24.1'N., 64°08.1'E.) to Fagan Point, New Brunswick (46°13.7'N., 64°13.7'E.).
2. East side—Rice Point, Prince Edward Island (46°07.8'N., 63°13.3'W.) to Cape Cliff, Nova Scotia (45°52.7'N., 63°28.0'W.).

Participation is mandatory, as follows:

1. All vessels of 20m or more in length.
2. Vessels engaged in towing or pushing where the combined length of the ship and any vessel or object towed or pushed by the ship is 45m or more in length.
3. Vessels engaged in towing or pushing where the length of the vessel or object being towed or pushed by the ship is 20m or more in length.
4. Air cushion vehicles of 8m or more in length.

Vessels shall report to Northumberland Traffic on VHF channel 12 at the charted call-in points.

Vessels may not overtake or meet another ship, come about, or anchor within 0.5 mile of the routing system.

Northumberland Strait—South Side—The Confederation Bridge to Shediac Bay

6.73 Jourimain Island (46°09'N., 63°49'W.), joined to the mainland by sand bars and marshes, lies about 3 miles NNW of Cape Tormentine and appears as two islands when seen from a distance. Marshes and drying flats bisect the island.

Sand Reef (Jourimain Shoals), with a least depth of 4m, lies with its SE extremity 1 mile NE of the outer pier of the Cape Tormentine ferry terminal. The reef extends NW from this point for 2 miles to Jourimain Rocks, with a depth of less than 1.8m. The area between Jourimain Rocks and Cape Jourimain, the E point of Jourimain Island, is very shallow and foul.

Tidal currents in the vicinity of Tormentine Reefs and between them and Sand Reef are strong. The flood sets S and the ebb N, with the S current attaining a rate of about 3 knots.

A lighted buoy is moored at the S end of Sand Reef (Jourimain Shoals) and close N of the 249° approach ferry terminal range.

Anchorage.—There is good anchorage during W winds, in depths of 9.1 to 11m, clear of the submarine cables, SE of Sand Reef, between it and Tormentine Reefs.

6.74 The coast trends to the W from Gunning Point, the N tip of Jourimain Island. Jourimain Shoal, with a patch drying 0.3m, extends NE for almost 1 mile from Gunning Point.

Jourimain Shoal Lighted Buoy is moored nearly 2 miles N of the drying part of Jourimain Shoal.

Drying flats fill the bight which extends for 4 miles W of Gunning Point. There is a breakwater 4.5 miles W of Gunning Point, at Botsford, but there is only a 0.3m depth at the S face of the irregularly-shaped 232m long wharf.

A light is shown from a square skeleton tower on the SE corner of the breakwater at Botsford.

Anchorage is prohibited in the area that crosses the Northumberland Strait between Botsford and Cape Bruin.

Little Shemogue Harbour is completely filled with drying flats, except for a narrow intricate boat channel leading to an L-shaped wharf 90.5m long and 77.5m wide at the face, with a depth of 2.1m alongside. The channel to the wharf is buoyed.

Little Shemogue Wharf Light is shown from a square skeleton tower situated on the outer end of the wharf (46°10'N., 64°04'W.).

R-Little Shemogue XE Lighted Buoy is moored about 1.5

miles NNE of the above-mentioned light.

Shemogue Harbour, mostly filled with drying mud flats, has a narrow buoyed channel leading to a boat anchorage. The channel has very little depth in places.

At the village of Petit Cap, 2 miles NW of the entrance to Shemogue Harbour, there is an irregular-shaped breakwater-wharf, 253m long. At the outer end, two arms extending SW enclose a U-shaped basin with a depth of about 1.5m. The outer arm is 57m long. Both arms exhibit lights.

A light is exhibited from a square skeleton tower on the SE corner of the breakwater at Petit Cap.

6.75 Cap Pele (Cape Bald) (46°14'N., 64°16'W.), 5 miles NW of Shemogue Harbour, is 12m high. Cap Pele church tower, 1.5 miles SW of the cape, is conspicuous from seaward. A breakwater wharf with a U-shaped outer end extends to the E from Cap Pele. The main part is 175m long. The outer L-extension is 64.6m long and the U-shaped outer end is 46m long.

Bas Cap Pele Approach Light is situated on the S shore of the breakwater wharf.

Bas Cap Pele Wharf Light is shown from the outer end of the breakwater wharf.

An isolated shoal, with a depth of 5.2m, lies approximately 5.5 miles NNW of Cap Pele. Depths of 6.7 to 11m lie between this shoal and the cape.

L'Aboiteau lies 1.5 miles W of Cap Pele. Training piers protect the entrance of the pond and lead into a small boat harbor which has a depth of about 1.5m. The W breakwater, 85m long, has a depth of 1.2 to 1.8m alongside. The E breakwater, 42m long, has a depth of 1.8m alongside. At its S end, it is joined to a beach protection wall which is connected to a government wharf, 68m long, with a depth of 1.2m. The channel between the breakwaters is 11m wide and is spanned by a footbridge. There is a depth of 1.2m in the harbor. A light is shown from the outer end of the E breakwater.

Point aux Bouleaux, about 6.5 miles W of Cap Pele, is low and sandy. There is a government wharf at Robichaud, about 1 mile E of the point, which is 183m along with an L-head, 105m in length. There is a depth of 1.3m alongside the inner face of the L-end. A light is shown from the outer end of the wharf.

Northumberland Strait—South Side—Shediac Bay to Richibucto Cape

6.76 Shediac Bay (46°17'N., 64°32'W.) is entered between Pointe aux Bouleaux and Cap de Caissie, about 6.5 miles NW. Most of the bay is shallow with depths of less than 5.5m, and it is only suitable for shallow draft vessels. Shediac Island, low and wooded, occupies much of the bay. The passage on the W side of the island has very little depth, with only 0.3m of water in the narrowest part.

Caution.—Grande Digue Bank, with depths of 4.6 to 4.9m, extends 2 miles NE from Cap de Caissie, on the N side of the bay. Medea Rock, with a depth of 2.1m, lies about 2 miles NE of Pointe du Chene, on the S side of the bay. Shoal patches extend S from Medea Rock to the shore. Zephyr Rock, 1 mile W of Medea Rock, has a depth of 2.4m. Chene Bank extends 1 mile N from Pointe du Chene and dries for nearly half that distance. It was reported that the NW corner of Chene Bank is extending farther N. This bank, and the extensive drying bank on the E side and S point of Shediac Island, restrict the approach channel to the harbor.

6.77 Shediac Harbor (46°13'N., 64°32'W.) has a channel with a least depth of 4m in the fairway, and in that part between Pointe du Chene, on the mainland, and Snake Point, the S end of Shediac Island. The head of the harbor, S of Pointe du Chene, has depths of 1.5 to 3m in the center, with good anchorage and shelter for small craft.

Ice.—The harbor is generally closed by ice from the first week in December to early April.

Tides—Currents.—Mean springs rise 1.6m, while mean neaps rise 1.2m.

Depths—Limitations.—Contained on the E side of this wharf, and protected by the approach pier on the S, and breakwaters on the N side, is a shallow boat basin, with depths of 0.8 to 2.5m. This basin is entered through the gap between the N breakwaters. There were charted depths of 0.3 to 2.2m in the entrance channel.

The Pointe-du-Chêne Wharf is 150m long with depths of 3.3 to 5.2m alongside. Depths alongside the S face are approximately 3.8m for the outer 94m.

There is a small craft public pier at Shediac, 1 mile SW of the Pointe du Chene Wharf. There is a dredged depth of 1.5m in the approach channel to the wharf and a depth of 0.9m on its W side.

Aspect.—Range lights are shown on Pointe du Chene close E of the harbor. The front light is shown from a white square tower; the rear light is shown from a similar structure, close S. These lights, in line bearing close to 190°, lead through the N channel.

Range beacons are situated near the south end of Shediac Island. The two red beacons in line lead from the S end of the north channel to the inner channel.

Range lights are shown on the government wharf at Pointe du Chene. Both lights are exhibited from similar structures consisting of red pyramidal skeleton towers and are in line bearing 194°.

The channel leading to Shediac Harbor is buoyed.

Pilotage.—Pilotage is available but is not compulsory. To avoid a delay in obtaining a pilot, the master of a vessel bound for Shediac must report via any coast station by radiotelephone or radiotelegraph the vessels ETA to "Pilots Shediac" at least 12 hours before arriving at the pilot boarding station. The ETA must be confirmed or corrected 4 hours prior to a new ETA. The time used must be UTC. The pilot boarding station is situated in position 46°17'N, 64°25'W.

The master of a vessel that is to depart or make a move within the compulsory pilotage area must report to "Pilots Shediac" 4 hours prior to such ETD. The time used should be local time; if UTC is used it must be expressly stated.

Anchorage.—The recommended anchorage position at Pointe Du Chene is in the entrance position, NW of the government wharf.

At the head of the harbor of Shediac, there is good anchorage for small craft, in depths of 1.5 to 3m.

Caution.—Lights, beacons, and buoys may be moved to suit changing conditions. Local knowledge is essential.

The channel is only 0.1 mile wide off the NW edge of Chene Bank, where course is altered to the alignment of the Pointe du

Chene Wharf Range Lights. The deeper part of the harbor is unsafe in NE gales experienced in autumn; swells may enter the harbor at HW in a NE summer storm also.

Vessels should exercise caution so as not to approach the port from the SE, because of the possibility of heading into the shoal areas of Medea Rock and the dangers S.

6.78 Cap de Caissie (Caissie Point) (46°19'N., 64°31'W.), the N point of Shediac Bay, is bordered by shoal water to a distance of 2 miles. A boat harbor with a depth of 1.2m over the greater part is formed by two breakwaters at the point. Depths alongside the inside faces of the N and S wharves are 0.3 to 1.5m. A light is exhibited from the head of the N breakwater.

A light is shown from a white pyramidal tower on the point.

Cocagne Harbor (46°23'N., 64°33'W.) is very shallow and suitable only for small craft. Local knowledge is essential. Cocagne Island is 18.3m high and wooded. The harbor, about 5 miles long N and S, is sheltered by Cocagne Island and a series of sandbars, partly dry at LW, which stretch from the N end of the island to the mainland. Shoals lie off the E side of Cocagne Island for a distance of nearly 2 miles.

Depths—Limitations.—At the village of Cap de Cocagne (Cocagne Cape), situated on the E side of the harbor, there is an L-shaped wharf with a face 117m long. There is a small basin on the S side of the wharf with depths of 0.6 to 1.6m.

Aspect.—Range lights, in line bearing 219.5°, are shown E of the bridge.

At Cote d'Or, 0.5 mile N of the Cocagne River, there is a government wharf 122m long and 12m wide at the outer end, with a depth of 1.2m at the outer face.

At Cormierville, 1 mile NW of Cocagne Island, there is a causeway, 151m long, from which a T-shaped wharf extends a further 53m. The length of the outer face is 72m, with depths of 0.9 to 1.4m. A channel, with a depth of 0.9m and marked by stakes, leads to the wharf. A finger pier lies close inside of the outer face.

6.79 Buctouche Outer Bar extends for 7 miles N from abreast Cocagne Island, running nearly parallel to the coast. There are depths of 3 to 4.6m on this bar, with North Patch at the N extremity having 3.7m.

Buctouche Bar, a partially grass-covered narrow isthmus of sand and clay extends for 6 miles in a SE direction from the mainland N of the mouth of the Buctouche River and forms a shallow bay inside the bar at the mouth of the river. Much of this bay is filled with extensive flats of mud and eelgrass which nearly dry at LW. The bar is subject to continual change due to action of wind and sea.

Buctouche Bar Light (46°28'N., 64°37'W.) is shown from a white square tower situated on the S extremity of the bar.

Caution.—A sandy shoal, with a depth of 7.3m, lies about 8.5 miles ESE of Buctouche Bar Light.

A shoal, with a least depth of 5.5m, sand and shells, lies about 5 miles E of Buctouche Bar Light.

A shoal, with a depth of 4.6m, sand, lies about 4.5 miles NNE of Buctouche Bar Light.

Deep-draft vessels transiting Northumberland Strait should take care not to approach the W side of the strait in the vicinity of Buctouche Bar Light.

6.80 Buctouche Harbor (46°28'N., 64°43'W.) is entered S of the end of Buctouche Bar, where there is a narrow dredged channel leading through the shoals to Buctouche, on the river about 5 miles from the entrance to this channel. Mariners should not attempt to navigate the channel without local knowledge.

Buctouche Road, off the entrance of the Buctouche River, and within Buctouche Outer Bar, is only 0.6 mile across at the widest and deepest part, where a depth of 6.1m or slightly more can be found. In spite of some shelter from seaward provided by Buctouche Outer Bar, it is a very exposed anchorage.

At Crossman Point, on the SE side of the entrance to Buctouche Harbor, there is an L-shaped government wharf 126m long and 109m long at the outer face, with a least depth of 0.9m on the inner side.

Richibucto Light

Aspect.—Range lights for the second reach of the channel are shown W of Indian Point. The front light is shown from a white square tower. The rear light is exhibited from a red skeleton tower. These lights, in line bearing 317.5°, lead from the vicinity of Mussel Bank to where the channel turns abruptly to the W.

Dixon Point Reach and Indian Point Reach are marked by spar buoys; a can buoy indicates a wreck on the W side of the channel near Oyster Shoal. The channel beyond the turn to the W into the river is marked by bush stakes.

Depths—Limitations.—There is a government wharf, 67m long, with a reported depth of 6.7m alongside in 1977. The ruins of a wharf lie at the lower end. Irving Oil wharf is 0.3 mile below the government wharf. The face is 13m long, with 4.3m depth. Behind this wharf are oil storage tanks.

A bridge above the government wharf, with a vertical clearance of 2.4m, blocks navigation to all but boats on the upper river.

Pilotage.—Pilotage is not compulsory, but is available. To avoid a delay in obtaining a pilot, the master of a vessel bound for Buctouche must report via any coast station by radiotelephone or radiotelegraph the vessels ETA to "Pilots Buctouche"

at least 12 hours before arrival at the pilot boarding station. The ETA must be confirmed 4 hours prior to arrival. The time used must be UTC. The pilot boarding station is in position 46°31.5'N, 64°32.0'W. The master of a vessel that is to depart or make a move within the compulsory pilotage area must report to "Pilots Buctouche" 4 hours prior to such ETD. The time used should be local time; if UTC is used, it must be expressly stated.

Caution.—Range lights, buoys, and stakes may be moved to suit the best channel. Silting is constant and depths may not correspond to the charts.

6.81 The coast N of Buctouche Harbor remains low and sandy. At St. Edouard de Kent, about 6 miles NW of Buctouche Bar Light, an L-shaped breakwater encloses a boat basin, with a depth of 1.2m. A light is shown from a square skeleton tower at St. Edouard de Kent.

The Chockpish River, 2.5 miles N of St. Edouard de Kent, affords shelter to boats in the shallow river mouth. Breakwaters on each side protect a narrow winding channel leading into the river as far as the highway bridge. On the S shore below the bridge, a small wharf, 30m long, parallels the stream. The depth in the channel is about 1.1m and 0.9m alongside the wharf.

A light is shown from a square skeleton tower on the N shore of the Chockpish River.

Chockpish Range Lights are in line bearing 170°. The front light is shown from a square skeleton tower situated on the shore W of the above-mentioned light; the rear light is shown from a similar structure.

Northumberland Strait—South Side—Richibucto Cape to Point Escuminac

6.82 **Richibucto Cape** (46°40'N., 64°43'W.) is a sandstone and clay headland with cliffs about 9.1m high. A reef extends 1 mile offshore from the head, and continues N along the coast for about 3 miles. Richibucto Cape Light is shown from a white square tower situated close N of the head.

About 0.3 mile N of the light is a boat harbor formed by breakwaters enclosing a basin. A stone groin extends 40m from the NE corner of the breakwater. The entrance, 23m wide, with a depth of 1.5m, is at the SE corner of the enclosing breakwaters. The harbor is divided into an inner and outer section by a center pier, 61m long, with a depth of 1.2m on either side. Depths in the harbor run from 1.1 to 1.8m. A derrick is situated near the outer end of center pier. Local knowledge is advisable as silting occurs in the harbor and approach channel.

Richibucto Cape Breakwater Light is shown from the SE outer end of the breakwater at the boat basin.

6.83 The **Richibucto Harbor** (46°41'N., 64°52'.) entrance lies between two sand spits, each several miles in length and with sand dunes 9.1m high. The buoyed channel over Richibucto Bar is narrow and shifts with the action of gales and ice. There was a least reported depth of 2.7m on the bar and local knowledge is essential, with local pilots being available.

Within the entrance, Richibucto Harbor widens into an expanse of nearly drying mud and weeds, through which the channel of the river runs. On the N side, a shallow bay leads to lagoons lying within North Richibucto Beach, and on the S side, within South Richibucto Beach, is a similar bay with Indian Island dividing it in two.

Richibucto is situated on the W bank of the river, 3.5 miles from the entrance. The buoyed channel leading to the wharves from the entrance is narrow and intricate.

Tides—Currents.—The average tidal rise is about 1m. The currents in the harbor generally follow the channels and attain a rate of 1.5 to 2 knots.

Depths—Limitations.—The Public Wharf at Richibucto, is 219m in length and has an alongside depth 4.3m. The Fisherman Jetty is 38m in length and has an alongside depth of 3.8m.

A fisherman's wharf is situated close S of the government wharf. It extends 122m from the shore, with an outer face 38m long. There are depths of 1.4m alongside the N face, 3.8m alongside the outer face, and 1.5m alongside the S face.

Aspect.—The entrance channel and river are buoyed.

The channel range, in line bearing 277°, is situated on marshland on the W side of the harbor.

Three pairs of range lights indicate the channel, after entering the harbor, to the town of Richibucto. North Richibucto Beach Inner Range Lights, in line bearing 045.5°, use a structure for the front light in common with the Outer North Richibucto Beach Range Lights. A second pair of lights, in line bearing 065°, is situated on the W end of the intersection with the line of the third pair of lights, in line bearing 227°, situated at Richibucto.

Anchorage.—The only anchorage in the vicinity of Richibucto is outside the bar near the entrance range, where there are depths of 6.7 to 9.1m about 0.8 mile offshore. The anchorage is completely exposed and the bottom is rock E of the range line.

Pilotage.—Pilotage is compulsory. Pilot boards the vessel about 1 mile off the harbor entrance.

Caution.—Because of changes, the range lights and buoys are moved from time to time to mark the best channel leading into Richibucto Harbor. Local knowledge is necessary in order to enter.

6.84 From the mouth of the Richibucto River, the coast trends N and is low, with sand bars and beaches enclosing extensive shallow lagoons. Kouchibouguac Bay is generally shallow and foul for a considerable distance offshore, and NE gales send a heavy sea into the area.

The Kouchibouguacis River discharges into Kouchibouguacis Lagoon (Baie de Saint Louis). Blacklands Gully (Goulet de Terre Noire), about 4.5 miles NW of the Richibucto River, is the main entrance into this lagoon from seaward, but local knowledge is necessary to navigate the shallow channel, which is marked by buoys and is only available for boats. The depth over the bar and into the lagoon and river is variable, with depths of less than 0.9m. The channel is marked by buoys.

The Kouchibouguac River, after flowing for more than 1 mile through an extensive, nearly drying lagoon, enters the sea through sand bars at Little Gulley, which have a depth of about 0.5m, frequently shifting in heavy E gales. The channel is at all times narrow and intricate, and should not be attempted without local knowledge.

Kouchibouguac Sector Light (Little Gully Sector Light) is shown from an aluminum skeleton tower on the N bar at **Little Gully** (46°51'N., 64°55'W.).

There is a wharf, with a reported depth of 1.2m alongside, on the N bank of the channel at the entrance of the river into the lagoon.

6.85 Pointe-Sapin (46°59'N., 64°49'W.), low and sandy, is located at the N end of Kouchibouguac Bay and is bordered by shoal water.

Sapin Ledge, with a least depth of 3.7m, extends 2.5 miles E from Point Sapin. Sapin Ledge Lighted Buoy, is moored nearly 3 miles E of Point Sapin, off the E end of the ledge.

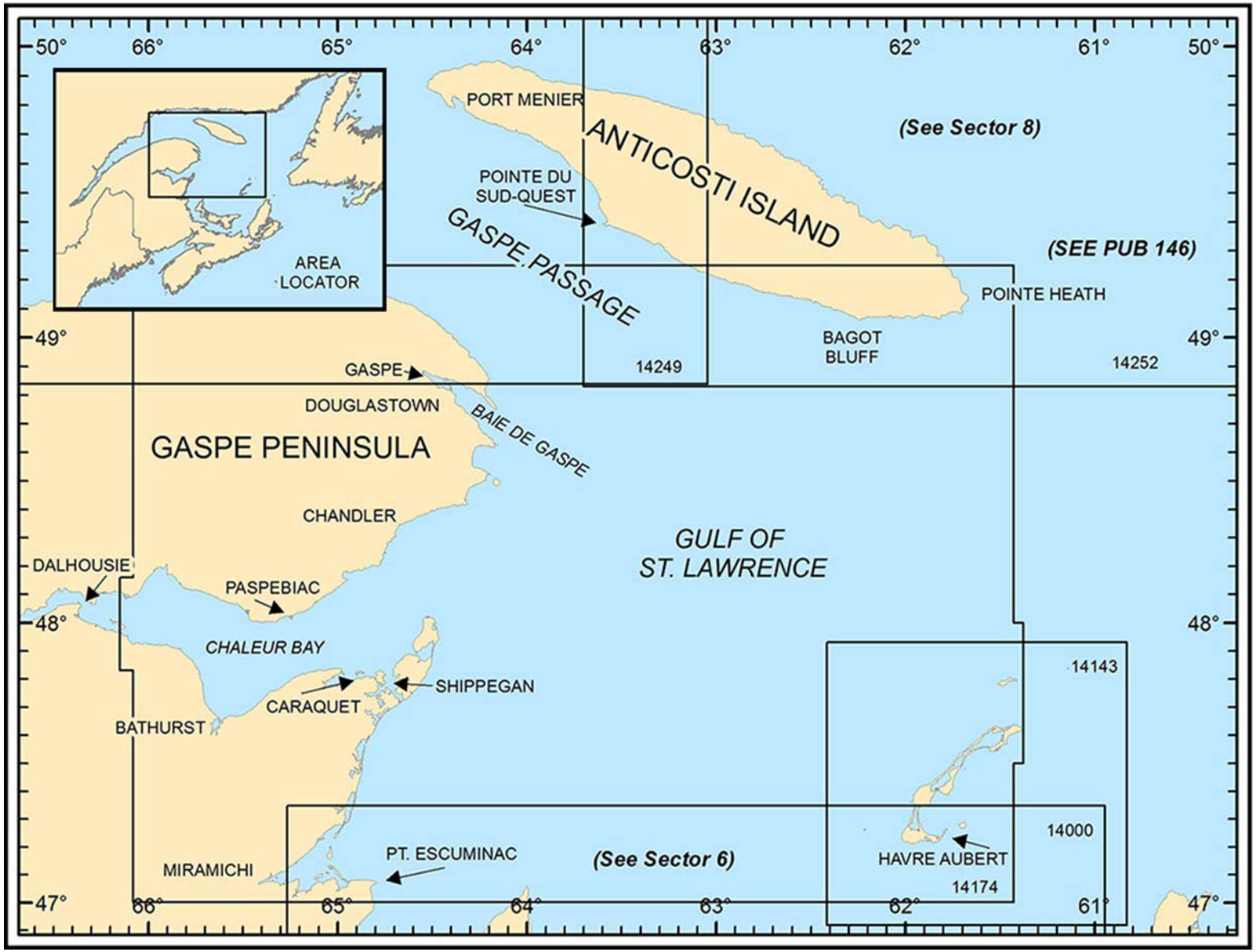
At the settlement of Point Sapin, 1 mile SW of Point Sapin, there is a harbor for fishing boats. The entrance into the basin between two breakwaters is 21m wide. A detached breakwater is located about 76m to the S of the E breakwater.

In 1992, depths were significantly less than the dredged depth, averaging about 0.8 to 1m for the majority of the basin.

Range lights lead into the basin between the breakwaters. The front light is shown from a square skeleton tower situated near the inner end of the E breakwater; the rear light is shown from a white square tower on the shore.

The church at the village is conspicuous.

The coast between Point Sapin and Point Escuminac, 6.75 miles N, is low, and shallow water extends some distance from it.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **7** — CHART INFORMATION

SECTOR 7

THE GULF OF ST. LAWRENCE (THE GASPE PENINSULA) AND ANTICOSTI ISLAND (SOUTH SIDE)

Plan.—This sector describes the W shore of the Gulf of St. Lawrence between Point Escuminac and Cap de Gaspe, and then W along the N side of the Gaspe Peninsula to Cap de la Madeleine. The S coast of Anticosti Island between Pointe Heath and Pointe Ouest is then described. The descriptive sequence is N and then W along the N side of the Gaspe Peninsula, and then W along the S side of Anticosti Island.

General Remarks

7.1 The W shore of the Gulf of St. Lawrence between Point Escuminac and Cap de Gaspe, about 105 miles NE, is very irregular. Three large bays and many small bays and inlets indent the coast.

Miramichi Bay lies N and W of Point Escuminac and recedes W to the mouth of the Miramichi River. The deep-water commercial ports of Chatham Harbor and New Castle Harbor stand on the banks of this river.

The passage to the Miramichi River from Miramichi Inner Bay continues through Middle Ground and Oak Channel. A maximum speed limit of 7 knots is in effect for the Miramichi River above Lighted Buoy M51, which is moored S of Oak Point.

Anchorage grounds are scarce for large vessels because of the narrow channel in most parts of the river. Good anchorage grounds lie off the SW part of Portage Island in Miramichi Inner Bay. Vessels should wait in this anchorage for good weather before proceeding inward or outward.

Chaleur Bay extends W for about 78 miles from its entrance off Miscou Island and is the largest bay bordering the W side of the Gulf of St. Lawrence. Several smaller bays and coves indent its shores. A few of the ports located around the perimeter of the bay and within the Restigouche River, at the head of Chaleur Bay, are important commercially.

Gaspe Bay lies NW of Cap de Gaspe and has a sheltered harbor near its head which can accommodate large vessels.

The coast from Point Escuminac to Miscou Island is generally low, but farther N in the vicinity of Baie de Gaspe the coast is bold and has many steep headlands.

Between Cap de Gaspe and Cap de la Madeleine, about 60 miles NW, the coast is regular and clear of dangers outside the 40m curve which lies, at most, less than 2.5 miles offshore. A number of small bays and coves indent this coast, which is generally bold and cliffy. Rugged hills rise to elevations of 304m or more about 1 to 2 miles inland.

The S coast of Anticosti Island from Pointe Heath, the SE extremity, to Pointe Ouest, the NW extremity, presents no dangers outside the 20m curve, which has its greatest distance about 1.8 miles offshore. The SE and NW sections of this coast, up to 3 miles inland, rises to elevations of about 106m, but in general the shore is lowered by drying reefs.

Gaspe Passage, which lies between the Gaspe Peninsula and the SW side of Anticosti Island, is deep, the 200m curve lying within 8 miles of the peninsula and within 10 miles of the island.

Winds—Weather

7.2 Although the Gulf of St. Lawrence covers a relatively small area, it is subject to very great variations in weather conditions. During a winter storm, it would be quite possible for the NW part to be experiencing driving snow with temperatures below the freezing point, while the SE part would be affected by mild temperatures, fog banks, intermittent drizzle, and perhaps also some breaks in the cloud to permit intervals of sunshine.

In the more settled weather of summer, there are many days of sunny skies, light winds, good visibilities, and pleasant temperatures. As well, there will be some days with rain or drizzle which will tend to produce mist or fog. Thunderstorms are relatively rare, being more frequent during July and August. These are sometimes accompanied by squally weather of short duration.

With the approach of autumn, there is an increase in cyclonic activity on the E coast. When disturbances approach from the S to SW, they produce slowly strengthening E winds. Drizzle, and then rain, may follow. If the center of the disturbance passes by to the W of the observer, he will find the moist cool E winds will shift to the S or SW often with at least partial clearing of the skies. In time, this will be followed by a shift of the wind to E or NW with the arrival of a cold front which frequently, though not always, will bring showers. If however, the center of the disturbance passes by to the E of the observer, the moist E winds will back gradually to the N or even NW and any precipitation will gradually come to an end as drier air arrives.

The same general pattern applies to winter disturbances, but the gradual lowering of temperatures with the advance of the season results in snow rather than rain to the N and NW of the center of the disturbance. In the "warm sector" (usually found to the SE of the center), S to SW winds will still occur, but the much milder temperatures associated with these winds may produce rain and mist. Colder air arriving from the NW, once the system has gone by, becomes very unstable over open waters of the gulf in early winter. In such circumstances, snow squalls are produced which may be so frequent and vigorous as to appear like a continuous snowstorm. These strong NW winds of early winter can persist for many hours or even days, producing spray which tends to freeze into thick coatings on ship superstructures. Stability is affected by the heavy coatings of ice thus acquired. The rate of accretion will depend upon many factors such as ship design, course relative to wind and waves, wind strength, and air temperature, but for the purpose of marine warnings, the general practice is to assume significant icing due to freezing spray when air temperatures are -4°C or colder, and wind speeds are 25 knots or higher.

As the winter progresses, more and more of the gulf becomes covered with ice. This not only reduces the likelihood of freezing spray, but diminishes the development of snow squalls in cold NW winds.

The spring months are truly transitional, in that a week or two of wintry conditions may followed by relatively mild weather, which will give way to yet another cold (and often stormy) period. Gradually however, a decrease in stormy conditions will be noted as the temperatures move toward values above the melting point. More and more frequently, winds from a S to SW direction will be noted, bringing milder air which is rapidly cooled over the still cold waters of the gulf.

Fog is most prevalent from mid-spring to early summer. As mid-summer approaches, water temperatures move toward warmer values, reaching their maximum in late August or early September. As this happens, the frequency of fog diminishes.

Of a different nature is the "sea smoke" sometimes produced in winter if very cold air passes over open water when winds are light. At such times, evaporation from the water is cooled into fog droplets in the first few meters above the water surface, but an observer at a higher elevation (as on the bridge or lookout position of a larger ship) may be able to see quite clearly across the top of the “sea smoke”. At or near water-level, visibility may be quite restricted. Such conditions are seldom persistent, as any increase in the wind strength will tend to set up air currents which dissipate the mist.

Visibilities are reduced by fog, mist, or precipitation to 1 mile or less some 5 to 10 per cent of the time through the year. In the NW gulf, including the river estuary, poor visibilities occur over 10 per cent of the time in February, March, April, and again in July; while in other months, the frequency averages around 6 or 7 per cent.

Thunderstorms can occur in any month, but are rare from November to early May. Waterspouts are not uncommon over the gulf, particularly when the air temperatures are much colder than the water. They are generally short-lived and do not in general represent a serious danger.

Ice

7.3 The sea ice encountered in the Gulf of St. Lawrence is mainly of local origin, but ice is also "imported" from the St. Lawrence Estuary and on rare occasions appreciable drift through the Strait of Belle Isle can develop. Drift of ice from the estuary into the gulf is supported by both mean winds and current, but intrusions through the Strait of Belle Isle arise only in years when persistent NE winds develop after the local ice in the strait has dispersed or melted.

Ice formation usually begins in the upper part of the estuary about mid-December and spreads into the W part of the gulf and along the N shore before the end of the month. At the same time, ice growth begins in the coastal waters of south Labrador and spreads through the Strait of Belle Isle in the latter part of December. In a normal winter the ice builds up gradually along the S side of the estuary, spreads E from the New Brunswick coast through Northumberland Strait during the first half of January, and then gradually fills the SW half of the gulf from the Gaspe Peninsula to Cape Breton Island by the early part of February. While this increase in cover is occurring, the ice along the north shore develops more slowly and when ice begins to drift into the Cabot Strait it is normal to find the whole area from eastern Cabot Strait to Pointe Heath to Pointe Riche still open with only new and gray ice in Jacques Cartier Passage and along the shore E to Harrington Harbor. In the NE arm of the gulf and Strait of Belle Isle, an extensive amount of gray and gray-white ice up to 30cm thick can be found.

In mild winters, ice growth may only partially fill the SW gulf with no efflux through Cabot Strait at any time during the winter. In cold years, the area may effectively fill with ice by the end of January and drift out of the gulf can begin before the end of the month.

The ice cover in the gulf becomes quite extensive in normal winters, but even in the coldest years it is never completely covered. Tidal motion, currents, and wind induced drift all combine to keep at least small areas of open water present, and in normal seasons there are useful leads that can be used for navigation.

The general drift of ice in the Gulf of St. Lawrence is SE from the Gaspe Peninsula to Cabot Strait, with some of the floes arcing south to Prince Edward Island. In the north portion of the gulf, the drift is also SE at first but becomes more S between Anticosti Island and Newfoundland. As a result, open leads and area of dispersed new and gray ice are common from Cape Whittle to Pointe des Monts, along the N shore of Chaleur Bay and, to a lesser degree, on the S side of Anticosti Island and in the lee of the Iles de la Madeleine. Passing storms may close them temporarily, but in most cases they soon reappear.

Because of the open water area that is commonly present in the Cape Ray-Cape St. George area and the light ice conditions through Jacques Cartier Passage to Pointe des Monts, it is common for winter shipping to follow this somewhat longer route. Years with prevalent NE winds can alter this pattern, but in these cases the lee side of Anticosti Island becomes a more favorable route.

The harbors and bays in the gulf are usually closed by the end of December and even in the S part of the gulf, navigation is not considered safe after the first week in December or before the 15th of April.

As a general rule, the harbors in the W part of the gulf close earlier and open later than those in the E part. Each locality is described separately in the body of the text when local ice conditions require it.

Tides—Currents

7.4 The currents through the Gulf of St. Lawrence are the result of progressive movements of the water on which are imposed the tidal influences, the effects of the winds, and the effects of varying barometric pressure.

The tidal effect on the current is felt throughout the gulf, but it is only in the principal straits and in the mouths of rivers that the direction of the flow is reversed by the tide. Its effect in the more open waters is to cause a gradual change in direction, which is often completely round the compass in the tidal period.

Except for the Gaspe Current and the currents in the straits and near the heads of bays, the velocity of the current seldom exceeds 1 knot; its direction is very variable, being easily influenced by strong winds, and on this account it is necessary to

exercise caution in navigation.

Broadly speaking, a general circulation exists in the gulf area, the rotation being counterclockwise.

The Gaspe Current off the Gaspe coast sets constantly SE, or outward, from the St. Lawrence River to the Gulf of St. Lawrence. In general, it occupies a belt lying between 2 and 14 miles offshore. Its greatest strength lies 4 or 5 miles off the coast, where it attains a velocity of 2 knots at springs and about 1.5 knots at neaps. About 10 miles offshore it is much weaker and beyond 14 miles any current there is, is no longer continuously outgoing. Between this belt and the shore, a tidal current is found which sets W during the rising tide, while on the falling tide the direction is with the main current. This inshore flood current is little felt except at springs and it does not exceed 1 knot at any time.

Although the Gaspe Current is constant in the sense of being always in the one direction, its velocity varies markedly in close relation to the tide. It is thus stronger during falling tide and weaker during rising tide and every tidal variation is reflected in the current.

The winds are usually directional with the coast, but even when heavy, they have remarkably little effect upon this current, amounting to a fraction of a knot in general.

Vessels inbound are tempted to take a route close to land to avoid the Gaspe Current and take advantage of any N flood current along the shore. Aside from the risk of running close inshore, this tidal flood is in most places only strong enough to be helpful during the time of spring tides and then only for the period of tidal flood. By keeping to an offing miles near the outer edge of the Gaspe Current, where it is weak enough to be inappreciable, better time can be made.

For vessels outbound, much is to be gained by keeping in the stretch of the Gaspe Current at an offing of 4 to 5 miles. Vessels bound for the Atlantic by the route S of Newfoundland will benefit by keeping this distance offshore until they leave the Gaspe coast.

On the Anticosti Island side of Gaspe Passage the current usually veers completely around the compass clockwise in the tidal period, but holds longer and more strongly along shore. The strength seldom exceeds 1 knot in any direction.

Any local currents, which might be encountered in the bays, inlets, and rivers which lie within the limits of this sector, will be included in the principal description of that part of the coast which they affect.

Pilotage.—Pilotage for ports in this sector is obtained through the Atlantic Pilotage Authority. See Pub. 140, Sailing Directions (Planning Guide) North Atlantic Ocean and Adjacent Seas for further information.

Point Escuminac to Miramichi Bay

7.5 Point Escuminac (47°05'N., 64°53'W.), the S entrance point of Miramichi Bay, is a low wooded sandstone cliff. A light is shown from a white hexagonal tower on the point. The light structure is conspicuous against the dark wooded background.

From Point Escuminac, the coast extends irregularly W for about 22 miles to the mouth of the Miramichi River and is broken by several bays into which small rivers flow. The coast then continues NE and N for about 67 miles to North Point, the N extremity of Miscou Island. This stretch of the coast is low and bordered by sand bars and beaches, often enclosing shallow lagoons, through which rivers flow into the gulf. The entrances of these lagoons and rivers, known locally as gullies, are usually obstructed by sand bars and are navigable only by small craft. A chain of islands divides Miramichi Bay into an outer and an inner bay. The Miramichi River is navigable by large vessels to the several ports which stand along its banks.

Point Escuminac Light

Escuminac (47°05'N., 64°54'W.), a village W of Point Escuminac, has a boat harbor formed by breakwaters. The harbor contains a pilot station and fish plant. It has two basins. The entrance to the inner basin, with depths of 1.3m, is 29m wide. The smaller outer basin, formed by an extension of the E breakwater, is 39m wide, and has depths of 1 to 1.5m at its entrance.

Caution.—The W and S parts of Miramichi Bay are shoal for a considerable distance from shore, but there are no dangers within the bay outside the 10m curve. Northward of Miramichi Bay, the 10m curve follows the general trend of the coast and lies from 0.75 to 1.5 miles offshore between the bay and the N end of Miscou Island.

Miramichi Bay

7.6 Miramichi Bay (47°09'N., 65°01'W.) lies between Point Escuminac and Blackland Point, about 14.5 miles NW. The outer bay is separated from Miramichi Inner Bay by a chain of low, sandy, and partly wooded islands which stretches from the S to the N shore, about 6.5 miles W of Point Escumi-

nac. The preferred channel of approach leads between the two larger islands of the chain, then W and SW to the estuary of the Miramichi River, which is navigable by vessels as far as Northwest Bridge, about 15.5 miles above its entrance. Chatham and Newcastle, two commercial ports, are located within this river.

Escuminac Reef (47°05'N., 64°47'W.), on the SE side of Miramichi Bay, extends about 1.8 miles N and 1.5 miles NE from Point Escuminac.

On the S side of Miramichi Bay, the 5m curve extends W from Escuminac Reef to a position off the S island of the group spanning the bay and lies from 0.5 to 1.5 miles offshore. In the center of the bay, the 10m curve lies from 3.5 miles off the E side of Fox Island to 1.75 miles off the NE side of Portage Island. Depths to the E of this curve increase regularly to 18.3m.

7.7 Miramichi Bar (47°08'N., 64°59'W.), a sandy ridge about 3 miles long, with a least depth of 0.6m, lies about 2 miles E of Fox Island and parallel to it. Outer Bar, with depths of less than 9.1m and a least depth of about 4m, lies between the S end of Miramichi Bar and the shoals extending N from the mainland and Huckleberry Island.

Ship Channel, the main approach channel, lies between Miramichi Bar and the shoals bordering the E side of Fox Island. There is a least depth of 7.7m in this channel. A shoal, known as "The Lump," lies at the S end of this channel and Spit Shoal lies close W of its N end.

Ice.—Miramichi Bay and the Miramichi River are open to navigation year round, although ice may hinder navigation during the winter; icebreaker assistance is available.

During the ice season, at night, if a river transit has not been completed, vessels stop and are held in position by the ice that closes in.

Tides—Currents.—The currents have a rate of 1 to 1.5 knots in the outer bay, but increase in the narrows between the islands to rates of 2 to 3.5 knots or more. Both the rate and direction of these currents are greatly affected by the winds.

Because of the shallow nature of the bay, estuary, and river, local weather conditions normally cause actual water levels to differ from predicted levels by as much as 1m.

Pilotage.—Pilotage is compulsory. Vessels bound for ports within Miramichi Bay, between April 16 and December 10 (ice free), must report their ETA to the Atlantic Pilotage Authority 12 and 4 hours before the vessel's ETA to the pilot station.

For contact information, see table titled **Miramichi—Contact Information**. For pilot boarding locations, see Tthetable titled **Maramichi Bay—Pilot Boarding Locations.**

Maramichi Bay—Pilot Boarding Locations	
16 April-10 December (Ice Free)	
Any LOA	47°07.5'N., 64°47'W
11 December-15 April (Ice Season)	
LOA greater than 222.5m	45°24'N., 61°01'W
LOA less than 222.5m	45°30'N., 61°11'W

From December 11 to April 15 (ice season), a helicopter is available at Escuminac for pilot boarding.

Masters of vessels bound for Miramichi must report their ETA to the Atlantic Pilotage Authority at least 24 hours prior to the vessel's ETA at the pilot boarding station. The ETA must be confirmed or corrected 12 and 6 hours prior to arrival. The time used must be UTC. The pilots monitors VHF channel 14.

Caution.—Because of continuous silting, the navigational aids in Ship Channel are frequently shifted to mark the deepest channel.

The main entrance to the inner bay, between Fox Island and Portage Island, has a depth of about 11m in the fairway. The buoyed channel through Horse Shoe Bar, Grand Dune Flats, Oak Channel, and Sheldrake Channel had a least depth of depth of 7.5m in the vicinity of Grand Dune Flats.

Because of silting, the navigational aids marking these channels may be moved to indicate the best fairways.

Depths in the channels are no longer maintained by dredging and may be less than charted.

Huckleberry Island, crescent-shaped and 10m high, stands about 3 miles W of Lower Escuminac. Huckleberry Gully, the shallow buoyed channel which lies between this island and the mainland. The twin spires of the church in the village of the same name are very conspicuous. The pier at the village has shallow depths alongside.

7.8 Fox Island (47°07'N., 65°01'W.), separated from Huckleberry Island by Fox Gully, is narrow and about 4 miles long. The island is partly wooded and consists of parallel ridges of sand hills. Fox Gully almost dries at LW.

The S shore of the inner part of Miramichi Bay, from French River Point, at the NW end of Baie Sainte-Anne, extends WSW for 4 miles to Point Gardiner and then SW for 2 miles to the Riviere du Vin. This river has shallow depths.

Bay du Vin (47°04'N., 65°10'W.), the bay fronting the Riviere du Vin, provides good anchorage for small vessels, in a depth of 5.6m, W of Bay du Vin Island. The W side of the bay is shallow. Bay du Vin Harbor, on the S side of the island, provides anchorage sheltered from all winds. There are tidal currents in Havre du Vin. Between Gardiner Spit and Bay du Vin Island the currents are especially strong, attaining a current flow of 4.5 knots or more. Gardiner Spit, a sandy shoal, extends N from Point Gardiner into the harbor.

Blackland Point (47°16'N., 64°58'W.), the N entrance point to Miramichi Bay, is low, swampy, and has steep black peaty banks. The NW shore of the inner bay extends about 19 miles SW from this point to Moody Point, near the entrance to the Miramichi River. The N half of the island chain spanning Miramichi Bay extends S from Blackland Point and includes Neguac Sand, Lower Portage Island, and Portage Island.

Neguac Sand, also known as Neguac Beach, is separated from Portage Island to the S by Portage Gully. This channel leads into Miramichi Inner Bay and has depths of less than 1.8m in places.

Portage Island (47°10'N., 65°03'W.), about 2.8 miles long, stands on the N side of the main channel leading into Miramichi Inner Bay, about 1.5 miles N of Fox Island.

Conspicuous church spires are situated in Neguac, about 3 miles NNW of the N point of Portage Island and at Burnt Church Point, about 3 miles WNW of the same point.

The piers at Lower Neguac and at Burnt Church all have shallow depths alongside.

The passage to the Miramichi River from Miramichi Inner

Bay continues throgh Middle Ground and Oak Channel. A maximum speed limit of 7 knots is in effect for the Miramichi River above Lighted Buoy M51, which is moored S of Oak Point.

7.9 The **Miramichi River** (47°05'N., 65°19'W.) begins at Sheldrake Island, about 18 miles from Outer Bar in Miramichi Bay. Eastward of that island, the inner bay, with its low and receding shores, bears no resemblance to a river. Due to continuous silting, the depths are constatly changing. Mariners are warned to exercise caution when navigating in these waters.

Anchorage.—Anchorage grounds are scarce for large vessels because of the narrow channel in most parts of the river. Good anchorage grounds lie off the SW part of Portage Island in Miramichi Inner Bay. Vessels should wait in this anchorage for good weather before proceeding inward or outward.

The river extends in a general SW direction for about 13 miles to Beaubears Island, where it divides into Northwest Miramichi and Southwest Miramichi. The river is navigable as far as Northwest Bridge, which crosses Northwest Miramichi about 2 miles above Newcastle. Besides the ports of Chatham and Newcastle, there are several other smaller towns along the river which have berthing facilities.

The river width abeam Moody Point, about 1 mile W of Sheldrake Island, is 0.75 mile and narrows to 0.5 mile at St. Andrews Point, 1.75 miles upstream, this width being retained almost to Chatham.

The Bartibog River flows into the Miramichi River close W of Moody Point. Bartibog Island, 9.1m high and surrounded by steep cliffs, lies in the entrance to this river.

The wharf at St. Andrews Point has a pier head 78m long, with a depth of 0.6 to 0.9m along its face. The ruins of a former wharf lie to the west of it.

St. Andrew Bank and Leggett Shoal foul the greater part of the river between St. Andrews Point and Lower Newcastle on the N bank. The main channel passes N of these dangers.

Gordon Point Wharf, a T-shaped public piers 70m from the shore to an outer end 9.4m long with depths of 0.6m and 0.9m alongside. A breakwater close to the east is in disrepair.

Middle Island (47°03'N., 65°27'W.), joined to the S bank of the river by a causeway, stands about 0.8 mile above Lyons Cove.

A bridge with a vertical clearance of 35m crosses the river 1.7 miles upstream of Middle Island. The width supporting piers on each side of the channel is 152m. An overhead high voltage power transmission line, clearance 41m, crosses the river at Middle Island. For safety reasons, a vessel passing under this cable must maintain a clearance of at least 3.7m. The support towers, marked by red lights, are conspicuous.

Caution.—Mariners are cautioned that there is a maximum speed limit of 7 knots in the Miramichi River above Lighted Buoy M51, situated about 0.4 mile S of **Oak Point** (47°07'N., 65°16'W.).

7.10 **Miramichi East** (47°02'N., 65°28'W.) stretches along the right bank of the river commencing above Middle Island and extending along the shore for about 1.5 miles.

The average dates for icing over in the harbor are from early December to mid-April. Icebreaker assistance is available and the ports operate throughout the year. Pilotage is compulsory.

The Miramichi River extends WSW for 3.5 miles above Chatham Harbor, and then turns abruptly to the S. Newcastle Harbor begins about 0.5 mile S of the turn. The river width is reduced to about 0.5 mile off Chatham.

A bridge with a vertical clearance of 35m at HW, spans the river at Chatham. The width between the supporting piers on each side of the channel is 152m.

Wright Bank (47°01'N., 65°31'W.), with a least depth of 3.9m, commences just above the bridge at Chatham and extends about 2 miles up the center of the river. The main channel passes S of this bank.

7.11 **Miramichi** (47°01'N., 65°30'W.) was formed by the merger of the towns of Chatham and New Castle in 1995 and are known as the city of Miramichi. Chatham is now known as Miramichi East and Newcastle is now known as Miramichi West. The port is formed by a bay at the mouth of Graham Creek on the W bank of the Miramichi River.

The channel approach has a least depth of 6.4m.

Newcastle Harbor is entered between concrete and boulder breakwaters, the E breakwater extends 145m outwards. The outermost 30.5m consists of steel pilings and a concrete pier. The W breakwater is 92m is a concrete pier on steel pilings.

The Newcastle Marine Terminal is located close below the Morrisey Bridge. An air draft of 34.7m restricts passage under the Centennial Bridge at Chatham. During winter season icebreaker support is available upon request.

Depths—Limitations.—The Morrissey Bridge, with a swing span allowing a channel width of 24.4m, spans the river upstream from Newcastle. Vessels over160 gross tons are prohibited from passing through the bridge, except against the tide. The bridge has a vertical clearance of 2.4m when in the closed position.

Miramichi—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Newcastle Marine Terminal			
Miramichi Port Committee Inc. Quay	313m	9.0m	Timber products.
Chatham			
Transport Canada Wharf (Millbank)	170m	7.0m	—
New Brunswick Hydro Wharf	30m	6.4m	—
Transport Canada Wharf (E)	179m	10.9m	—

Miramichi—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Transport Canada Wharf (W)	137m	7.6m	—
Northwood Panelboard	152m	7.6m	—
Marine Terminal Wharf	91m	7.6m	Petroleum and cement.
Imperial Oil Wharf	152m	10.6m	Petroleum products.
Irving Oil Wharf	61m	6.7m	Petroleum products.

An overhead power cable, with a vertical clearance of 37m, crosses the river close above the Morrissey Bridge. For safety reasons, a vessel passing under this cable must maintain a clearance of at least 3.7m.

Number 3 Bridge, with a vertical clearance of 6.1m, crosses the river at Strawberry Point, 0.4 miles S of Morrissey Bridge. This bridge together with Morrissey Bridge restrict navigation on Miramichi River, upriver of Newcastle.

Contact Information.—See the table titled **Miramichi—Contact Information**.

Miramichi—Contact Information	
Chatham Port Authority	
Telephone	1-506-622-7890
Facsimile	1-506-622-2160
Newcastle Port Authority	
Telephone	1-506-622-0918
Facsimile	1-506-622-0907
Miramichi Harbormaster	
Telephone	506-778-8027
Miramichi Pilots	
Call sign	Miramichi Pilots
VHF	VHF channel 14 (11 December to 5 April) and VHF channel16 (6 April to 10 December)

Miramichi Bay to Miscou Island

7.12 Tabusintac Gully (47°17'N., 64°58'W.) stands about 0.8 mile NE of Blackland Point and is the S entrance to Tabusintac Bay, which has a river of the same name discharging into it. Old Tabusintac Gully enters the bay farther N. Both entrances are subject to silting and have general depths of 0.9 to 2.1m. Within the bay, the depths in the staked channel increase to 5.5 to 9.1m.

Two wharves within the Tabusintac River have shallow depths alongside. The N pier, L-shaped, has an outer end 55m long; the S pier is 94m long.

Two miles above the river mouth there is a wharf, 27m long, with depths 1.5 to 4.6m alongside.

Baie de Tracadie (47°33'N., 64°53'W.), the next inlet to the N, is shallow and almost dries in places. Channels crossing the bay lead to the North Tracadie River and the South Tracadie River and S to Val Comeau.

The bay entrances and channels are used only by local fishing craft.

A wharf stands on the S bank of the Tracadie River at Val Comeau and has a depth of 1.2m alongside. A wharf at the village of Tracadie has an outer end, 55m long, with a depth of 1.5m alongside. The pier exhibits a light.

Pokemouche Gully (47°40'N., 64°47'W.), the next entrance to the N, is the outlet for the Pokemouche River to the W. The entrance to this gully is shallow and available only to small craft.

Miscou Island Light

Shippegan Gully (47°43'N., 64°40'W.), about 5.8 miles NE of Pokemouche Gully, is the S entrance to Shippegan Harbor and stands at the S end of Shippegan Island (Ile Lameque). The gully is fronted by a shifting sand bar, but there is a dredged channel for small craft in which the depths are reported to be about 1.7m. Two breakwaters protect the entrance.

Springs rise about 2m, while neaps rise about 1.4m. The flood sets S, the neap N, and the turn of the flow occurs at about half tide in Shippegan Harbor. The flood is somewhat stronger than the ebb, with the maximum rate in either direction being about 5 knots at springs in the S entrance. Normally,

SW lasts for about 10 minutes.

The E coast of Shippegan Island extends NNE for about 13.5 miles from Shippegan Gully. The N end of the island, terminating at Miscou Gully, is low and narrow and forms part of the E side of Miscou Harbor.

Rocky patches, with depths of little more than 3.7m, extend up to 1 mile off some parts of this coast and breakers extend up to 1.5 miles offshore during bad weather.

The harbor for fishing craft measures about 90 by 145m, with reported depths of 0.6 to 1.5m.

Miscou Gully (47°55'N., 64°30'W.), separating Shippegan Island from Miscou Island, is very shallow and is reported to be unnavigable.

Wilson Bank, with depths of 2.4 to 9.1m, extends about 2.5 miles off the E coast of Miscou Island. Birch Point, the NE extremity of Miscou Island, is a 3m high sandstone face covered with trees. A rocky reef extends about 0.5 mile from the shore near the point.

Chaleur Bay—South Shore and the Restigouche River to Campbellton

7.13 Northwest Miscou Point (48°02'N., 64°31'W.), marked by a grassy sand hill, is the SE entrance point to Chaleur Bay. The point is fronted by shoals extending about 3 miles offshore. The N end of Miscou Island is bordered by steep sandy beaches.

During S winds, anchorage can be taken on either side of the shoal fronting Northwest Miscou Point, in depths of 9.1 to 18.3m.

Miscou Banks (48°07'N., 64°10'W.) extend about 22 miles NE of the N part of Miscou Island. The shallowest parts of this bank lie within 3 miles N of Northwest Miscou Point and 8 miles NE of Birch Point.

The S shore of Chaleur Bay, between Northwest Miscou Point and Bon Ami Point, about 74 miles to the W, is very irregular, being indented by several harbors and bays.

The S shore is generally low, but there are 30m high red sandstone cliffs between Anse-Blue and Bathurst.

In the area W of Miscou Island and Shippegan Island, between Northwest Miscou Point and Maisonnette Point, about 22 miles SW, there are several smaller islands intersected by channels leading to small harbors and anchorages.

West of this area the coast extends WSW, forming a large bight with Nipisiguit Bay in its S part. This indentation is the largest of several which lie within the limits of Chaleur Bay.

The Restigouche River, at the W end of Chaleur Bay, is navigable as far inland as Indian Point, about 17 miles above its entrance. The commercial ports of Dalhousic and Campbellton stand on the banks of this river.

Winds—Weather.—The bay is named and noted for its milder climate in comparison with the weather in the adjacent parts of the gulf. Fogs, which are frequent outside the bay, seldom penetrate towards the head, though rain and mist often accompany E gales.

Tides—Currents.—The tidal currents within Chaleur Bay are regular and the rate seldom reaches 1 knot. Off the entrance to the bay the currents are erratic both in rate and direction, especially over Miscou Banks.

Caution.—Depths throughout the central part of Chaleur Bay range from 82.3m in the entrance to a depth of 18.3m in the approach to the entrance to the Restigouche River.

7.14 From a position about 2.5 miles N of Northwest Miscou Point, the 20m curve extends irregularly SW to a position about 1.5 miles N of Maisonnette Point and then follows the remaining S coast to the Restigouche River at distances ranging from 1 to 4 miles off. The few dangers to be found along the S coast of the bay all lie within the 18.3m curve and are described with the related coastal features.

The W coast of Miscou Island is about 8 miles long between Northwest Miscou Point and Harper Point to the SSW, and recedes about 1 mile E to form a small bight.

About 3 miles S of Northwest Miscou Point there is an opening in the trees which extends across the island. At night this opening has been mistaken by vessels for either Miscou Harbour or Miscou Gully, depending on whether it was viewed from the W or E of the island.

During the summer, fairly good anchorage can be taken NW of this opening, in depths of 18.3 to 20.1m.

Miscou Flat (47°57'N., 64°37'W.), which consists of sandstone, extends about 4.5 miles W from the SW side of Miscou Island. Depths of 5.2m and less lie within 2 miles W of the same part of the island.

Shippegan Flat, of sandstone partly covered with sand, lies S of Miscou Flat and is separated from it by Miscou Channel. This foul ground extends almost 5 miles W from Black Point on the N end of Shippegan Island. Its least offshore depth of 0.6m lies about 2 miles W of Black Point.

7.15 Miscou Harbour (47°53'N., 64°33'W.), which lies between Miscou Island and Shippegan Island, has depths of 2.4 to 6.4m in its central part over a bottom of soft mud. Miscou Channel, which is less than 0.2 mile wide at one part, has depths of 6.7 to 14m between the steep-to shoals.

The spring rise in Miscou Harbour is 1.5m, while the mean range is about 1.1m.

The rate of the current through the entrance and the approach channel is usually less than 1 knot in both directions.

Two government piers are situated within the harbor, one extending from Miscou Island and the other from Shippegan Island.

In Miscou Harbor, a public pier extends 275m SE from the shore close E of the sand spit, with a berth length at the pier head of 12m and a depth alongside of 1.2m. A ferry ramp is situated on the E side of the pier. A derrick stands on the pier.

In Little Shippegan, a public pier extends from the S shore, with a depth at the pier head of 0.6m. Lights are exhibited from framework towers at the outer corners of the pier.

The W coast of Shippegan Island, between Black Point and Pointe Canot, about 4.5 miles SW, and then 7 miles SSE to Shippegan Gully, is very irregular and indented by several bays. Baie de Petite Lameque, Baie de Lameque, and Baie aux Caribous all lie along the S half of this coast.

A tower, 94m high, stands about 1 mile NNE of Pointe Canot.

Caution.—Local knowledge is required for entering the harbor.

7.16 Shippegan Bay (47°50'N., 64°44'W.) lies between

Big Shippegan Light

Shippegan Island and Pokesudi Island, to the W, and is bordered on the S side by that part of the mainland known as Taylor Island. The bay contains several good small harbors and anchorage within its limits.

Shippegan Channel, leading into the sound from the N, passes between Shippegan Flat and Pokesudi Shoal. The buoyed channel is narrow and intricate, and marked by lighted ranges.

The sound is open to navigation from about the second week in May until the first week in December.

Baie de Petite Lameque (47°48'N., 64°42'W.) stands on the E side of Shippegan Sound, about 1.8 miles S of Pointe Canot. Good anchorage can be taken off the entrance to the bay, in depths of 4.9 to 6.1m, mud. A pier extending into the bay is in ruins.

Baie de Lameque (47°47'N., 64°41'W.), the next bay to the S, has depths of 2.1 to 6.7m in the central part of the entrance, shoaling gradually to its head. The bay offers protection to vessels in all winds.

The shoal of sand and mud extending across Shippegan Sound from Pointe Alexandre, on the N side of Baie de Lameque, to Pointe Brule on the mainland.

Depths—Limitations.—The approach is through a channel dredged to a depth of 5.5m. Berths are situated inside two basins as described in the accompanying table titled **Baie de Lameque—Berth Information**.

A breakwater extends 120m SW from the breakwater-wharf. A light is exhibited from a framework tower at the head of this breakwater.

Baie de Lameque—Berth Information		
Berth	**Length**	**Depth**
South Basin		
Southwest side	100m	5.5m
Southeast side	100m	5.5m
Northeast side	90m	3.6-5.5m
North Basin		
North breakwater	250m	2.9-4.2m
Southeast side	140m	2.9-4.2m
Northeast side	80m	2.9-4.2m

7.17 Shippegan Harbor (47°45'N., 64°42'W.) (World Port Index No. 5620), which stands on the mainland about 1.5 miles S of the entrance to Baie de Lameque, is entered through a narrow buoyed channel.

Canadian Coast Guard lifeboat Shippegan (call sign CG 2389) is stationed at a wharf adjacent to the SW side of the causeway. It operates within a 50 mile radius from its base and is operational from about May 1 to November 30. All distress situations and calls for assistance should be communicated to JRCC Halifax via the nearest coastal radio station or by any other available means.

Baie aux Caribous (47°44'N., 64°41'W.), fouled by drying flats over most of its area, extends about 2 miles SE from Shippegan Harbor to Shippegan Gully. A buoyed channel, with a least depth of 1.5m, crosses these flats from the harbor to the gully.

Ice.—The harbor is frozen over from about December 15 to April 15.

Tides—Currents.—The current sets S through Baie de Shippegan and Shippegan Gully from about 3 hours before to 3 hours after the time of LW in Shippegan Harbor. The current sets in the opposite direction from about 3 hours before to 3 hours after the time of HW. The S going current is somewhat stronger than the N going current, and its rate increases more rapidly at the beginning and decreases more rapidly at the end than the N going current. The greatest rate is approximately 5kts in both directions, in Shippegan Gully. The duration of slack water is about 10 minutes, but the rate remains less than 1kt for about 45 minutes.

Depths—Limitations.— Depth in the channel from Chaleur Bay permits vessels of 3.6m draft to enter the harbor. Lights and buoys are moved as necessary to indicate the best channel. Local knowledge is necessary to enter the harbor. There are 3 L-shaped jetties, extending from the shore at Shippegan, which form 2 basins. The entrance to the N basin is approximately 52m in width, the entrance to the S basin has a width of approximately 45m.

Alongside berths are located on the inner an outer faces of the jetties, except for the NW face of the N jetty, which is protected by stones.

Shippegan Harbor

Aspect.—Shippegan Wharf Light stands on the outer end of the N jetty. Savoy Landing Light stands on the head of the Savoy landing jetty.

Shippegan Harbor—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
New North Wharf (outer face)	70m	6.8m	Fishing vessels.
Old North Wharf (inside face)	90m	6.0m	Fishing vessels.
Old North Wharf (outer face)	76m	6.0m	Fishing vessels.
Old South Wharf (outer face)	54m	—	Fishing vessels.

Pilotage.—Pilotage is compulsory. Pilots board in position 47º54.4'N, 64º48.5'W. The vessel'sETA should be sent to Atlantic Pilot Authority 12 hours and 4 hours prior to arrival.

Anchorage.—Outer anchorage is available near the outer end of Shippegan Channel in position 47°53'N, 64°46'W.

Caution.—A causeway, with a center lift span, crosses the fairway close S of Shippegan Harbor and connects Shippegan Island to the mainland. A lift bridge in the causeway has a vertical clearance of 12m when raised and 2.7m when lowered; it has a horizontal clearance of 17.8m.

7.18 Pokesudi Island (47°48'N., 64°47'W.), separated from Shippegan Island by Shippegan Sound, is about 3 miles long and is joined to the mainland to the W by a drying flat. Little Pokesudie Island lies on this flat close S of the larger island.

Pokesudie Shoal, with general depths of 1.8 to 4.3m, extends about 2.5 miles N from the NE point of Pokesudie Island.

Saint-Simon Inlet (47°46'N., 64°46'W.), entered between the S end of Pokesudi Island and Pointe Brule to the S, provides sheltered anchorage, in depths of 6.1 to 9.1m.

The public jetty at Saint-Simon has a depth of 1.2m alongside its head.

The mainland coast, W of Pokesudi Island, extends irregularly WSW for about 10 miles to the head of Caraquet Bay, about 4.5 miles long and almost 2 miles wide, into which two small rivers discharge. The NW shore of this bay is about 4 miles long and terminates in Maisonnette Point. A narrow strip of land, about 1 mile long and bordered by drying sand banks, extends SE from this point. A drying sand bank extends about 2 miles farther SE and E to within 0.5 mile of the shore at the town of Caraquet.

Caraquet Island (47°49'N., 64°53'W.), low, narrow, and wooded, lies about 1 mile offshore on an extensive rocky bank stretching from the entrance to Shippegan Channel to Maisonnette Point. The NE part of this area is called Caraquet Shoal and is separated from Pokesudi Shoal by Caraquet Channel, a narrow buoyed passage leading SW from its intersection with Shippegan Channel.

A narrow buoyed channel indicated by lighted range beacons passes close W of Caraquet Island.

Fisherman Ledge (47°52'N., 64°53'W.), with a least depth of 3.7m and rocky, lies about 2 miles N of Caraquet Island. Fisherman Channel, which lies S of this ledge, is not recommended for large vessels. The channel has charted depths of

7.6 to 12.5m, suitable only for small vessels.

Scollop Patch, lying almost 1.5 miles N of the E end of Caraquet Island, has a least depth of 5.2m.

Maisonnette Ledge (47°50'N., 64°56'W.), with depths of less than 1.8m, lies about midway between Caraquet Island and Maisonnette Point.

7.19 Caraquet Harbor (47°48'N., 64°55'W.) (World Port Index No. 5600), with the town of Caraquet at its head, is about 5 miles long and protected to the N by Caraquet Island and the drying shoals extending SE from Maisonnette Point. The villages of Lower Caraquet, Upper Caraquet, and Maisonnette also lie within the limits of the harbor. The main imports and exports are pulpwood and frozen fish.

Ice.—The harbor is usually open to navigation from May 15 to December 15.

Tides—Currents.—The spring range is 1.4m, while the mean range is 1.2m.

The velocity of the current in the outer channel is about 1.5 knots and 2 knots in the inner channel. The currents set fairly through these channels.

Depths—Limitations.—Caraquet Channel, a narrow buoyed passage, has a least depth of 5.3m until abeam of the E end of Caraquet Island. Between the island and the mainland the channel depth is 4.3m. Farther W, the channel widens to a width of about 1 mile with a least depth of 7.3m.

At **Stoke Point** (47°48'N., 64°52'W.), there is a public breakwater wharf extending 373m from the shore. The wharf at the outer end of the breakwater is L-shaped, with an outer face 35m in length. There are depths of 3.3 to 4.3m alongside the inner faces.

Close W is another public wharf, 251m long with an L-end 46m long. There are depths of 3.9m along the outer face and 3.5m along the inner face.

The public wharf at Middle Caraquet, together with a breakwater extending from its outer L-end and a breakwater to the E, form a basin. The depth in the entrance is 2.2m, but there are shallower depths inside the basin of 0.9m.

At Caraquet, Young Wharf, with East Arm and West Arm, forms two basins. Young Wharf handles fishing and frozen products. The East Arm has a length of 52m and the Outer East Arm has a length of 55m, both have a depth of 7m alongside. The West Arm has a length of 180m and a depth of 7m alongside.

At Maisonnette Point, 3 miles NW of Young Wharf, the L-shaped pier is 247m long with a 21m face. The depth alongside the face is 1.2m.

Low sand hills lie along the shore up to 3 miles W of Maisonnette Point and then rise to sandstone cliffs about 30.5m high and continue for 25 miles SW to Bathurst Harbor. Shoal water extends up to 0.5 mile off this coast.

A breakwater pier, 217m long with a depth of 1.2m alongside, extends from the shore at Anse-Bleue, about 4 miles W of Maisonnette Point. The breakwater is approached on an alignment of lights bearing 195°.

A small breakwater harbor stands at Stonehaven, on the W side of Grindstone Point, about 8.5 miles SW of Grande-Anse. A pier, with a depth of 3m alongside the head, stands on the W side of the breakwater.

Pilotage.—Pilotage is available, but not compulsory. Vessels bound for Caraquet should send their ETA to the Atlantic Pilotage Authority 12 and 4 hours before arrival to the pilot station. The time used must be UTC. The pilot boarding station is in position 47°54'24"N, 64°48'30"W.

Aspect.—A prominent church stands on the shore of Caraquet Harbor, about 1.8 miles SW of Blanchard Point, the NW extremity of Pokesudi Island.

A green church spire in the fishing village of Grande-Anse, about 8 miles W of Paisonnette Point, is very conspicuous.

Nepisiguit Bay (47°45'N., 65°33'W.) is about 14.5 miles wide at its entrance between Grindstone Point and Rochette Point, and recedes about 7 miles S to the mouth of the Nepisiguit River.

Contact Information.—See the table titled **Caraquet Harbor—Contact Information**.

Caraquet Harbor—Contact Information	
Pilots	
Call sign	Pilots Caraquet
VHF	VHF channel 16
Port	
VHF	VHF channel 11
Telephone	506-727-6145
Facsimile	506-727-2020
E-mail	cpc@nb.aibn.com
Web site	http://www.portcaraquet.ca

Anchorage.—Good anchorage can be taken in most of the channel. The best anchorage area lies SE of Caraquet Island, in depths of 6.4 to 8.8m, mud. A good anchorage is available near the outer end of Shippegan Channel, 47°53'N 64°46'W.

Caraquet Harbor—Berth Information						
Berth	Berth		Maximum Vessel			Remarks
	Length	Depth	LOA	Draft	Size	
Young's Wharf (Inner Breakwater)						
West Arm	180m	7.0m	125m	6.5m	7,500 dwt	Fishing vessels, frozen products, and breakbulk.
East Arm	52m	7.0m	125m	6.5m	7,500 dwt	
Outer East Arm	55m	7.0m	125m	6.5m	7,500 dwt	

Caution.—A wreck, not dangerous to surface navigation, lies on the transit of the leading lights, about 1.2 miles from the front light.

7.20 Bathurst Harbour (47°38'N., 65°38'W.), a sheltered harbor, stands on the Nepisiguit River about 3 miles from its mouth. The port includes the facilities of Bathurst, West Bathurst, and East Bathurst.

Tides—Currents.—The spring range is 1.4m, while the mean range is 1.2m.

The current sets through the outer channel at a rate of 1.5 knots and 2 knots through the inner channel. Both currents set fairly through the channels.

Depths—Limitations.—The harbor is entered over a bar to Carron Point through a narrow dredged channel which extends about 1.5 miles NE of the river mouth. Because of continuous silting depths, both outside and within, the river is subject to change. The buoyed channel outside the river is 180m wide and 42m wide within the river. The buoys are moved to meet changing conditions. Both channels are dredged annually. Vessels should not attempt to enter without local knowledge. Mariners should consult with the local authorities for the latest information.

Bathurst Harbour—Berth Information		
Berth	**Length**	**Depth**
Transport Canada Wharf	123m	3.2m
Stone Consolidated Company Wharf	152m	3.8m

In 1993, depths of 3.7m at LW were reported in the entrance channel, with an additional 1.2m at HW neaps and 2.1m at HW springs. The largest vessel accommodated had a draft of 5m.

The berths alongside the Consolidated Bathurst Wharf and the Government Wharf are subject to rapid silting. Local information should be obtained before attempting to berth or approach these wharves. There are five commercial wharves for coastal vessels with a total length of 665.8m, depths ranging from 1.8m to 5.4m alongside at LW.

The port is open to navigation from about April 15 to December 15.

Pilotage.—Pilotage is available but is not compulsory. To avoid delay in obtaining a pilot, vessels bound for Bathurst should report their ETA to the Atlantic Pilotage Authority at least 12 and 4 hours prior to arrival at the pilot station.

The pilot boarding station is at a mutually-agreed position. The pilot boat monitors VHF channel 16.

The master that wants to depart or make a move and requires a pilot must report to the Atlantic Pilotage Authority 4 hours prior to such estimated time of departure. The time used should be local time; if UTC is used, it must be expressly stated.

Contact Information.—The harbormaster can be contacted by telephone (1-506-546-3361).

Anchorage.—Anchorage can be taken E of the entrance range, in a depth of 21.9m, about 5 miles NNE of the river mouth.

7.21 The shallow entrance to a lagoon lies about 3 miles NW of the entrance to Bathurst Harbour.

An illuminated cross, 44.5m high, stands on a church near the N end of the lagoon at Beresford and is very conspicuous.

Pointe Rochette (46°47'N., 65°42'W.), about 8.5 miles NNW of the entrance to Bathurst Harbour, is fronted by a breakwater with a small wharf at the L-end. A depth of 1.8 to 3.4m exists alongside this wharf. A conspicuous illuminated cross stands on a church at Petit-Rocher to the W.

A small boat harbor, formed by two breakwaters, is situated at Pointe Verte, about 5 miles NNW of Pointe Rochette. Depths in the basin are shallow.

7.22 Belledune Harbor (47°54'N., 65°50'W.) which lies between Belledune Point and a point about 1 mile to the W, is the site of fertilizer and smelting installations. The breakwater which fronts the harbor is angled midway along its length.

Winds—Weather.—The prevailing winds are from the W, although in September and October they may be from SW. When the wind is from the E, a swell may be experienced at the harbor entrance and the berths.

Ice.—The harbor is ice free in the winter and is open to navigation throughout the year. However, the prevailing E winds bring pack ice into Baie des Chaleurs, making the approach to Belledune difficult at times, with heavy and rafted ice. In winter months Jan-Mar, ice may be expected in the Gulf St. Lawrence and Baie des Chaleurs. Coast Guard ice breakers may be required to escort vessels to Belledune. In E winds, ice moves into the port but a change of wind may move the ice out of the port. The tug helps to clear ice from the port. Vessels may receive ice information through the Marine Communications and Vessel Traffic Centre, Sydney, (VCO). In winter there are scheduled Ice Advisories and ice maps may be received by fax-Forecasts may be received by scheduled broadcasts from Marine Communications and Vessel Traffic Stations, via the local weather channel, VHF channel 8.

Belledune—Berth Information						
Berth	**Length**	**Depth**	**Maximum Vessel**			**Remarks**
			LOA	**Draft**	**Beam**	
Glencore Canada-Brunswick Smelter						
Terminal 1	155m	11.0m	225.5m	10.3m	30.0m	Dry bulk, liquid bulk, and mineral concentrates.
NB Power Generating Station						
Terminal 2	307m	14.3m	245m	12.7m	32.2m	Clean products, coal, petcoke, and multipurpose.

Belledune—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Eastern Canada Stevedoring INC (ECS)						
Terminal 3	455m	11.3m	226.1m	9.3m	32.2m	General cargo.
Rayburn Doucett Terminal						
Terminal 4 Ro-Ro Berth	184m	8.9m	140m	—	21.0m	Salt, sand, ro/ro, and breakbulk.

Depths—Limitations.—The approach channel has a width of about 140m and a reported depth of 11.8m. It is recommended that fully-loaded bulk carriers berth at HW and have a maximum arrival draft of 12.6m.

Berth information for Belledune Harbor is given in the table titled **Belledune—Berth Information**.

Aspect.—A light is exhibited at the outer end of the breakwater.

Pilotage.—Pilotage is compulsory. The pilot boards at position 47°56'N, 65°48'W. Vessels should send their ETA 12 and 4 hours prior to arrival. The port has restrictions for docking in certain wind conditions and may require a vessel to use the services of a tug, which is available.

Regulations—A vessel may not enter the harbor without first notifying the harbormaster on VHF channel 16 or 65A. The port has restrictions on docking in certain wind conditions and may require vessels to use the services of a tug. The recommended UKC is 10% of the entrance channel depth. The max speed for entering and leaving port is 2 knots.

Contact Information.—See the table titled **Belledune—Contact Information**.

Belledune—Contact Information	
Port Authority	
VHF	VHF channels 11, 16, and 65A
Telephone	506-522-1200
Facsimile	506-522-0803
E-mail	info@portofbelledune.ca
Web site	http://www.portofbelledune.ca

Anchorage.—Two designated anchorages lie 1.5 miles and 3 miles NE of the breakwater, in 27 to 33m, good holding ground, hard mud, but with little shelter.

7.23 The 10m curve between Belledune Point and Heron Island, about 12.5 miles WNW, gradually increases in width, lying 3 miles offshore in the vicinity of the island and about 2 miles offshore from there to the head of the bay.

Heron Island (48°00'N., 66°08'W.), wooded and moderately high, is bordered by red cliffs about 12.1m high along its NE side.

Heron Channel, which lies between the island and the coast, is narrow, intricate, and suitable only for small craft. Heron Rock, with a depth of 1.2m, lies in the middle of the E entrance. Two piers, on the S side of this channel, have shallow depths alongside.

Good anchorage can be taken, in a depth of 7.6m, mud, about 3 miles W of the W end of Heron Island and 1.5 miles N of the mainland.

A power station with a conspicuous chimney, 91.4m high stands N of Eel Bay, 1 mile WSW of Inch Arran Point. A breakwater projects 0.25 mile E from the shore abreast the chimney.

Bonamy Rocks, which extend almost 0.5 mile E of the point S of Inch Arran Point, the W entrance point to the Restigouche River, are steep, high, and broken. Shoal water, with depths of less than 9.1m, extends about 0.2 mile E from these rocks and continues NW to Dalhousie Island.

Miguasha Point (48°04'N., 66°18'W.), the E entrance point to the Restigouche River, is fronted by Miguasha Spit, which extends about 1 mile to the SW. Depths over this spit range from 1.8 to 3.7m.

7.24 Dalhousie Harbor (48°05'N., 66°22'W.) (World Port Index No. 5560) stands on the S bank of the Restigouche River, about 1 mile within the entrance and is a port of entry.

The harbor is usually open year round. When required, ice breakers are used to keep the harbor ice-free.

Tides—Currents.—The spring tidal range is about 2.1m, while the mean tidal range is about 1.7m.

The velocity of currents in the river and harbor entrance does not exceed 2 knots.

The channel of the Restigouche River, between Dalhousie Harbor and Campbellton Harbor, about 14 miles upstream, is wide and deep for the first 5 miles above the river mouth, but then narrows and shoals gradually. Buoys mark the channel; above **Pointe au Chene** (48°02'N., 66°37'W.), the channel is marked by range lights. There was a channel depth of 4m. Above Pointe a la Garde, the channel narrows to a width of 0.1 mile with a least depth of 6.1m. The channel between Pointe au Chene and Campbellton is no longer dredged. A least depth of 4m was found in this section of the channel.

The various channel reaches are marked by navigational aids. Vessels are cautioned that the channel buoys may be dragged off station by passing log rafts.

Depths—Limitations.—Depths in the entrance to the river range from 14.0 to 27.4m, shoaling gradually to depths of 9.4 to 14.9m in the fairway between Dalhousie Island and Middle Ground to the N.

Aspect.—When approaching the river entrance from the E, Dalhousie Hill, about 2.5 miles WSW, and Mount Escuminac, about 9.5 miles WNW of Inch Arran Point, are conspicuous and useful marks. A conspicuous high chimney stands close W

Dalhousie Harbor

of Inch Arran Point Rear Range Light; a similar chimney stands about 0.8 mile SW of the same light.

Pilotage.—Pilotage is compulsory. Pilots should be ordered through the Atlantic Pilotage Authority. The ETA should be given 12 hours and 4 hours prior to arrival.

The pilot boarding station is situated in position 48°03'12"N, 66°15'00"W. Dalhousie Pilots monitor VHF channel 16.

The master of a vessel that is to depart or make a move within the compulsory pilotage area of Restigouche must give at least 4 hours notice prior to such ETD. The time used should be local time. If UTC is used, it must be expressly stated.

Contact Information.—See the table titled **Dalhousie—Contact Information**.

Anchorage.—The best anchorage is anywhere E of N side of Middle Ground in depths from 18.3 to 27.5m. The most convenient anchorage for Dalhousie is off Pointe Fleurant (48°06'N 66°24'W), in depths of 11.0 to 13.0m.

Dalhousie—Contact Information	
Telephone	1-506-684-3346
Facsimile	1-506-684-3388
E-mail	info@portofdalhousie.ca
Web site	https://www.portofdalhousie.ca

Caution.—The approaches to the wharves and all dredged areas are subject to silting. Lesser depths than charted may be encountered in these areas. An earlier survey indicated that Middle Ground had extended S into the main channel.

Mariners are cautioned that there may be less water than shown on the charts.

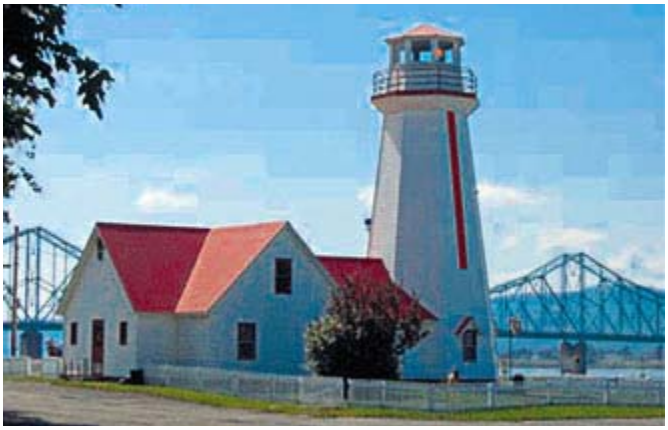
Dalhousie—Berth Information					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Beam	
East Marine Terminal					
East Wharf	190m	9.1m	—	—	Forest products and various bulk products. Berthing length of 340m (including dolphins).
West Marine Terminal					
West Wharf	205m	10.3m	243.8m	32m	Dirty products (DPP), aggregates, wood chips, and multi-purpose. Berthing length of 355m (including dolphins).

7.25 Campbellton Harbor (48°01'N., 66°40'W.), a lumber-exporting center, stands on the S bank of the Restigouche River near the head of navigation. Campbellton is a port of entry.

Range lights are located at Arran Point. The front light is shown from a white tower with a red stripe; the rear light is shown from a white daymark with a red stripe.

The port is open to navigation from May to December.

The spring rise of the tide is 2.6m, while the mean rise is about 2m.



Campbellton Harbor Light

A bridge, with a vertical clearance of 44m, spans the river from Campbellton to the opposite bank. Only small vessels can proceed upriver above this bridge.

The Railway Wharf is 442m long, with an alongside depth of 3.0m.

Pilotage is compulsory. See Dalhousie Harbor for details on pilotage.

Chaleur Bay—North Shore—Maquereau Point to the Restigouche River

7.26 The N shore of Chaleur Bay, like the S shore, is very irregular. From Maquereau Point, the coast extends about 25 miles SW then about 40 miles W to Maguasha Point at the entrance to the Restigouche River. Several small commercial ports are situated in some of the bays which indent this coast.

Caution.—Depths throughout most of Chaleur Bay are deep and free of detached shoals except near its shores. It gradually becomes shallow towards the head of the bay. Along the N side of the bay there are no known off-lying dangers seaward of the 10m curve, which nowhere lies more than 2 miles offshore. The dangers within this curve are described with the related coastal features.

Maquereau Point (48°12'N., 64°47'W.), the NW entrance point to Chaleur Bay, is bold, dark colored, and has craggy rocks rising to an elevation of about 61m.

Pointe Reddish (48°11'N., 64°52'W.), about 3.8 miles W of Maquereau Point, is composed of red limestone and from a distance appears as an island. Close NE of the point, the mouth of the Ruisseau Chapados is protected by two jetties, with shallow depths in the channel.

Port Daniel (48°10'N., 64°58'W.), entered between Pointe Pillar and Pointe Ouest, lies about 3.8 miles W of Reddish Point. Good anchorage is provided, in a depth of about 10.1m, mud, sheltered from all except winds between the S and E. The port facilities at the head of the bay are in ruins. Caution is necessary as the bay is subject to continual silting.

Colline Daniel, 122m high and the highest land along this part of the coast, stands about 1.5 miles SW of Pointe Ouest.

Shigawake Pier, 82m long with a depth of 1.2m at its outer end, extends from the shore about 6 miles SW of Pointe Ouest.

McLnnis Cement Plant has a jetty with a length of 48m (328m including dolphins).

St. Godefroi, a small village with a conspicuous church, stands 2 miles SW of Shigawake Pier. A small pier with shallow depths extends from the shore abreast of the village. A fish haven is situated about 1.5 miles E of the Pt. Trachy pier. Two other fish havens are positioned about 1.3 miles S and 1.2 SSW of the this fish haven.

The Nouvelle River discharges into the bay about 1 mile SW of St. Godefroi. A training pier, which nearly dries, stands at the mouth of the river.

7.27 Pointe de Paspebiac (48°01'N., 65°15'W.), about 5.5 miles SW of the Nouvelle River, stands at the outer end of a triangular-shaped sandy beach, which encloses a partially drying lagoon. A sand spit, with depths of 1 to 10m, extends about 0.8 mile S from the point. The village of Paspebiac is situated N of the lagoon. Aquaculture sites are situated about 1.2 miles SW of the harbor.

Two submarine water intake pipelines are situated close E of the public wharf.

A light is shown close N of Pointe de Paspebiac.

Two conspicuous radio towers, 125m high, marked by obstruction lights, stand in the lagoon N of Paspebiac Point.

A high microwave tower, 107m high, and a church with a tall spire stand in New Carlisle, about 3.5 miles W of Pointe Paspebiac.

Paspebiac—Berth Information		
Berth	**Length**	**Depth**
Section 1	150m	6.0m
Commercial Wharf (Inner side of public jetty)	300m	2.7-5.5m
Wharf (NE side of basin)	200m	3.0-6.0m

Good anchorage can be taken, in a depth of 10.7m, clay, about 1 mile W of Pointe Paspebiac. The shelter is good, except from winds between the W and SE through S; SW winds send in a considerable sea, but the holding ground is very good.

7.28 Pointe Bonaventure (48°00'N., 65°27'W.), about 4.5 miles W of New Carlisle, consists of low, red sandstone cliffs.

Rocky shoals, with depths of 5.5m and less, extend 1 mile offshore from Bonaventure Point and border the coast up to 5 miles to the W.

The Bonaventure River, with a village on its N side within the entrance, flows into the bay about 2 miles NW of Bonaventure Point. Two wharves stand in the lagoon at the mouth of the river, but the depths alongside and in the channel leading to

them are subject to rapid change. Range lights are shown from shore at the entrance to Havre de Beaubassin.

Caution.—The piers and the breakwaters along this section of coast are subject to silting and ice damage, and should be approached with caution. Many of the small piers are in ruins. The depths and condition of the piers may vary from season to season.

7.29 The coast between the Bonaventure River and Black Cape, about 14 miles WNW, has several small villages standing along the shore. All of the dangers are contained within about the 10m curve, which lies between 0.25 and 0.75 mile offshore.

At Black Cape (Howatson Point), 1.3 miles NW of Les Caps Noirs, a jetty extends 305m S from the coast. The jetty is reported to be a good radar target, but is difficult to identify visually.

Depths—Limitations.—A Wharf abuts the W side of the L-shaped old wharf and extends 305m to seaward from the shore. The outer 120m is capable of berthing vessels on the W and E sides. On the W side depths of 5m exist, 120m from the wharf head, increasing to 9.2m at the head. Depths on the E side may be less and 4.4m has been reported.

Anchorage.—Anchorage is available off the jetty, clear of a submarine pipeline that extends about 0.5 mile SW from the shore at a point about 137m W of the jetty.

Caution.—The outer part of the E spur of the old wharf has been demolished and constitutes a danger to navigation. Reports indicate that the entire old wharf is in ruins.

It was reported that depths in the vicinity of the old wharf are less than indicated on the chart.

7.30 **Baie de Cascapedia** (48°09'N., 65°55'W.), entered between Les Caps Noir and Tracadigache Point, about 12.5 miles WSW, recedes N to the mouth of the Cascapedia River. The mouth of this river is fouled by shoals and drying flats which extend up to 2 miles offshore. The piers which extend from the shores of this bay are in ruins or the approaches to them are completely silted up.

Pointe Tracadigache, a triangular-shaped sand bar enclosing a drying lagoon, is fronted by a sand spit which extends about 0.5 mile S from it.

Baie Tracadigache (48°05'N., 66°11'W.), entered between Tracadigache Point and Miguasha Point, about 7 miles to the W, is fringed by shoals which extend about 0.8 mile off the N shore and up to 1.5 miles off the NW shore; the E side is fairly steep-to.

At the village of **Carleton** (48°06'N., 66°08'W.), on the E side of Baie Tracadigache, a jetty and a breakwater SE of it form a small basin.

Depths—Limitations.—Carleton has one berth. Berth No. 1. The berth length is 134m and has an alongside depth of 7.2m.

Within the basin there are a number of interconnecting jetties for use by small craft and the marina is situated in the NE part of the basin.

Caution.—Marine farms, some of which may lie up to 3 miles offshore, are situated in Baie de Cascapedia and Baie Tracadigache.

Maquereau Point to Cap de Gaspe

7.31 The W shore of the Gulf of St. Lawrence, between Pointe Maquereau and Pointe St. Pierre, about 35 miles NE, is very irregular and indented by several bights. Bonaventure Island is the largest of several small islands lying close offshore. One commercial port and a few fishing harbors are situated in the bays indenting the coast.

Baie de Gaspe, entered between Pointe St. Pierre and Cap de Gaspe, about 7.5 miles to the N, recedes about 16 miles to the NW. Two arms continue to the W and NW from the head of the bay, which contains the commercially important Gaspe Harbor.

Caution.—This coast is mostly steep-to with all of the dangers, except Banc des Americains, lying within about the 60m curve which nowhere lies more than 4 miles offshore, except for a few detached patches with depths of less than 54.9m.

7.32 **Leander Shoal** (48°24'N., 64°18'W.), with a least depth of 4.3m, lies on the outer part of a shoal which extends about 2 miles SE from Cap d'Espoir. All vessels, except small craft, should pass S and E of this danger.

Banc des Americains (48°37'N., 63°56'W.), a narrow shoal with general depths of 73m, extends about 10 miles SE from a position about 4 miles SE of Cap de Gaspe. An 11.6m patch, the shallowest depth on this bank, lies about 13 miles SE of Cap de Gaspe.

A Marine Protected Area (MPA) extends from Île Bonaventure to near Cap Gaspé and then E for over 18 miles. The MPA includes Banc des Américains.

Tides—Currents.—The flood and ebb currents set regularly between Ile Bonaventure and the mainland at a rate of about 1 knot. The flood sets SW around Cap d'Espoir and into Chaleur Bay; the ebb sets in the opposite direction.

7.33 **Newport** (48°16'N., 64°45'W.), a small fishing village about 4 miles NE of Maquereau Point, is fronted by breakwaters with a shallow basin in between. There are depths of 0.8 to 1.8m in the river entrance. A rocky shoal lies about 137m S of the river entrance.

Newport Point (48°17'N., 64°43'W.) has a small shallow basin on its W side bordered by a breakwater and a pier. There is a depth of 2.7m within the basin.

The harbor is approached through a buoyed channel with a least depth of 4.8m on the transit of the range lights and 4.1m in the harbor entrance.

Depths—Limitations.—Berths at Newport Point are situated near the fish plant, at the end of the W breakwater, and on Fisherman's Jetty.

Newport—Berth Information		
Berth	**Length**	**Depth**
Fish plant, S wharf	64m	4.5m
Fish plant, E wharf	30m	4.7m
West breakwater, inner side	149m	5.0m
Fisherman's Jetty extending from N side of harbor	30m on outer end	2.3m

A small cove stands close W of Pointe du Grand Pabos, about 1.5 miles NNE of Newport Point. Good shelter is provided for small craft.

7.34 Chandler (48°21'N., 64°40'W.), a small exposed port, lies about 2.5 miles NE of Pointe du Grand Pabos. Pulp and paper products are the main industry. A seasonal ferry links Montréal, Québec, Matane, Chandler, and Cap-aux-Meules. At the inner end of the wharf, on the NW side, there is mobile ramp for the ferry.

Aspect.—The chimney and water tower at the paper plant, on the W side of Anse a L'Ilot, and the church spire and cupola in the town are conspicuous from the offing. A light, 5m in height, is exhibited from L'Anse-a-L'llot.

Depths—Limitations.—The wharf is closed from December to April, except in case of need.The approach to the wharf in the town is restricted by Île Dupuis and the shoals which surround it. The minimum depth in the channel is 8m. A curved stone breakwater extends about 458m from the shore in position 48°20.8'N, 64°39.4'W. A public jetty, 150m long, extends SW from the end of the breakwater

Chandler—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Chandler Terminal			
No. 01	150m	9m	Ro/Pax and breakbulk.

Pilotage.—Pilotage is available but not compulsory. A local pilot can be obtained, but prior arrangements have to be made through the Atlantic Pilotage Authority. Notification of ETA should be made 12 and 4 hours prior to arrival.

The pilot boarding station is situated at position 48°19'N, 64°38'W. The pilot vessel monitors VHF channels 11 and 16.

Contact Information.—See the table titled **Chandler—Contact Information**.

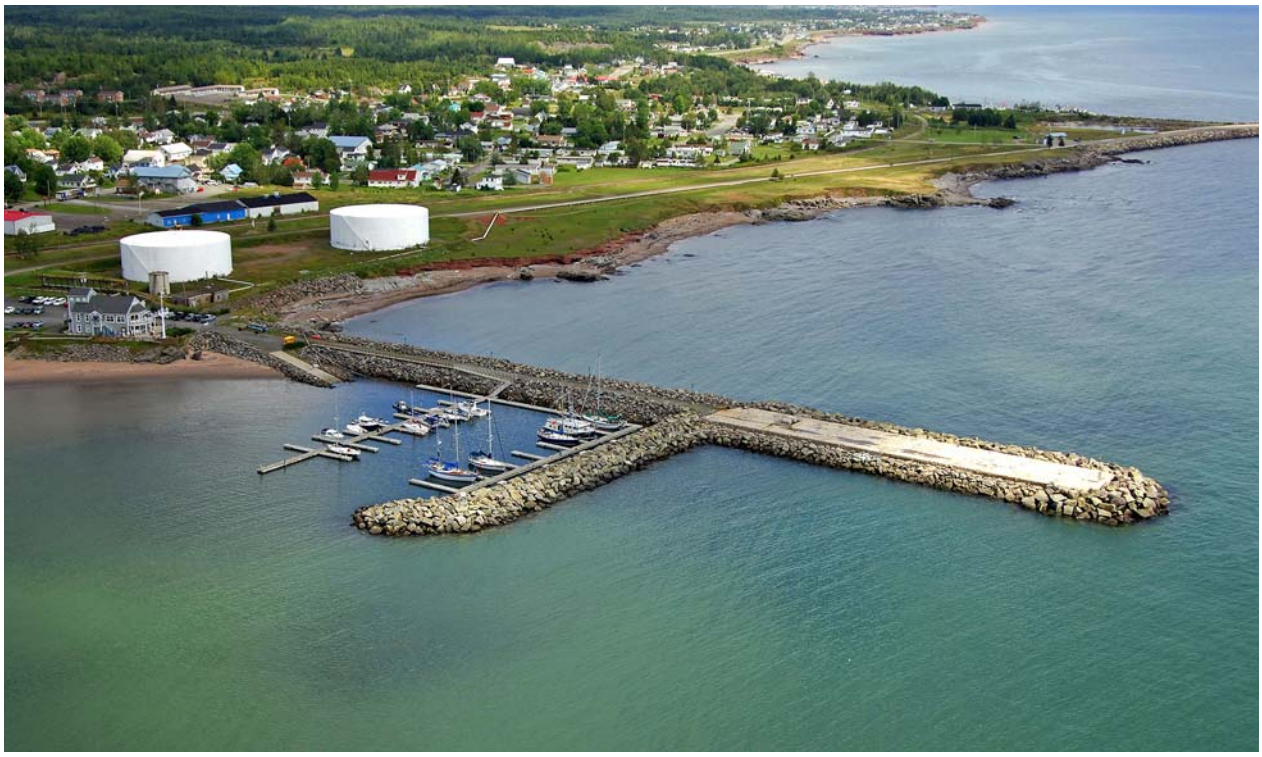
Chandler—Contact Information	
Harbormaster	
Telephone	418-689-6949
Facsimile	418-689-4188

Caution.—There are a number of uncharted outfall pipelines in the harbor extending up to 0.1 miles from the W shore. The outfall at L'Anse-a'L'llot is covered with rocks. The outer end has a depth of 2.3m over it. The submerged wrecks like close SE of Île Dupuis.

7.35 Grande Rivière (48°24'N., 64°30'W.), a small fishing port, stands about 7.5 miles ENE of Chandler at the mouth of the river of the same name. A dredged channel leads into the port at the mouth of the river of the same name. Because of silting, lesser depths than charted may be encountered.

An L-shaped wharf, 294m long and 75m wide, with depths of 3 to 3.5m alongside, is located here.

A conspicuous illuminated cross stands about 0.8 mile NNW of the pier at Pointe Verte. A church near the river mouth is also conspicuous.



Chandler

A pipeline extending 120m from the shore, terminating in an obstruction, runs close SE of the S breakwater.

Petite Riviere Est, which has a small boat basin, is formed by a breakwater and an L-shaped breakwater-wharf N of it. The entrance is 30m wide and the depths alongside are 2.5 to 3.4m.

Cap d'Espoir (48°25'N., 64°19'W.) consists of red cliffs about 15m high, with the land inland rising to high ridges. A narrow shoal bank extends about 2 miles SE from the cape. Leander Shoal, which lies on this bank, has been previously described in paragraph 7.32.

L'Anse-a-Beaufils (48°28'N., 64°19'W.), a small fishing village, stands in the NW part of the bay of the same name, about 3 miles N of Cap d'Espoir. The harbor comprises a basin and public wharf protected by a curved breakwater. The channel leading into the harbor is dredged to 3m. The public wharf has dredged depths of 2.2m alongside its outer 150m. Pontoons and a footbridge have been established close off the SW shore. Due to continuous silting, mariners should check with appropriate local authorities before entering.

Cap Blanc (48°30'N., 64°13'W.), separating L'Anse-a-Beaufils from Perce Bay to the N, is steep-to.

Caution.—Due to silting, the depths in the fishing harbors cannot be relied upon. A shoal area was reported in the entrance to the boat harbor in the mouth of the river.

7.36 Île Bonaventure (48°30'N., 64°10'W.) lies about 1.8 miles E of Cap Blanc and is separated from the mainland by a navigable clear channel having depths of 18.3 to 36.6m. The island is about 137m high, with steep red cliffs 76m high in places on its NE side. The island is a government bird sanctuary.

Anchorage can be taken in the passage between the island and the coast, in a depth of 27m; however, a heavy swell rolls in during bad weather.

Perce Bay, entered between Cap Blanc and Perce Rock to the N, has the town of Perce along its NW shore. A pier, 172m long with depths of 4.9 to 5.8m alongside, extends from the shore abreast of the town. Perce Reef extends about 0.4 mile offshore, about 0.2 mile S of this pier.

Perce Rock, 88m high with a remarkable large hole through it, is the E entrance point to Perce Bay.

Mont Sainte-Anne, with a conspicuous monument on its slope, rises to an elevation of 375m about 1 mile W of the town of Perce. Three conspicuous radio towers, marked by obstruction lights, stand on this mountain.

Caution.—Artificial reefs are located, as follows:

a. 0.3 mile N of Cap Blanc with a least depth of 6.3m.
b. 0.4 mile SW of Cap Blanc with a least depth of 5.6m.

Mariners are cautioned against anchoring near the reefs.

7.37 La Mal Baie (48°35'N., 64°13'W.), entered between Perce Rock and Pointe Verte, about 5.8 miles N, is deep and clear of dangers. The head of the bay is bordered by a wide sand and gravel beach enclosing a shallow lagoon. The S shore of the bay between Perce Rock and Cannes de Roches is bordered by a perpendicular cliff over 198m high. The N side of the bay is bordered by low cliffs and patches of beach.

Barachois-de-Malbaie, the principal settlement, stands in the NW part of the bay. A pier, with a depth of 2.7m at its outer end, extends from the shore abreast of the settlement. The lagoon empties into the bay N of this pier.

A pier, 90m long, extends to a depth of 5.8m alongside the outer end of the N side, shoaling to 1.9m at its root, from the village of Mal Baie, on the N shore of the bay.

Anchorage is not recommend off the village of Mal Baie because of frequent SE gales, which are often preceded by heavy fogs and high seas.

Pointe St.-Pierre (48°38'N., 64°10'W.), the S entrance point to Baie de Gaspe, is low and covered by white houses.

Ile Plate, a low island, lies about 0.4 mile NE of Pointe St.-Pierre.

Baie de Gaspe

7.38 Baie de Gaspé (48°44'N., 64°14'W.), entered between Pointe St.-Pierre and Cap de Gaspe, about 7.5 miles to the N, recedes about 17 miles to the NW to the entrance to Gaspe Harbor. West of this harbor the bay divides and leads into Northwest and Southwest Arms. The general width between the NE and SW shores is about 4.5 miles up to 7.5 miles within the entrance, but from there to the entrance to Gaspe Harbor the bay narrows gradually to a width of 0.75 mile in the entrance to the harbor. The roadstead off Douglastown, along the SW shore of the bay about 12 miles NW of Pointe St. Pierre, provides excellent anchorage. A marine farm lies N of Douglastown, about 0.75 mile E of Cap Haldimand.

Tides—Currents.—The current from the St. Lawrence River sets strongly past Cap de Gaspe and toward Ile Plate, particularly during a falling tide, and often attains a velocity of 2 knots. It must be guarded against, especially by vessels bound for Baie de Gaspe when a N wind is blowing. This current, when meeting the prevailing swell from the S and SE, raises a high, short breaking sea along the coast and across the entrance to Baie de Gaspe.

Depths—Limitations.—The depths in the bay range from 109.7m in the entrance shoaling gradually to a depth of 20.1m in the entrance leading into Gaspe Harbor. All of the known dangers are contained within the 10m curve, which nowhere lies more than 0.75 mile offshore and in many cases much less. The NE side of the bay is steep-to in places within a short distance of the shore.

Banc des Americains, the only off-lying danger in the approach to Gaspe Bay, has been previously described in paragraph 7.32.

A 13.1m patch lies 1 mile SE, and a detached shoal, with a least depth of 23.8m, lies 4.5 miles SE of Cap de Gaspe. Tide rips occur at times.

Traffic Separation Scheme.—The inbound lane of the traffic separation scheme between Cabot Strait and the Saint Lawrence River lies 33 miles NE of **Cap de Gaspé** (48°45'N., 64°10'W.).

7.39 The SW shore of Baie de Gaspe, between Pointe St.-Pierre and Douglastown, about 12 miles NW, is backed by steep cliffs rising to heights of about 46m in places.

St. Georges-de-Malbai (48°39'N., 64°13'W.), a small village about 2.8 miles NW of Pointe St.-Pierre, is fronted by some piers with shallow depths alongside. Cap Rouge, a small projecting headland marked by a cross, stands about 0.5 mile farther NNW.

Anse-a-Brillant, a small boat basin marked by some jetties in

ruins, stands about 2.5 miles NW of Preval.

Douglastown (48°46'N., 64°22'W.), a small lumber and pulpwood-exporting town, stands on rising ground on the S side of the mouth of the Riviere St.-Jean about 4.5 miles NW of Anse-a-Brillant. A small pier extends from the shore.

Anchorage can be taken anywhere in the extensive roadstead off Douglastown, in depths of 11 to 18m, sand and clay. Southeast winds send in a heavy swell, but good shelter is provided from other winds. A marine farm is located 0.8 mile N of the recommended anchorage area.

A depth of 3m lies in the channel leading into the Riviere St.-Jean, but only small boats can be accommodated.

7.40 Cap de Gaspé (48°45'N., 64°10'W.), the N entrance point to Baie de Gaspe, is a headland forming the SE extremity of Presqu'Ile de Forillon. Cliffs rise to a height of 211m on the NE side of the peninsula, but are much lower on the SW side.

Rocher Flowerpot, 1.5m high, stands close off the SE end of the cape.

Cap de Gaspe has been reported to be a good radar target up to 21 miles and has been reported to be identifiable with charted features by radar up to 18 miles.

The NE shore of Baie de Gaspe is steep-to and free from detached dangers as far as Seal Rock, about 7 miles NW of Cap de Gaspe.

Anse-aux-Sauvages (48°46'N., 64°12'W.), about 1.8 miles NW of Cap de Gaspe, there is a pier 90m long with a depth of 7.6m alongside the outer end and 4.9m alongside the outer 30.5m.

Caution.—Due to silting, the depths in the fishing harbors cannot be relied upon. A shoal area was reported in the entrance to the boat harbor in the mouth of the river.

A small enclosed basin, with a depth of 1.8m, stands at Grande-Greve, about 2 miles NW of Anse-aux-Sauvages. A small pier extends from the shore. Anchorage can be taken abreast of Grande-Greve, about 0.3 mile offshore, but farther seaward the depths increase rapidly.

Gros Cap aux Os, a 21.3m headland, stands about 4 miles NW of Grand-Greve. A village stands in the small bay E of the cape. A wreck, visible at LW, lies about 0.2 mile SE of the cape.

Rocher Seal (48°49'N., 64°18'W.), with a least depth of 0.9m, lies on a reef about 0.8 mile SE of Gros Cap aux Os.

A small pier extends from the shore at Cap aux Os, about 1 mile WNW of Gros Cap aux Os.

7.41 Gaspe Harbor (48°50'N., 64°26'W.) (World Port Index No. 5510) lies inside the natural breakwater formed by Sandy Beach Bar and Sandy Beach Spit; due to silting, Sandy Beach Bar may extend outside its charted limits. The harbor is about 4.5 miles long with a general width of 1 mile. Depths range from 7.3 to 20.1m, mud, with good shelter. Northwest Arm and Southwest Arm are extensions of the harbor, but both are shallow in their inner reaches.

Ice.—The harbor usually freezes over from about December 15 to April. Icebreakers are available.

Winds—Weather.—In Gaspe Harbor entrance and Gaspe Basin the flood and ebb are regular but weak. The currents within the bay are variable, almost imperceptible and weak, even near the shore.

Tides—Currents.—The flood and ebb currents set regularly between Ile Bonaventure and the mainland at a rate of about 1 knot. The flood sets SW around Cap d'Espoir and into Chaleur Bay; the ebb sets in the opposite direction.

The entrance between the shoals extending from Sandy Beach Spit and the shoals to the E of Pointe de Penouille has a depth of about 20.1m in the middle of the fairway.

Gaspe Harbor extends about 2.5 miles W from Sandy Beach Bar to Jacques Cartier Point, which separates Southwest Arm from Northwest Arm.

Depths—Limitations.—Paddy Shoal, about 0.3 mile SW of Jacques Cartier Point, has depths of less than 5.5m and the greater part of it dries. It extends about 0.2 mile from the shore into Southwest Arm.

Pointe de Lourdes, about 0.8 mile SE of Jacques Cartier Point, is the SE entrance point of Southwest Arm. Lourdes Spit, with depths of less than 5.5m, extends about 0.5 mile NW from Pointe de Lourdes.For berthing information, see the table titled **Gaspe—Berthing Information**

Gaspe Basin, the deep-water part of Southwest Arm, can accommodate many vessels. A new highway bridge, marked by lights, crosses the narrows at the entrance to the arm and joins the villages of Gaspe and Gaspe Harbor. The vertical clearance under the center of the bridge is 6.4m. The old bascule bridge has been destroyed. Two abandoned submarine cables cross the narrows just W of the bridge.

Aspect.—Numerous oil tanks stand in the vicinity of Delaire on the S side of the outer harbor. A conspicuous high radio tower stands 0.5 mile W of Delaire.

A marina, protected by breakwaters, is situated on the S shore close E of the bridge.

A radar transponder beacon is situated and transmits from Pointe de Penouille.

Pilotage.—Pilotage is not compulsory, but can be arranged with prior notice and is recommended. No licensed pilots are available, but fishermen with local knowledge can be obtained provided prior arrangements have been made with marine radio station VCG at Fox River Gaspe by radiotelephone. A pilot may be obtained off Rocher Flowerpot or at Grande Grive.

Gaspe—Berthing Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Gaspe Marine Terminal						
No. 1	230m	10m	199.6m	9.8m	28.5m	Clean products and general cargo.
No. 2	225m	8m	145m	—	—	Clean products and general cargo.

Contact Information.—See the table titled **Gaspe—Contact Information**.

Gaspe—Contact Information	
Port Authority	
Telephone	1-418-368-6679
Facsimile	1-418-368-1937
E-mail	portgaspe@globetrotter.net

Anchorage.—The main harbor and Basin du Nord-Ouest provide well sheltered anchorage in 7 to 20m, mud. Bassin du Sud-Ouest provides well sheltered anchorage in 11 to 17m, mud. The mariner anchoring in shallower water farther W should keep clear of the submarine pipeline which crosses Basin du Sud-Ouest about 0.9 mile above the bridge.

Cap de Gaspe to Pointe a la Renommee

7.42 Cap de Gaspe (48°45'N., 64°10'W.) has been previously described in paragraph 7.40.

The coast between Cap de Gaspe and Pointe a la Renommee, about 30 miles to the NW, extends irregularly 6.5 miles to the N to Cap des Rosiers, with the coast receding to the W between these points to form a bight. Between Cap des Rosiers and Pointe a la Renommee, about 23.5 miles to the NW, the coast consists of bold cliffs backed by high terrain a few miles inland. Several small fishing harbors lie along this stretch of coast.

Depths—Limitations.—The coast between Cap de Gaspe and Pointe a la Renommee is clear of all dangers outside about the 40m curve, which lies at its greatest distance almost 2 miles offshore about 4 miles N of Cap de Gaspe.

Recif du Serpent, with a least depth of 2.1m, extends about 1 mile E from Pointe du Serpent.

Between Cap de Gaspe and Cap Bon Ami, about 3 miles to the NW, the coast is bordered by limestone cliffs rising sheer from the sea to a height of about 213m. North of this latter cape the coast gradually declines in height as far N as Cap des Rosiers, about 4 miles distant. All dangers along this stretch of coast are contained within the 11m curve, which lies about 0.5 mile offshore.

7.43 Cap des Rosiers (48°51'N., 64°12'W.), low and rocky, is fringed by foul ground which extends about 0.3 mile offshore. The cape has been reported to be a good radar target up to 6 miles.

Cap des Rosiers Light is a white round tower, 27.4m in height.

There is anchorage and shelter from NW winds under Cap des Rosiers but the holding ground is not good. When an E swell is running, this anchorage is dangerous.

Cap-des-Rosiers-Est is a fishing village with a small pier, about 1.5 miles S of Cap des Rosiers. Two jetties border the channel that leads to the inner basin. The S, L-shaped jetty is 137m long and is rock-filled at its S end; the N jetty is 100m long. The walls of the basin provide a total berthing length of 200m. Periodically the basin is dredged to a depth of 1.5m

Between Cap des Rosiers and Anse-au-Griffon, about 6.5 miles NW, the coast is steep-to within 0.75 mile of the shore.

Gaspé—Marine Railway Terminal

Cap des Rosiers Light

Jersey Cove, a small fishing harbor, lies about 3 miles NW of Cap des Rosiers. A submerged rock, with a depth of 6.4m, lies 0.5 mile offshore almost abreast of the cove.

Anse-au-Griffon (48°56'N., 64°18'W.), about 2 miles wide at its entrance, has a small boat harbor at its head at the mouth of a river, protected by training walls. The entrance to the harbor is protected on the S side by a breakwater and a breakwater-jetty on the N side, both of which extend in an E direction. The entrance and a section of the harbor were dredged to a depth of 1.3m; the depths alongside the wharves are less.

Due to silting, the depths in the harbor may be less than charted. Berths are situated on both sides of the river mouth.

7.44 Anse de la Riviere-au-Renard (49°00'N., 64°23'W.), a small enclosed harbor entered between Pointe au Renard and Pointe Samuel, lies about 5 miles NW of Anse-au-Griffon. The harbor is protected by a breakwater which extends from Pointe Samuel and by a pier which extends from Pointe au Renard. This pier extends 396m from the shore to a depth of 6.7m. A spur near the inshore end of this pier forms a small basin with a depth of 4.9m inside.

A group of four conspicuous radio masts with aircraft obstruction lights stands close NW of the bay.

Small vessels can take sheltered anchorage within the harbor, in depths of 3.7 to 4.6m.

The coast between Anse de la Riviere-au-Renard and Pointe du Serpent, about 5 miles NW, is fairly steep-to within 1 mile of the shore.

L'Echourie (49°03'N., 64°29'W.), close NW of Pointe du Serpent, is fronted by a 152m pier with a depth of 4.6m at its outer end.

L'Anse-a-Valleau, a small fishing harbor with a depth of 2.1m, stands about 3.5 miles NW of Pointe du Serpent.

There is a N wharf that is wooden and 120m long. The S wharf is 165m long. Depths alongside both wharves vary from 0.2 to 2.5m. Pontoons and a ramp are situated at the head of the basin.

The coast between L'Anse-a-Valleau and Pointe a la Renommee, about 3 miles NW, is steep-to within 0.5 mile of the shore.

Pointe a la Renommee to Cap de la Madeleine

7.45 Pointe a la Renommee (Fame Point) (49°07'N., 64°36'W.) is a bold promontory rising steeply from the shore. The point has been reported to be a good radar target up 18 miles and has been reported to be identifiable with charted features by radar up to 10 miles.

Pointe a la Renommee Light

The coast between Pointe a la Renommee and Cap de la Madeleine, about 31 miles WNW, is bold with cliffs and indented by several bays and coves. Inland, the rugged terrain rises to elevations of about 305m within 1 to 2 miles of the shore.

All of the dangers along this section of coast are contained within about the 20m curve, which lies up to 1 mile offshore in places.

Between Pointe a la Renommee and Pointe a la Fregate, about 14 miles WNW, the coast is steep-to within 0.5 mile of the shore.

Pointe de Cloridorme (49°11'N., 64°51'W.), the NW entrance point to a small bay, stands about 11 miles WNW of Pointe a la Renommee. Spits extend about 0.5 mile from both entrance points. The village of Cloridorme stands on the shores of the bay. An L-shaped jetty, 200m long and rock filled on its N side, is situated on the NW side of the bay, near Pointe Cloridorme. A breakwater extends S from the head of the jetty. Depths alongside range from 2.8 to 3.5m.

A light is exhibited from the head of the main jetty.

A conspicuous television tower, with an elevation of 228m, stands near the coast about 1 mile W of Pointe de Cloridorme.

A white cross (49°11'N., 64°51'W.) on Pointe Cloridorme is a useful mark.

Pointe a la Fregate (49°12'N., 64°56'W.) can be identified by the numerous white houses in the vicinity and by the conspicuous waterfall to the W of it.

Petite-Vallee is a small indentation in the coast about 4.5 miles W of Pointe a la Fregate. The pier on the E side of the

cove is in ruins.

Grande-Vallee, 8 miles W of Petite-Vallee, is a shallow cove with a pier extending from its W side for a distance of 251m, with depths of 4 to 7m at the outer end, and reported (1998) to be in ruins. A depth of 3.4m is located about 0.3 mile E of the outer end of the pier.

A conspicuous television tower, with an elevation of 335m, stands about 2 miles W of Grande-Vallee.

The coast between Grande-Vallee and **Cap de la Madeleine** (49°15'N., 65°20'W.), about 8 miles to the W, is generally steep-to with all of the known dangers lying no more than 1 mile offshore.

Cap de la Madeleine is described in paragraph 9.14.

Anticosti Island—South Coast

7.46 Pointe Heath (49°05'N., 61°42'W.), the SE extremity of Anticosti Island, is only about 3m high. This point, being so low, disappears from view at a distance of a few miles.

Tides—Currents.—At springs, the tidal current strongly rounds Pointe Heath at a distance of about 6 miles from shore. The flood current sets NE, while the ebb currents sets SW. About 5 miles from land, the currents turn 1 hour 30 minutes before HW and LW on shore. During neaps, these currents are modified both in speed and direction by the wind. The tidal current, running at a rate of about 0.75 knot, veers clockwise, making a complete circle in a tidal period.

Tide rips form over the coastal shoals during spring tides, with heavy overfalls in bad weather.

Winds—Weather.—Occasionally, W winds converge from both sides of Anticosti Island toward Pointe Heath and in the area between the winds and the land, usually 5 to 8 miles E of the island, the winds are light and variable.

Between Pointe Heath and Escarpment Bagot, about 21.5 miles to the W, the coast is low and somewhat irregular. This section of the coast is clear of known dangers seaward of the 10m curve, which lies, at most, about 1.5 miles offshore. Cybele Bay lies close W of Pointe Heath and provides fair anchorage, in depths of 11 to 18.3m, with offshore winds.

Caution.—Fog is frequently encountered off the E part of Anticosti Island and caution should be exercised when making an approach.

7.47 Pointe au Cormoran (49°04'N., 61°50'W.), about 5 miles W of Pointe Heath, is a conspicuous steep slope of red clay about 6.1m high. Foul ground, usually marked by breakers, extends about 0.8 mile S from the point.

Several streams discharge into the gulf along this stretch of coast and elevations of about 91.5m lie between 4 and 5 miles inland.

Pointe du Sud, 15 miles W of Pointe au Cormoran, is low and flat, with some small ponds just inshore of it, and no trees within 0.5 mile.

Escarpment Bagot (49°04'N., 62°16'W.), 0.7 mile W of Pointe du Sud, is only a slight rise in a coast that is otherwise low and flat. A rocky spit, with a depth of 3.7m at its outer end, extends 1.5 miles offshore, about 2 miles WNW of Escarpment Bagot.

The coast is low between Escarpment Bagot and Pointe du Sud Ouest, about 56 miles SW, and has much the same aspect for its entire length. It is difficult to distinguish one part from the other. A number of streams discharge into the gulf along this section of coast. From the Riviere du Pavillon, 26.5 miles WNW of Escarpment Bagot, the low shore begins to rise and a high ridge extends to the W close inside the shore for some miles past Pointe du Sud Ouest. Although the coast between Escarpment Bagot and Pointe du Sud Ouest is clear of off-lying dangers seaward of the 11m curve, which extends up to 1.5 miles offshore in place, there are reefs which extend about 1 mile offshore and are so steep-to that soundings give little warning of their proximity.

Tides—Currents.—The current, about 6 miles off Escarpment Bagot and 9 miles off the Riviere du Pavillon, usually sets in a clockwise direction during the tidal cycle. Inshore, the current follows the coast and sets W with the flood and E with the ebb. The maximum rate of slightly over 1 knot occurs 1 hours 45 minutes before HW or LW at Pointe au Pere.

Between Escarpment Bagot and Chaloupe, a point about 12 miles WNW, several streams empty into the gulf. The 11m curve lies up to 1 miles offshore in places. There are no off-lying dangers.

Between Chaloupe and Cap des Caps, about 18.5 miles WNW, all of the dangers are contained within about the 10m curve, which lies up to 1 mile offshore in places. A limestone cliff marks the mouth of the Riviere du Pavillon, about 15 miles WNW of Chaloupe. At Cap des Caps, about 4 miles farther WNW, there is a conspicuous sand cliff about 1.5 miles long. The mouth of the Riviere du Cap stands close W of this cliff.

Between Cap des Caps and Pointe du Sud Ouest, about 25 miles WNW, the 11m curve lies up to 1.5 miles offshore in places. The low coast recedes about 0.8 mile at Baie des Sables (Sandy Bay), about 13 miles WNW of Cap des Caps; this bay is shallow and fringed by foul ground. During offshore winds, only indifferent anchorage is available off the middle of the bay. A submerged rock, with a depth of 4.3m, lies about 2 miles SE of the NW point of the bay.

7.48 Pointe du Sud Ouest (49°24'N., 63°36'W.), lying about 11.5 miles WNW of Baie des Sables, is a low projecting mound of limestone with a small cove on its N side. Inland, the terrain rises to the summit of a ridge. The cliffs rise perpendicularly to the sea to a point about 5 miles NW of the point. A drying reef extends about 0.5 mile W from the point.

Tides—Currents.—Along the S coast of Anticosti Island, and as far as the middle of the passage between this island and the Gaspe coast, the current is very variable. As a rule, the set veers continuously around the compass clockwise but there are times when the veer may be counterclockwise through more than one quadrant or when the set may hold in one direction for several hours. The rate is never great. The maximum rate about 5 miles offshore is less than 1.5 knots. The rate in any onshore direction, as the current veers, seldom exceeds 0.5 knot.

Between Pointe du Sud Ouest and Cape Ottawa, about 4 miles NW, the coast is bordered by a high cliff. About 1 mile N of Cape Ottawa, the Jupiter River, the largest river on Anticosti Island, flows into the gulf. Conspicuous sandy cliffs, 55m high, stand close N of the river entrance. St. Mary Cliff, 44.2m high and easily distinguished, stands about 15 miles NW of the Ju-

piter River. A cove indents the shore about 6.5 miles WNW of this cliff. Cap a l'Aigle, the E entrance point to Ellis Bay, stands about 11.5 miles farther WNW.

Anchorage.—Anchorage in the cove is not recommended. Although sheltered from E winds, it can be dangerous during W winds which are usually preceded by a heavy swell. The holding ground of gravel and shell is poor.

The coast between Pointe du Sud Ouest and Pointe Ouest, about 47 miles NW, is indented by Ellis Bay, about 8 miles E of the latter point. Port Menier, the principal settlement on the island, stands on the NE side of this bay. This coast is also fringed by reefs and foul ground which extend up to 1 mile offshore in places. The 10m curve contains all the dangers along this section of coast, but steep-to reefs lie close within this curve.

7.49 Baie Ellis (Baie Gamache)(49°48'N., 64°21'W.), entered between Cap a l'Aigle and Cap Henri, about 2.8 miles WNW, recedes about the same distance to the NW. The bay is easily identified from the offing, for Cap Henri being a bluff, and the land at the head of the bay being very low, the opening is clearly made out. A long line of breakers is usually visible off the flats on both sides of the entrance. White Cliff, 13.7m high and conspicuous, stands on the E side of the bay, about 2.5 miles N of Cap a l'Aigle.

The entire shore of the bay is bordered by flats which almost dry, and by extending shoals with depths of 5.5m and less.

The entrance channel, which leads through the central part of the bay, has general depths of 3.1 to 7.6m up to 1.75 miles above the entrance, and a dredged depth of 4.6m from there to the loading berths.

7.50 Port Menier (49°49'N., 64°21'W.) The village of Port-Menier, located on the NE side of Baie Gamache, is the main village of the municipality of L'Ile-d'Anticosti.

Ice.—The port is usually open to navigation from April 1 to November 30.

Tides—Currents.—The spring range of the tide is about 1.4m, while the mean range is about 1.1m.

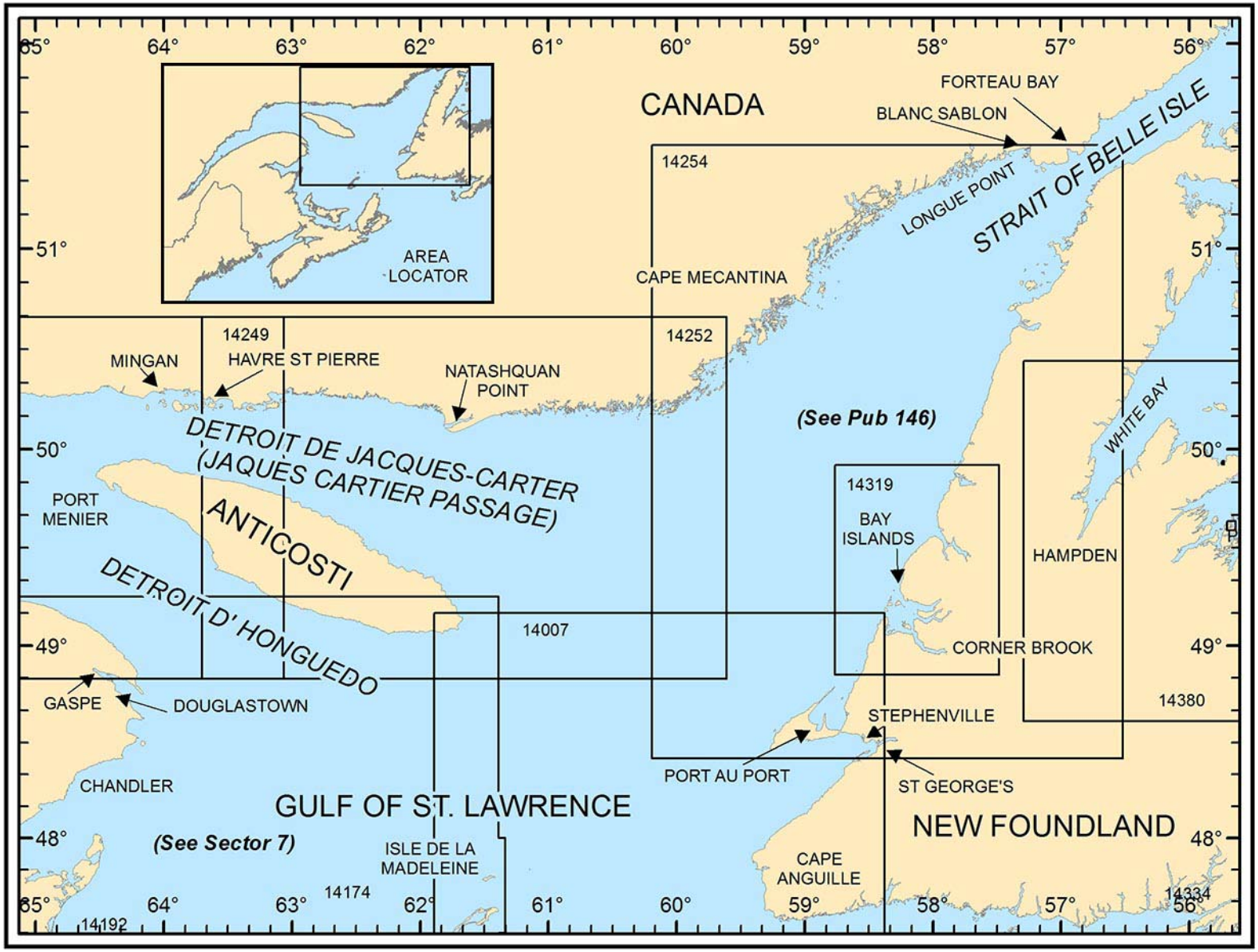
Depths—Limitations.—A causeway, at the outer end of which is a public wharf protected by a breakwater, extends SW from the NE shore of the bay to the seaward edge of the reefs. The S side of the wharf has a berthing face 210m long. A ramp is situated on the N side of the jetty at its outer end. The basin between the jetty and the breakwater is sheltered except from the SW.

Dolphins, in ruins, extend in two lines from the head of the public jetty to the N shore of the bay; in the past they were used to hold a boom.

Aspect.—Range lights, in line bearing 339.5°, lead into the bay. There is a noticeable white cliff, 14m high, on the E shore of the bay.

Anchorage.—During June, July, and August, anchorage can be taken, in a depth of 5.5m, mud, close E of the range line. This position is exposed to the S and caution should be used when using it. Anchorage can be taken farther out, near the range line, about 1.5 miles SSE of the public wharf, in depths of 6.4 to 7.3m, but the ground and shelter are not as good as in the central part of the bay.

Between Baie Ellis and **Pointe de l'Ouest** (49°52'N., 64°32'W.), about 7 miles NW, the coast is fringed by reefs which extend up to 1.25 miles offshore in places. Pointe de l'Oueste is described in paragraph 8.38.


CANADA
FORTEAU BAY
BLANC SABLON
STRAIT OF BELLE ISLE
LONGUE POINT
14254
CAPE MECANTINA
AREA LOCATOR
14249
HAVRE ST PIERRE
MINGAN
NATASHQUAN POINT
14252
(See Pub 146)
WHITE BAY
DETROIT DE JACQUES-CARTER (JAQUES CARTIER PASSAGE)
ANTICOSTI
PORT MENIER
14319
BAY ISLANDS
HAMPDEN
DETROIT D' HONGUEDO
14007
CORNER BROOK
GASPE
DOUGLASTOWN
STEPHENVILLE
14380
PORT AU PORT
ST GEORGE'S
CHANDLER
GULF OF ST. LAWRENCE
NEW FOUNDLAND
(See Sector 7)
ISLE DE LA MADELEINE
CAPE ANGUILLE
14174
14192
14334
65°
64°
63°
62°
61°
60°
59°
58°
57°
56°
51°
50°
49°
48°

SECTOR 8

THE GULF OF ST. LAWRENCE (NORTH SIDE) FROM LONGUE POINT TO THE RIVIERE ST. JEAN AND ANTICOSTI ISLAND (NORTH SIDE)

Plan.—This sector describes the N shore of the Gulf of St. Lawrence and the numerous off-lying islands and dangers between Longue Pointe and the Riviere St. Jean, including the Mingan Islands and the N shore of Anticosti Island from Pointe Heath to Pointe Ouest. The arrangement is SW from Longue Pointe to Cape Whittle, then W to the Riviere St.Jean, and W from Pointe Heath to Pointe Ouest. Included is the commercial harbor of Harrington and the deep-water harbors of Mingan and Havre St. Pierre.

General Remarks

8.1 Winds—Weather.—The climate can be severe, and much fog accompanies the prevailing S winds. The ice does not usually leave the coast before June, and begins to form again, inshore, in September, when frosts are frequent at night.

Tides—Currents.—On the N shore of the Gulf of St. Lawrence, from the **Eskimo Islands** (51°20'N., 57°45'W.) to **Cape Whittle** (50°10'N., 60°07'W.), in calms or E winds, the general movement of the water is W, but in W winds it is very variable. Between Cape Whittle and **Pointe de l'Est** (49°05'N., 61°42'W.), the currents are weak and affected by the wind.

There is a constant set to the SE and S around the E end of Anticosti Island, Cap de la Table, and Pointe de l'Est. This is part of the generally counterclockwise circulation around the gulf. The W set along the N shore towards Jacques Cartier Passage does not pass through the strait. It evidently swings S across its E entrance towards the Anticosti shore, passes around the E end of the island, and then NW towards the N part of the St. Lawrence estuary. It is conspicuous as it turns S on approaching the land to flow across the entrance to the St. Lawrence River.

The N shore of the Gulf of St. Lawrence, between Longue Point and Cape Whittle, 136 miles to the SW, is indented with inlets and bays, and fringed with islands, rocks, and ledges which frequently rise abruptly from deep water to within about 1m of the surface. In some parts the islands and rocks are so numerous that only very small vessels can navigate among them.

Most of the mainland does not exceed an elevation of 91 to 122m, and is often much lower, as are all the islands, except for Île du Gros Mecatina (paragraph 8.10) and Île du Petit Mecatina (paragraph 8.12). These two islands, along with the Bradore Hills (paragraph 8.3), are remarkable.

The mainland and islands are composed of granite, with no trees except at the heads of bays, where there are occasionally small stands of birch and spruce.

Traffic Separation Schemes.—Vessel Traffic Service.—The St. Lawrence Waterway Vessel Traffic Services Zone (VTSZ) comprises the waters of the St. Lawrence River extending upstream from longitude 66°W to the upper limits of Montreal Harbor. The VTSZ includes the Saguenay River and other tributaries where vessels enter or leave the St. Lawrence River between the above limits, but excludes the portion of the St. Lawrence River from the St. Lambert Lock to a position 650m downstream from the Jacques-Cartier Bridge.

Participation in the VTSZ is mandatory for all vessels greater than 7.6m in length.

Vessel reporting points are best seen on the chart. There are six sectors in the VTSZ; the boundary between sectors are, as follows:

Sector	Boundary (approximate)
1/2	A line joining Pointe de Manicouagan and Baie des Sables.
2/3	A line joining Cap du Basque and Pointe Riviere du Loup, including the Saguenay River.
3/4	A line joining Pointe St-Nicholas and a point about 1 mile WSW of Pointe de la Vielle Eglise.
4/5	At Yamachichi Bend.
5/6	A line joining Cap St. Michel and Île Lebel.

The VTS sectors can be contacted, as follows:

Sector	Call sign	VHF channel
1	Escoumins Traffic	14
2	Escoumins Traffic	9
3	Quebec Traffic	12
4	Quebec Traffic	13
5	Montreal Traffic	9

The VTS sectors continuously monitor VHF channel 6.

Caution.—There are few navigational aids between Longue Pointe and Cape Whittle. Navigation in the vicinity of the closely off-lying islands is dangerous at night or in fog, and even during daylight and good weather great caution is required. Drifting icebergs are frequently seen.

Longue Pointe to Île Mistanoque

8.2 Longue Pointe (51°25'N., 57°12'W.), the NW entrance point of the Strait of Belle Isle, rises to the NE to a sharp bluff 51m high. The village of Lourdes du Blanc Sablon stands close E of the point, and a shrine on top of the hill N of the town and a church close W of the town are conspicuous objects.

Caution.—A ferry route crosses the Strait of Belle Isle in a N-S direction close E of Belle Isle and W of Tooker Bank.

Perroquet Bank (51°24'N., 57°15'W.), about 1 mile long, lies with its outer end about 1.8 miles WSW of Longue Point.

It has five shoal spots, the least of which has a depth of 7m lying about 1.5 miles from Longue Point.

Between Longue Point and Île Mistanoque, which lies adjacent to the shore about 38.5 miles WSW, the coast trends about 5.5 miles N to the head of Baie de Brador, where it trends about 39 miles WSW to the E end of Île Mistanoque. Of the numerous islands that lie up to 4 miles off this coast, the greatest concentration, known as the Îles des Esquimaux, is located between 15 to 28 miles W of Longue Point. Baie de Bonne Esperance lies at the E end of the Îles des Esquimaux.

Baie de Bradore (51°28'N., 57°20'W.) is formed by a bend in the coast about 5.5 miles N of Longue Pointe. It is fronted by several areas of foul ground and islands surrounded by dangers, the outermost and largest island of which is Île du Bassin. The bay is difficult of access and not suitable for large vessels, as it is exposed to heavy seas sent in by SW winds.

Île du Bassin (Island of Ledges) fronts the bay about 3.5 miles NNW of Longue Pointe. It is separated from the mainland by a deep channel about 0.3 mile wide between the 11m curves on each side. Baie de Bradore Range Lights, in line bearing 005°, are shown from small white sheds standing on The Bluff (La Falaise), a peninsula at the head of the bay. This range indicates the fairway in the entrance channel. Pigeon Islet lies off the NE side of Île du Bassin.

Blanc-Sablon Harbour (51°25'N., 57°09'W.) is situated at the head of the bay. During navigation season there is a seasonal marine shuttle service for supplies and passengers. A seasonal ferry for passengers and vehicles operates between Blanc Sablon and St. Barbe (Newfoundland and Labrador).

Aspect.—Range lights bearing 063½°, leads north of Île au Bois and into the bay.

Blanc-Sablon—Berthing Information			
Berth	**Length**	**Depth**	**Remarks**
No 01	112	—	Ferry. Maximum Draft: 6.6m (HW).

Blanc-Sablon—Contact Information	
Harbormaster	
Telephone	418-461-2656
Facsimile	418-461-2356

Depths—Limitations.—A public wharf, 150m long and 30m wide, is situated on the W shore of the bay. The N face of the wharf has a berth length of 114m with depths of 6.2 to 6.7m alongside. The S face has a berth length of 62m with depths of 5.0 to 7.4m alongside. The ro-ro ramp, situated on the north side of the wharf, is used by the ferry. A light is shown from a tower on the outer end of the wharf. A cathodic protection system against corrosion has been installed at the commercial wharf of Blanc-Sablon. When berthing at this wharf, operating procedures must be followed accordingly in order to avoid damage to vessels. Just N of the public wharf, there is a fishermen's wharf, with a least depth of 2.9m along the E side.

Caution.—A submarine cable extends 180m from the shore of Pointe à Morel; a prohibited anchorage sign is posted close to the shore. Strong tidal streams are experienced close off the wharf.

A shoal, situated 0.1 mile south of the jetty, dries 0.3 m.

8.3 Rocher East (51°27'N., 57°15'W.), with a depth of 6.8m, lies on the E side of the entrance to the channel between Île du Bassin and the mainland. Rocher Gull, 0.3m high, lies about 0.5 mile N of Rocher East. Shoal ground extends about 0.3 mile S of it. Rocher Bull, on the W side of the channel abreast Rocher Gull, is 0.6m high. Shoal water extends about 0.2 mile S of it.

There is a large waterfall, conspicuous from seaward, located about 2.8 miles W from The Bluff peninsula. The Bradore Hills, three round-backed mountains, rise to a maximum height of about 305m between 4 and 5 miles N of the head of Baie de Bradore.

Baie des Belles Amours (51°28'N., 57°26'W.) lies about 8.5 miles WNW of Longue Point. Stony Point, low and green, and Rochers Flat, about 1 mile SE, lie on the E side of the bay. **Pointe Belles Amours** (51°27'N., 57°26'W.), of bare granite, and Pointe au Havre, 1.5 miles N, form the W side. Havre des Belles Amours, a landlocked bay, lies within and to the W of Pointe au Havre.

The entrance to Baie des Belles Amours is divided into two passages by a rocky patch with a least depth of 4.3m, which sometimes breaks. Eastern Passage is the main channel, and Western Passage is suitable only for small vessels with local knowledge. Western Passage has a least depth of 7.6m.

Baie des Belles Amours has good anchorage ground. Havre des Belles Amours affords excellent shelter, in depths of 9.1 to 12.2m, mud, but room is restricted and is only suitable for small craft.

Vessels should pass N of a rock which dries 1.2m, about 0.2 mile N of Pointe au Havre. There is no passage between Pointe au Havre and the drying rock, except for small boats.

The land separating Baie des Belles Amours, Middle Bay, and Havre des Cinq Lieues is very remarkable. Low granite, on which ridges of boulders, with coarse grass and moss, extend inland to the range of granite hills which trend W from Baie de Bradore. This low country has a green and alluvial appearance when seen from seaward, and not until a near approach is it seen to be composed of rock and boulders.

Middle Bay, a roadstead open to the S, is entered between **Middle Point** (51°26'N., 57°29'W.), about 1.5 miles WSW of Pointe Belles Amours, and Pointe des Cinq Lieues, about 1.5 miles farther W. Pointe Peak, which divides the head of the bay into two coves, has a remarkable granite promontory on it. The SW extremity of the point is a ragged isolated peak. The settlement of Middle Bay, with telegraph and air mail service, stands at the head of the bay. Range lights, in line bearing 358.5°, indicating the fairway in the entrance channel are shown from a position about 0.5 mile NW of Pointe Peak. These lights are only visible when in alignment.

There is a public wharf at the head of Middle Bay on the E side.

Havre des Cinq Lieues (Five Leagues Harbor) lies close W of Middle Bay. Pointe des Cinq Lieues is the SW end of the low peninsula separating Havre des Cinq Lieues from Middle Bay. There is an isolated precipitous hill, nearly 61m high, 0.75 mile N of the point. It is a good navigational aid for identifying

the harbor from the W. The harbor is suitable only for small vessels.

The entrance to the harbor lies between Pointe des Cinq Lieues and Pointe Blanche, about 1.5 miles to the W. The entrance is obstructed by a number of reefs, parts of which dry and over which the sea nearly always breaks. Barrier Reef, the outermost, dries and lies about 1 mile S of Pointe Blanche.

8.4 Île de la Demoiselle (51°25'N., 57°38'W.) 65m high, with Ile au Saumon connected to its SE extremity by a boulder spit, lies close off the mainland, about 4 miles WSW of Pointe des Cinq Lieues, and fronts the entrance to Baie au Saumon. From seaward, Île de la Demoiselle cannot be distinguished from the mainland. Baie au Saumon, a sheltered inlet, recedes about 2.5 miles NNE from its entrance; there are two approaches. The E entrance lies between Île de la Demoiselle and the mainland, and is used only by local boats. The main entrance is from Baie de Bonne-Esperance, and passes N of Île de la Demoiselle. Salmon Bay village is situated on the S side of the entrance, and has telegraph and air mail service. Salmon Bay village is approached through a channel, with a least depth of 7.6m, N of Île de la Demoiselle.

The E entrance to Salmon Bay, between Ile de la Demoiselle and the mainland, has a depth of only 2.4m and is used only by local boats.

A red daybeacon is shown from a skeleton tower on the SE part of Île au Salmon.

A T-shaped pier, 33m long, with a depth of 4m alongside its head, is situated at Salmon Bay village.

Baie de Bonne-Esperance lies between Ile de la Demoiselle on the E and a group of islands on the W, of which Ile Bonne-Esperance and Grand Ile are the largest. Havre Bonne-Esperance, an arm of the bay, lies between the two latter islands and is sheltered.

Numerous rocks and patches of foul ground, which can best be seen on the chart, lie on each side of the main channel to Baie de Bonne-Esperance.

A lighted buoy, equipped with a radar reflector, is moored about 0.3 mile SW of Charlie Knob, a rocky shoal patch, with a least depth of 14.3m, lying E of the main approach channel to Baie de Bonne-Esperance.

The **Îles des Esquimaux** (Eskimo Islands) (51°22'N., 57°45'W.) is made up of islands, islets, and rocks that extend about 13 miles SW from Île de la Demoiselle. They are of all shapes and sizes, are less than 91m high, and bare of trees, except some near the mainland. In general, this group is surrounded by foul ground and the area is encumbered with numerous rocks and dangers that extend to seaward for about 1.5 miles.

8.5 Île a la Baleine (51°21'N., 57°42'W.), the outermost island of the Îles des Esquimaux, lies about 3.5 miles SSW of Île de la Demoiselle. The island is surrounded by foul ground and extends about 0.5 mile from its S extremity. A round hill near the center of the island is a good navigational aid for vessels making for Baie de Bonne-Esperance. A light is shown on the summit of the island. Haut fond Whale, with a depth of 5.5m, lies about 0.5 mile E of the N part of Île a la Baleine.

Baie des Esquimaux lies between the mainland and the N side of Île des Esquimaux, the largest and highest of the Îles des Esquimaux, and located about 1 mile W of Baie de Bonne-Esperance. From seaward, Eskimo Island (Île des Esquimaux) cannot be distinguished from the mainland. The channel into the bay through Champlain Passage is narrow, with a least depth of 2.4m, and is suitable only for small craft. An overhead cable, with a vertical clearance of 18m, crosses the channel near its N end.

An L-shaped public pier, with a head 39m long and a cold storage plant nearby, lies on the W side of Champlain Passage, 0.3 mile within the S entrance.

The W entrance to the bay between Eskimo Island and the mainland is wide and the fairway deep, but the approach to the entrance is encumbered and can only be used by small vessels with local knowledge. A settlement, with telegraph service, is situated in the NE arm of the bay.

Baie du Vieux Fort (Old Fort Bay) indents the coast about 2.5 miles NNE and is entered about 5.5 miles NW of Île a la Baleine. The bay is approached from seaward through Chenal du Vieux Fort, a deep passage lying between Île du Vieux Fort and the islands about 1 mile farther W and NW. The settlement of Vieux Fort is situated on the W side of the bay, about 1 mile within the entrance.

A T-shaped wharf, on which stands a light, is in ruins. An L-shaped jetty, 47m long, is situated close NE, with a fish processing plant nearby. The jetty has depths from 0.3 to 4.9m on the W side. Île du Vieux Fort, 31m high, is one of the largest of the Îles des Esquimaux.

8.6 Île Mermettes (51°19'N., 57°50'W.), a small islet, lies on the W side of the entrance of Chenal du Vieux Fort, about 2.25 miles SW of Île du Vieux Fort. A light is shown from the center of the islet. A racon transmits from the light on Île Mermettes.

Chenal du Vieux Fort Range Lights, in line bearing 011° and visible only when in alignment, are shown from the E of Baie du Vieux Fort.

The Îles aux Chiens (Dog Islands) is a group of islands surrounded by numerous rocks and foul ground. They lie between Île Mermettes and the coast about 5.3 miles W. There are rocky patches within 1.5 miles S of the outermost islands, islets, and prominent rocks. The S Îles aux Chiens are very low, but those closer to the mainland, though small, range to 27m high.

Baie des Rochers (Rocky Bay) (51°19'N., 58°02'W.) is entered about 1.5 miles NW of **Ellinor Rock** (51°17'N., 58°01'W.), which has a depth of less than 1.8m. Porpoise Rocks lie about 0.8 mile NE and E of Ellinor Rock. This bay indents the coast N between high rocky shores. Port St. Servain village, with telegraph service, is situated on the E shore of the bay, about 1 mile within the entrance. The bay is suitable only for small vessels with local knowledge.

Baie des Homards (Lobster Bay), a narrow inlet, extends from the coast about 4 miles N between high, steep shores. Its entrance lies W of Baie des Rochers. Île Wright, on which stands a beacon, and Île Fournel lie off the E side of the entrance.

Baie Napetipi, a very narrow inlet, extends from the coast about 4.5 miles NNE between high rocky shores. The entrance lies about 3.5 miles WSW of Baie des Homards. Numerous islets, rocky patches, and drying rocks, which can best be seen on the chart, lie offshore between the entrance to Baie des

Homards and Île Checatica, about 5 miles WSW. Île Checatica, 47m high and steep-to on its S side, is difficult to distinguish from seaward.

Depths—Limitations.—The depths off this coast are very irregular. The 100m curve lies about 8 miles offshore; the 40m curve lies up to 5.5 miles offshore. Between these two curves there are several detached rocky patches, but none has depths of less than 18m.

Anchorage.—In general, the bays, harbors, and inlets described with this section of the coast provide anchorage for small vessels. These anchorages are rather narrow, the most spacious being in Baie de Bonne-Esperance. **Havre Bonne-Esperance** (51°24'N., 57°40'W.), an arm of the bay, is a sheltered harbor, with depths of 21.9 to 29.3m.

Île Mistanoque to Cap Mecatina

8.7 The coast between **Île Mistanoque** (51°15'N., 58°13'W.) and Cap Mecatina, about 43 miles SW, is indented by numerous bays and inlets. Between Île Mistanoque and Baie de Tabatiere, about 37.5 miles SW, the irregular coastal indentation is fronted by numerous rocks, dangers, and islands, which like the coast are bold and difficult to distinguish from the mainland. There are numerous deep passages leading between the outer rocks and dangers to the inlets on the coast, but they are intricate and local knowledge is necessary.

Between Baie de la Tabatiere and Cap Mecatina, 6.5 miles SSW, the coast is also irregular. The off-lying islands and dangers lie up to 8.5 miles offshore, but they are much less concentrated.

Île Mistanoque, 36m high, lies close offshore and fronts the entrance to Baie Mistanoque, a deep but narrow inlet that extends about 3 miles N. This island is steep-to on its S side and difficult to distinguish from seaward, as well as Île Checa-tica lying close ENE. A light is shown on the SE end of Île Mistanoque.

Mistanoque Harbor, a small cove on the N side of Île Mistanoque and opposite the entrance to Baie Mistanoque, has anchorage for moderate-size vessels. There are three entrance channels to the harbor as well as the bay, but local knowledge is necessary.

Baie de Jacques Cartier (Shecatica Bay) is entered between Île Mistanoque and Île Cumberland, about 2.3 miles WSW, and extends very irregularly about 10 miles N. There are many islands in the bay, forming branches and narrow passages which require local knowledge for navigation.

Several islands and dangers, which can best be seen on the chart, front the entrance to the bay.

Rocher Shag (Shag Rock) (51°11'N., 58°18'W.), with many rocks in the vicinity, lies about 5 miles SW of Île Mistanoque. A lighted buoy is moored about 0.8 mile SSW of the rock.

Île de la Grande Passe (51°10'N., 58°26'W.) lies about 5 miles WSW of Rocher Shag. Range lights, visible in line of the range only, are shown on the N end of Île de la Grande Passe and a small islet to the E. These lights lead through Passage St. Augustin.

St. Augustin Chain, a line of small islets, lies close SSE of Île de la Grande Passe. St. Augustin Square, a group of rocks, islets, and shoals lie ESE of Outer Islet. A large number of islands, interspersed with innumerable rocks and sunken dangers, extend offshore inside a line between St. Augustin Chain at the NE end of this area and the Îles Bun and Rochers Bun, 16 miles SW.

8.8 **St. Augustin Bay** (51°12'N., 58°35'W.), of considerable size and depth, is a coastal indentation about 10 miles W of Rocher Shag. Passage St. Augustin is the widest of the deep passages that lead between the islands to the bay. It may also be approached between the islands, from S through **Grand Rigolet Entrance** (50°55'N., 58°54'W.) and then through Grand Passe, or through Grand Rigolet, and then through Passage Fournier and Catherine Strait but these intricate passages require local knowledge.

A public wharf is situated to the N of Pointe-a-la-Truite on the S side of Passe Saint-Augustin and approximately 0.5 mile WNW of Ile Driscoll. The main section is 61m long, with a least depth of 7.1m.

The public wharf on Île de la Conserverie, 0.5 mile from the E entrance, is not in use. Île de la Conserverie lies at the NE end of La Grande Passe. The whole area on the SE of Île de la Grande Passe is a migratory bird sanctuary; access regulations apply to this protected area.

8.9 **Recife Fecteau** (50°56'N., 58°53'W.), with a least depth of 3.7m, lies in mid-channel in the entrance to Grand Rigolet. Navigational aids, which can best be seen on the charts, stand on the shores and islands of these passages.

The St. Augustin River enters the bay on the W side through a sand and gravel delta; a buoyed boat channel leads to St. Augustin village from its mouth. A microwave tower, having an elevation of 267m, stands about 1 mile N of the village.

Groups of islands form the seaward boundary of Grand Rigolet passage and continue to the SW from Isles Bun to Île du Guet at the SW entrance to the channel. **Île du Guet** (50°56'N., 58°53'W.), from which a light is shown, lies on the E side of the entrance to Grand Rigolet.

Baie des Ha Ha, which is rather extensive, is entered about 2 miles W of the entrance to Grand Rigolet, but the two entrance channels are obstructed by islands and shoals requiring local knowledge.

8.10 **Baie de la Tabatiere** (50°50'N., 58°58'W.) indents the coast about 6.5 miles SW of Île du Guet. Its approach and entrance channel are marked by range lights and lighted buoys.

Tabatiere

Baie des Moutons indents the coast about 5 miles SSW of

Baie de la Tabatiere. The bay extends NW between high steep hills, traversed by large basaltic dykes. Range lights are shown on the W shore of the bay.

A public wharf is situated on the W side of the bay. There are rocks all along its length, except for a 14m long section situated on its SW face.

Île du Gros Mecatina (50°48'N., 58°52'W.) lies about 4 miles ESE of Baie de la Tabatiere, and is the outermost islands off this coast. The hills in the SW part of the island rise to an elevation of 142m, and are fissured in a remarkable manner by basaltic dikes which traverse the island from the N to S. Île de la Boule, 66m high, is a rounded islet close off the NW end of Île du Gross Mecatina. A light is shown on its summit. Quail Shoal, with a depth of 3m, lies about 2 miles from the S end of Île du Gros Mecatina, and in between is another rock and an island.

Havre Gaumont (50 °49'N., 58°51'W.), a cove on the N side of Île du Gros Mecatina, is sheltered from NE winds by the Îles MacKinnon. There is anchorage near the head of the cove, in 25-40m, good holding ground.

Île aux Trois Collines, the NE of the islands lying between Baie de la Tabatiere and Cap Mecatina, lies about 4.5 miles E of the N extremity of Île du Gros Mecatina. It is 37m high, rugged, and has a ragged summit; the upper half is sparsely covered with grass and bushes.

8.11 **Île Plate** (50°45'N., 58°45'W.), about 5 miles SSW of Île aux Trois Collines, is 16m high, flat and rocky, and grass covered on its N side. A light is shown on the S summit of the island. A disused lighthouse is near the light and consists of a white tower with a red upper portion. This island, under normal conditions, is reported to be radar conspicuous at 12 miles. This island and the adjacent area are a migratory bird sanctuary and access regulations apply to these protected areas.

The Îles aux Marmettes (Murr Islands), Rochers aux Marmettes (Murr Rocks), and Recifs aux Marmettes (Murr Reef) comprise the S island of the off-lying islands and dangers on this section of the coast. They lie about 4.5 miles S of the S end of Île du Gros Mecatina. The Îles aux Marmettes, 22m and 20m high, are the two northwesternmost features. Rochers aux Marmettes, two flat-topped rocks, 2.7m and 3.7m high are the S features. Recifs aux Marmettes, which dries 1.2m, is the NE feature and difficult to see.

The islands and rocks extending about 2 miles SE from **Cap Mecatina** (50°44'N., 59°01'W.) are separated from the NW Île aux Marmettes by a deep passage about 2.5 miles wide.

From a position about 6 miles S of Île Mistanoque, the 100m curve trends rather regularly SW for about 30 miles to a position about 2.8 miles E of the N extremity of Île du Gros Mecatina; this curve lies up to 5 miles seaward of the outer islands of the group lying off this coast. In general, the 40m curve lies about 2.5 to 3.5 miles within the 100m curve. The depths within the 40m curve and between the islands and dangers are very irregular.

Caution.—Caution is necessary for vessels proceeding along the coast between Île Mistanoque and Cap Mecatina, as the survey in this locality is incomplete.

A local magnetic anomaly will be found in the vicinity of Île Plate and also all over the 55m banks lying about 10 to 20 miles S of Île Plate.

Cap Mecatina to Cape Whittle

8.12 **Cap Mecatina** (Cap du Gros Mecatina) (50°44'N., 59°01'W.), the SE end of a remarkable promontory, rises to a height of 265m close within. It lies immediately S of Mutton Bay and is traversed in a NE-SW direction by basaltic dikes which cut completely through the promontory into Baie des Moutons.

From Cap Mecatina, the coast trends in a general SW direction for 54.5 miles to Cape Whittle. Like other coastal sections in the N part of the Gulf of St. Lawrence, this coast is indented by numerous bays and inlets, which are encumbered by above-water features and hidden dangers, and are fronted by off-lying islands. The only place of commercial significance on the coast is Harrington Harbor, which lies among the Harrington Islands. In general, the larger islands are high. Île du Petit Mecatina (Little Mecatina Island), the largest and highest on this coast, lies about 15 miles SW of Cap Mecatina. Some of the off-lying islands, which lie up to 6 miles offshore, are rather steep-to on the seaward side and lie up to 9.5 miles offshore.

A chain of islets, some above-water rocks at its outer end, extends nearly 2.5 miles SE from Cap Mecatina. Entrance Island, from which a light is shown, lies in this chain about 1 mile SE of the cape.

The bay formed between Cap Mecatina and Île du Petit Mecatina, about 16 miles SW, is full of islands, rocks, and reefs. The Bald Islands and the Gore Islands are the outermost islands between Cap Mecatina and Île du Petit Mecatina. Numerous beacons and range lights mark the various passages in the vicinity of these islands and lead to several anchorages.

Île du Petit Mecatina (50°31'N., 59°21'W.), with the S end nearly divided in two parts by Baie de Salaberry, lies about 5 miles WSW of the Gore Islands. The S part of the island is high, with a summit of 156m. The N part is a low mossy swamp, with isolated outcrops of granite. Aylmer Sound, W of the island, is navigable for about 5 miles, but there are rocks, reefs, and shoals scattered throughout the bay. A power transmission line, with a vertical clearance of 12.5m, crosses the inner islands W of Ayler Sound and N of the larger island which lies N of Harrington Island.

8.13 The **Îles Harrington** (50°29'N., 59°29'W.), lying about 5 miles SW of Île du Petit Mecatina, are a close group of seven islands and a number of islets and rocks. Île Harrington (Hospital Island), 84m high, is the largest and highest of the islands.

Harrington Harbor (50°30'N., 59°29'W.), small but sheltered, lies off the SE side of Hospital Island. Entry Passage, deep but narrow, is the main entrance channel. It lies between Entry Island, about 0.3 mile SE of Hospital Island, and Schooner Island, close S of Entry Island. The channel is approached from the E. Harrington Harbor village, on the SE side of Hospital Island, has air and telegraph service, regular steamer service during the navigation season, and a hospital.

Depths—Limitations.—Depths in the harbor range from 14.6 to 32.9m between the dangers that fringe Hospital Island and Entry Island.

A jetty, 183m long, is situated 0.15 mile N of the SE point of Île Harrington. The outer berths on each side are 54m long; there is a least depth of 2.4m on the N side, with 6.1m on the

outer face, and 2.9 to 6.4m on the S side.

A light is exhibited from a square mast, 8m high, situated at the head of the jetty.

Aspect.—Harrington Harbor Range Lights, in line bearing 288.5°, are situated on a small island close SW of Île Harrington. The lights are visible only when in alignment.

Anchorage.—Anchorage is available, in 14.6m, mud, between Île Harrington and Entry Island.

8.14 Black Rock (50°26'N., 59°28'W.), the outermost danger in this vicinity, lies about 2 miles SSE of Cape Airey, the S end of Cape Island. It is 2.1m high and 45.7m long. A bank, with a least depth of 6.4m, and a patch, with a depth of 11m, lie about 0.4 mile NW and 1.3 miles WSW, respectively, of Black Rock.

A rocky patch, steep-to and with a least charted depth of 16.5m, lies about 17 miles bearing 125° from Cape Airey.

Caution.—There was a least depth of 7m on the line of lights and a depth of 4.6m close S of the range leading into Harrington Harbor.

Several overhead power cables span the channels NNE of Île Harrington.

Caution is advised between the Îles Harrington and the St. Mary Islands, lying about 10 miles SW, as this coastal indentation is encumbered with numerous dangers and has not been completely surveyed.

8.15 The **St. Mary Islands** (Îles Ste-Marie) (50°19'N., 59°39'W.) consist of three islands close together, practically forming one narrow island of steep granite 3 miles long.

A light is shown from the summit of the largest and W island of the group. A fog signal is also sounded from the light.

Anchorage may be taken, in 32.9m, mud, off the W side of the NE island of the St. Mary Islands. This anchorage is reported to be fairly good.

To the W of the St. Mary Islands, the mainland is indented with numerous bays and fringed with islands, many of which are high and bluff. From a little distance offshore, the islands merge with the mainland, which rises to a range of hills about 183m high, but with no distinguishable summits. The largest island groups to the W of the St. Mary Islands are the Cliff Islands, the Perroquets Islands, and the Galibois Islands, respectively.

Roach Rock (50°13'N., 59°38'W.), with a least depth of 10.1m, lies about 4.8 miles SSE of the S end of the St. Mary Islands. **Bent Rock** (50°11'N., 59°45'W.), with a depth of 9.4m, lies about 5 miles SW of Roach Rock. St. Mary Reefs, consisting of two extensive banks under 36.6m with numerous pinnacles, one of which dries 1.2m, lies about 9 miles SW of the S end of the St. Mary Islands.

The **Galibois Islands** (50°18'N., 59°47'W.) lie close W of the St. Mary Islands. Havre Yankee indents the S island of the largest of the Galibois Islands. Havre Blais, on the N side of the island, is sheltered, with anchorage available, in 20.1m, mud. It may be entered by small vessels from both the E and W, but there are rocks to be avoided and local knowledge is recommended.

Depths between the St. Mary Islands and Cape Whittle, about 19 miles WSW, are exceedingly irregular within about 10 miles of the coast. This area is interspersed rather sparsely with steep-to patches. The 100m curve, after trending irregularly E of St. Mary Islands to a position about 10 miles S of these islands, trends in a general WSW direction to a position about 6.8 miles S of Cap Whittle.

8.16 Île de Ouapitagone (50°13'N., 60°02'W.) and the Îles de Ouapitagone du Large lie about 15 miles WSW of the St. Mary Islands. The Îles de Ouapitagone du Large lie close SE of Île de Ouapitagone and are 21 to 24m high. They are of bare granite and appear to be one island.

Île du Lac, of which Cape Whittle is the SW extremity, lies close W of the Îles de Ouapitagone du Large. The S coast of the island is remarkable for the red craggy cliffs, more than 31m high, and stained white by the cormorants.

Havre de Ouapitagone, sheltered, lies between Île de Ouapitagone and the Îles de Ouapitagone du Large, and is steep-to on the SE side of Île de Ouapitagone. It is entered through East Passage on the NE side of Île de Ouapitagone or through West Passage, the preferred one, on the SW side of the same island. Both entrances are difficult and local knowledge is necessary.

In Havre de Ouapitagone, the flood current usually sets W and the ebb E past the entrance at 0.5 to 1 knot.

Anchorage may be taken in Havre de Ouapitagone. It is sheltered but restricted.

Mistassini Stone, on top of one of the islands near the SE end of the Îles de Ouapitagone, is a remarkable block of granite resembling a mortar, and known locally as "The Gun." It is a good landmark when approaching East Passage, which leads into Havre de Ouapitagone.

8.17 South Makers Ledge (50°09'N., 59°58'W.), 1.5m high, lies about 6 miles ESE of Cape Whittle. The bottom is very irregular in this vicinity. A bank, with a least depth of 5.8m, lies about 4 miles NE of South Makers Ledge. Cormorant Rocks (Rochers au Cormoran), a number of islets, drying rocks, and shoal depths extending about 1.5 miles E and W, lie about 1.5 miles off Île de Ouapitagone du Large. Patches, with depths of less than 11m, lie within 2 miles SSE and SSW of Cormorant Rocks.

A light is shown on the SW of the larger Cormorant Rocks. A fog signal is sounded from the same rock. Cormorant Rocks, under normal conditions, are reported to be radar conspicuous at 15 miles, and the light structure at 19 miles.

Cape Whittle to Natashquan Point

8.18 Cape Whittle (50°11'N., 60°07'W.), the SW extremity of Île du Lac, is composed of cliffs of moderate height.

A beacon, with orange daymarks on the E, S, and W faces, is situated on an islet 2.6 miles WSW of Cap Whittle.

The coast between Cape Whittle and the Kegashka River, about 49 miles W, is rocky and rises to steep hills and ridges that are seldom higher than 61m, and slopes gradually to the shore. Numerous islands, islets, rocks, and foul ground fringe this coast and lie up to 6 miles offshore in places. Between the Kegashka River and Natashquan Point, about 14 miles WSW, the coast is low with sandy cliffs about 15m high. The appearance of the coast from about 12 miles off is so little diversified that it is almost impossible to distinguish one part from another. Only when within about 4 miles of the outer rocks does its broken and dangerous character become apparent. The above-

water dangers rise higher toward the mainland. Both islands and mainland are bare of trees, except in the bays or on sandy tracts. In these places a thick growth of spruce covers.

Tides—Currents.—The tidal currents are weak, irregular, and influenced, both in rate and direction, by the wind.

8.19 Baie de Loups (Wolf Bay) (50°14'N., 60°13'W.) lies between the foul ground extending from Cape Whittle and Wolf Island, about 6.5 miles W of the cape. The bay is obstructed by islands and rocks. **Wolf Island** (50°10'N., 60°18'W.), 20m high, is the largest island in the vicinity. Outer Islet (Île du Large) lies about 1 mile S of Wolf Island and is 11m high.

Rocher Cairntorr (50°07'N., 60°18'W.), with a depth of 2.4m and marked close WSW by a lighted buoy, lies about 2 miles S of Outer Islet.

Coacoacho Bay (Baie Coacoachou), obstructed by dangers, lies NW of Wolf Bay. It is the only harbor along this stretch of coast that can accommodate vessels of moderate size, but the approach is made difficult by shoals and rocks. The bay is entered between Milne Point, about 2.8 miles NNW of Wolf Island, and Emery Island, about 1 mile ESE. Anchorage may be taken in Coacoacho Bay, in 14.6m, mud, about 1.5 miles N of **Milne Point** (50°13'N., 60°19'W.).

With strong NE winds, a more sheltered berth may be found farther S.

8.20 Between Coacoacho Bay and the Olomane River, 12 miles W, the coast is bordered by innumerable islands and rocks extending nearly 5 miles offshore. **Île a la Brume** (Fog Island) (50°10'N., 60°30'W.), 7m high and a bird sanctuary, lies about 8 miles WSW of the entrance to Coacoacho Bay and is almost surrounded by a belt of rocks and islets, with foul ground extending 1 mile E and W of the island.

The Olomane River, lying about 12 miles W of Coacoacho Bay, is of considerable size and falls 6.1m into the head of a very shallow bay. The falls are hidden from seaward by islands. Low thickly-wooded sandy cliffs lie on either side of the entrance to the bay.

Île Triples (Treble Island) (50°10'N., 60°42'W.), 10.4m high and marked by a light, lies about 3.3 miles SW of the mouth of the Olomane River. It is one of a group of five islands. La Romaine, a small settlement, is situated at the head of a partly-drying bay W of the Olomane River and about 2.8 miles N of Île Triples.

Three sets of range lights for La Romaine and its anchorage are shown N of Île Triples. The red roof of a large building and a church spire are good landmarks for La Romaine. A light serving as an aid to the anchorage is shown on a small island at the E end of **Île en Dos de Cheval** (50°12'N., 60°40'W.). A lighted buoy is moored close to a 4m shoal lying SW of Île en Dos de Cheval.

Anchorages are available, in 12.2m, sand, about 0.4 mile SE of the S end of Île en Dos de Cheval and, in 16.8m, sand, about 0.5 mile SSE of the same end.

Rochers aux Huards, about 2 miles W of Île Triples, are above water and are the outer rocks on this part of the coast. Many other dangerous rocks and shoals lie near Rochers aux Huards, particularly to the E and NW.

8.21 Baie Washicoutai (Washikuti Bay) is entered between **Pointe Chicoutai** (Cloudberry Point) (50°11'N., 60°57'W.), about 9.5 miles W of Île Triples and the W extremity of Hautsfond Washicoutai (Washikuti Shoals), about 1.8 miles SE. The bay is cluttered with islets, rocks, and ledges on either side; some are scattered across the mouth of the bay. Anchorage may be taken in an inlet in the NE part of Baie Washicoutai, in depths of 7.3 to 12.8m, mud.

The anchorage is reached through a narrow channel with a least depth of 7.3m.

A bay, mostly shoal with islets and rocks, is entered between Pointe Chicoutai and Pointe Musquaro, about 4.5 miles W. Musquaro village, with telegraph service, is situated in the NW part of the bay. A conspicuous red ridge of granite lies about 2 miles W of **Pointe Musquaro** (50°11'N., 61°04'W.) and indicates the mouth of the Riviere Musquaro. **Pointe Curlew** (50°10'N., 61°11'W.) lies about 6 miles W of Pointe Musquaro.

Kegashka Bay indents the coast between Pointe Curlew and Pointe de Kegashka, the S end of Kegashka Island, about 3 miles W. Kegashka Island is separated from a rocky peninsula by a narrow drying channel over which there is a bridge; the peninsula is joined to the mainland a narrow isthmus. Islands, surrounded by foul ground, lie in the center of the bay. Kegashka village is situated on the peninsula on the W shore of the bay on the N part of Kegashka Island.

There is a small wharf and telegraph service. The T-shaped wharf is situated near the NE point of Île de Kegashka. The outer face is 44m long, with a depth of 5.5m alongside.

A fisherman's wharf, 30m long with depths of 2.3m, lies perpendicular to the SW inner end of the public wharf. A slipway and pontoons for seaplanes are situated close W.

A light is shown on **Pointe de Kegashka** (50°10'N., 61°16'W.). Range lights, in line bearing 359.5°, shown on the N shore of Kegashka Bay, lead to the anchorage in the bay.

A lighted bell buoy is moored close W of the range line, about 0.4 mile SE of Pointe de Kegashka. A radio tower, with an elevation of 109m and from which red lights are shown, stands on Kegashka Island.

Anchorage may be taken in Kegashka Bay, off the village, in 12.8m, sand.

The entrance to the Riviera Kegashka lies about 3 miles W of Pointe de Kegashka. The river is suitable only for boats.

8.22 Ruisseau Rock (50°09'N., 61°28'W.), with a depth of 0.6m, lies about 1 mile offshore and about 4.8 miles WSW of the mouth of the Riviere de Kegashka.

The coast between Pointe de Kegashka and a position about 5.5 miles W is composed of low hills interspersed with sandy tracts. The coast then trends regularly WSW about 12 miles to Natashquan Point and consists of sandy beaches and cliffs up to 21m high.

A current setting E, with a maximum velocity of about 1 knot, has been observed at a position about 5 miles S of Natashquan Point. The tidal currents in this area are weak, but with a rising tide, the flow is nearly equalized. Winds may considerably affect both velocity and direction of the flow.

Caution.—The coast between Cape Whittle and Natashquan Point, about 63 miles W, should be given a wide berth at night or in foggy weather since the dangers are steep-to and soundings give no warning. If depths of less than 91m are obtained,

they indicate the vessel is within 5 miles of the outer rocks.

Natashquan Point to La Grande Point

8.23 **Natashquan Point** (Pointe de Natashquan) (50°05'N., 61°44'W.), which is low, is the S end of a remarkable promontory and the termination of the sandy cliffs from the E. A light is shown from the point.

The coast from Natashquan Point to Natashquan Harbor, about 7.5 miles NNW, is low and sandy, with the mouth of the Natashquan River, about 1.3 miles wide, lying between. From Natashquan Harbor the coast trends W about 62 miles to Clearwater Point. It is low, rocky, indented by numerous inlets and bays, and backed by hills and ridges that do not exceed 122m.

The Natashquan River, broad and shallow, enters the sea about 3.5 miles WNW of Natashquan Point. St. Helen Island lies across the river mouth. A 7.3m shoal was reported to lie 0.8 mile SW of the S extremity of the island. A barn is charted on the island. Natashquan village lies about 3.5 miles N of the Natashquan River.

Natashquan Harbor—Berthing Information		
Berth	**Length**	**Depth**
Section 1	80m	4.0m
Section 2	40m	4.5m
Section 3	40m	3.0m

Natashquan Harbor, formed by a number of islets and rocks, is suitable only for small craft with local knowledge. The main and deeper of two channels lies between Île Joncas, located about 0.5 mile W of Natashquan village, and Central Reefs, about 0.2 mile farther NW. This channel is buoyed, with a depth of 6.1m, to the harbor. A public wharf extends from the E side of the harbor.

Depths—Limitations.—A shoal, with a depth of 2.1m, is located 0.3 mile W of the wharf.

Aspect.—Four radio towers, 69m high and showing red lights, stand in position 50°09'N, 61°47'W, about 2 miles N of the Natashquan River mouth. An aeronautical radiobeacon stands near the coast at the town of Natashquan.

A church spire is a good landmark in the village.

A light is shown from the SW end of Île Joncas. Range lights, in line bearing 010° and visible only when in alignment, shown on the mainland about 0.8 mile N of Île Joncas, lead through the entrance to Natashquan Harbor.

Contact Information.—The port operator can be contacted by telephone (1-418-726-3207.

Anchorage.—Anchorage may be taken near the middle of the harbor, in 7.6m, mud and sand, with the summit of Île des Americains, 0.5 mile NW of Île Joncas, bearing 275° at a distance of 0.2 mile.

Caution.—A magnetic disturbance, observed in an area about 5 miles SW of Natashquan Point, extends for 3 miles N and S of 50°N, where magnetic variation ranges from 28° to 30°W.

The vertical clearance of the Natashquan River overpass is 4.5m.

A shoal, with a depth of 4.2m, lies 91m W of the wharf. Another shoal, with a depth of 1.3 m, lies 0.3 mile WSW of the wharf.

There is formation of a current bar where the waters of the gulf meet the waters of Petite Rivière Natashquan; tide rips and a change of coloration in the water occur in this area. The bar is affected by the tide, wind and the flow rate of the river.

8.24 Between Natashquan Harbor and Piashti Bay, about 37.5 miles WNW, the coast consists of low cliffs and is indented by bays and inlets that are difficult to enter. The 18.3m line lies about 2 miles offshore.

The mouth of the shallow and narrow Aguanus River lies about 10.5 miles WNW of Natashquan Harbor. There is a small wharf at Aguanus village, on the E shore of the river mouth. Telegraph service is available at the village. Range lights, visible only when in alignment, are shown from the E entrance point of the river.

Baie Johan-Beetz (50°17'N., 62°46'W.) and Piashti Bay, about 28 miles W of the Aguanus River, adjoin each other and are divided by a peninsula terminating in Point Loizeau. The wharf at Baie Johan-Beetz is closed to navigation and berthing is prohibited.

Baie Johan-Beetz (wharf)

Quetachu Bay, the inner part of Piashti Bay, is entered between **Gull Island** (50°16'N., 62°46'W.) and Point Loizeau, about 1 mile WNW and the S of a group of islands extending from the coast. Rocher Jaune, 1.5m high, lies about 1 mile NNW of Gull Island; a disused wharf is situated about 1 mile N of the island. Saddle Hill, a 127m high conspicuous hill, lies about 4 miles NNE of Rocher Jaune. Saddle Hill and Rocher Jaune, in line bearing 018.5°, leads into Quetachu Bay.

Piashti Bay (50°17'N., 62°48'W.) is entered between Point Loizeau and Pointe Tanguay, about 0.4 mile WNW. The bay is open and the entrance becomes very rough with winds from the S. Two sets of range lights lead into the bay. A microwave tower, 169m high and from which obstruction lights are shown, stands about 1 mile NNE of Pointe Tanguay.

The village of Baie Johan Beetz is situated at the head of the bay and at the mouth of the Piashti River. There is a T-shaped wharf on the W side of the bay, about 43m long at the outer end and about 10.7m wide, with a depth of 4.3m alongside. Two

white oil tanks are situated close WNW of the pier.

The inner sides of the outer face offers good berths for small craft. A slipway for boats is situated S of the river.

Anchorage may be taken in Piashti Bay, in depths of 8.2 to 9.1m.

Caution.—A barge, used by ferries, is anchored close S of the T-shaped wharf. Chains and anchors extend E and S of it, while wire cables obstruct the passage W of the barge and between the barge and the shore.

8.25 The Mingan Islands comprises 27 large and small islands. They lie close to the N shore of the Gulf of St. Lawrence, across from the W half of Anticosti Island at a distance of 15 to 25 miles. Their total length, E to W, is 45 miles. The highest islands do not exceed 91m; most are much lower. For coastal vessels they afford a sheltered inside passage, known as Mingan Channel, along the N shore for a distance of about 25 miles between Les Îles aux Perroquets, at the W entrance, to Île aux Marteau, at the E entrance.

Île Ste-Genevieve (50°15'N., 63°04'W.), the E island of the Mingan Islands, lies about 9.5 miles WSW of Piashti Bay. The island is 61m high at Pointe de l'Est and slopes irregularly to the S. A tower stands on the NE point of the island. Mont Ste Genevieve, an isolated flat-topped hill, is charted on the mainland about 2.5 miles NNW of the NE point of the island.

Île de l'Ancre, a small island, lies about 0.3 mile off the NW side of Île Ste-Genevieve. Île a la Chasse (Hunting Island), close SW of Île Ste-Genevieve, is low and thickly wooded, with the shoreline broken into many coves, and fringed with small islets and rocks on all sides except toward the mainland.

Rochers Bowen, a large area of rocks and shoals, with two rocks drying 0.6m, extends nearly 3 miles SE of the E end of Île Ste-Genevieve. Les Saints are two low and bare rocks lying 1 mile S of the same point.

Havre Ste-Genevieve, between Île Ste-Genevieve and the mainland, and Havre de Betchouane, between Hunting Island and the mainland, are good harbors for moderate-sized vessels. They are easy to access through Chenal des Saints.

8.26 Collins Shoal (50°10'N., 63°04'W.), with a depth of 3.7m, lies about 4 miles S of Île Ste-Geneieve. It is the S danger of a large area of rocks and shoals extending S from the E end of the island.

Anchorage may be taken in Havre Ste-Genevieve, located off the NW side of Île Ste-Genevieve, in a depth of 18m, mud, between the N points of Île Ste-Genevieve and Île de l'Ancre. Sheltered anchorage may also be taken in Havre de Betchouane, situated off the NW side of Hunting Island, in depths of 16 to 31m, mud.

Puffin Bay (50°12'N., 63°15'W.) is entered between Île a la Chase and Île St-Charles, about 2.3 miles W. The bay is open to S winds. Île St-Charles is 61m high, bold, cliffy, and wooded. Anchorage may be taken in Puffin Bay, off the NE end of Île St Charles, in a depth of 12.8m, mud, but is open to the SE.

Trilobite Bay, open to the S, lies between Île St-Charles and the mainland, about 1.5 miles W. Île de la Fausse Passe, on the W side of the bay, is bold and cliffy on its S and E sides. Anchorage, sheltered from all but S winds, may be taken in Trilobite Bay, in depths of 7.3 to 18.3m.

Tidal currents between Natashquan Point and La Grande Pointe are greatly influenced by the wind and are weak. In the vicinity of the Mingan Islands, and up to 3 miles S, there is a constant alternation of the flood and ebb currents in fine and settled weather. However, the currents are greatly influenced by a wind of any strength.

Between Trilobite Bay and La Grande Point, about 2.5 miles W, there are no dangers outside the 20m curve, which lies about 1 mile offshore.

La Grande Pointe to Havre St-Pierre

8.27 La Grande Pointe (50°12'N., 63°27'W.) is a low sandy point with shoals extending about 0.4 mile S; the point is marked by a light shown from a square skeleton tower. Hautefond a l'Eau Claire, with several rocky heads with less than 1.8m, cover an area 1 mile square, centered about 1.5 miles W of the point.

The coast from La Grande Pointe to the Riviere St-Jean trends about 35 miles W in bights that are shoal. Between La Grande Pointe and Île du Havre, about 6.5 miles WNW, the coast is sandy with cliffs about 25.9m high. In the vicinity of **Pointe aux Esquimaux** (50°14'N., 63°37'W.) and to Mingan, about 16 miles WNW, the coast is low. A drying bight lies between Pointe aux Esquimaux and Pointe aux Mores, about 3.5 miles WNW.

Between Mingan and Longue Pointe, about 5.5 miles WSW, and then to the Riviere St-Jean, about 7 miles farther WNW, the coast is low with sandy beaches.

The W part of the Mingan Islands extends in a chain from Île au Marteau, about 3.5 miles W of La Grande Pointe, to Les Îles Aux Perroquets, about 25 miles farther W. The islands are mostly bare and rocky, and do no exceed 92m. The ore-shipping port of Havre St-Pierre and Mingan Harbor, a deep-water port, lie along this coast.

The hills on the mainland coast, between Île Ste-Genevieve and the Riviere St-Jean to the W, rise to 305m about 7 miles inland. The highest point on the mainland in this locality is **Mount St-Jean** (50°28'N., 64°17'W.), about 10 miles N of the mouth of the Riviere St-Jean. It is 434m high, with three distinct summits. With these exceptions, the mainland is low, particularly abreast the E Mingan Islands where the hills are far inland.

Caution is advised in the vicinity of a position about 13 miles S of Clearwater Point due to a magnetic disturbance. A maximum magnetic variation that ranges from 28° to 33°W was found.

8.28 Grosse Île au Marteau (Île au Marteau) (50°13'N., 63°37'W.), 49m high, and Petite Île au Morteau, close to the SW, lie about 4 miles W of La Grande Poine. A light is shown and a fog signal is sounded from the S end of Petite Île au Marteau.

Recife au Marteau extends about 0.8 mile S of Gros Île au Marteau. Another shoal area extends about 0.5 mile S of Petite Île au Marteau.

Île du Havre, 58m high near the NW end, with Île aux Goelands and Île Verte close SE and S, respectively, is separated from Petite Île au Marteau by Chenal Walrus. This channel is about 0.5 mile wide with a least depth of 14.6m. A lighted buoy is moored about 1 mile S of the SW end of Île du Havre.

Reefs extend both N and S of Île Verte. A shoal area lies off

the entire length of the S side of Île du Havre, extending to seaward for 1 mile at both the E and W ends of the island.

Île du Fantome (Île Quin) and Île a Firmin (Île du Fantome), close S, are separated from Île du Havre by a deep channel. This channel is 0.5 to 0.75 miles wide, with depths of 17.3 to 73.1m, and marked on its E side by buoys. A light is shown on the S end of Île a Firmin.

Île a Firmin is surrounded by rocks and reefs. Recif Quin lies off the N end of Île a Firmin and extends about 0.1 mile N and 0.4 mile NW.

Chenal Quin, about 0.4 mile wide at its narrowest navigable breath, lies between Île du Fantome and **Pointe aux Morts** (50°15'N., 63°41'W.), its N entrance point on the mainland, about 0.8 mile N of Île du Fantome. The channel is buoyed on either side of the narrows. The channel has depths between 7 and 9.1m, and has a bottom of rock, gravel, and sand.

Tidal currents are not strong among the Mingan Islands, except in very narrow channels. They are greatly influenced by the winds. In good weather, there is a constant alternation of flood and ebb currents between the islands and the mainland, and also within 2 to 3 miles S of the islands. The W current, influenced by the rising tide, sets stronger than the E current, which is influenced by the falling tide.

Depths in the E part of the Mingan Islands are from 12.8m to 80.5m in the channels that lead between some of the islands and the mainland.

Caution is advised in the vicinity of the Mingan Islands due to magnetic disturbances. There is an abundance of magnetic oxide of iron that the variation was found to vary from 19° to 33°45'W. It has also been reported that a magnetic attraction exists S of the W Mingan Islands, where the deflection of the compass needle ranged from 4°E to 6°W.

Havre St-Pierre (50°14'N., 63°36'W.)

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8.29 Havre St-Pierre, an important fishing center and ore-shipping port, is situated on the SE side of Pointe aux Esquimaux and about 0.5 mile N of Île du Havre. Custom and pratique are obtained at **Sept-Îles** (50°11'N., 66°23'W.). There is a hospital, and regular air service. Coastal vessels call regularly during the navigation season, which is from April to December.

A Canadian Coast Guard seasonal Search and Rescue station, based in Havre-Saint-Pierre, provides services in the area. Requests for assistance should be addressed, at all times, to the Marine Rescue Sub-Centre (MRSC Québec) via a Coast Guard Radio Station through VHF Channel 16 (156.8 MHz) or on 2182 kHz, Digital Selective Calling (DSC), by telephone 1-800-463-4393 or by cellular telephone by dialing *16 which will put them in direct contact with a MCTS Centre. It should be noted that it is not possible for the Canadian Coast Guard to trace the origin of calls for those using their cellular telephone and that certain areas do not have cellular coverage.

Tides—Currents.—Springs rise 2.1m and neaps 1.3m. The flood tidal current usually sets to the W, and the ebb to the E, with a velocity of about 1 knot. The currents are greatly affected by the winds, and under some conditions, may attain a velocity of 2 knots.

Depths—Limitations.—Chenal Walrus, W of Petit Ileau Marteau, is about 0.5 mile wide with a least depth of 14.6m.

A deep channel, about 0.5 to 0.8 mile wide, lies between Île du Havre and Île du Fantome, and Île a Firmin to the W. Depths in this channel range from 17.3 to 73.1m.

Chenal Quin, with a navigable width of about 0.4 mile between reefs on each side, lies between Île a Fantome and Pointe aux Morts to the N. There are depths between 7m and 9.1m in the channel.

A government wharf is situated at Pointe aux Esquimaux. The E portion is 138m long, with a depth of 5.6m alongside. The W portion is 39m long, with a depth of 1.5m alongside.

There is an accumulation of shells along the public wharf; depths may be less than charted.

Aspect.—Range lights, in line bearing 338.5°, for Chenal Walrus are shown on the mainland about 0.5 mile ENE of Point aux Esquimaux.

Range lights, in line bearing 010°, for the deep channel between Île du Havre, Île du Fantome, and Île a Fermin are shown about 2.3 miles WNW of Pointe aux Esquimaux on the W side of a drying bay.

A light is shown near the E end of the wharf at Havre St-Pierre.

A belfry stands about 0.8 mile ENE of Pointe aux Esquimaux.

A church spire, close NE of Pointe aux Esquimaux, is a good landmark with a chimney and a dome close E of the same point.

Oil tanks stand about 0.3 mile N of Pointe aux Esquimaux, and a water tank stands close NNW of the oil tanks.

A radio tower, with an elevation of 204m and from which obstruction lights are shown, stands about 1.3 miles NNE of Pointe aux Morts.

Pilotage.—Pilotage is not compulsory but there is a pilot available when required; arrangements are made through the shipping agent.

Havre St-Pierre—Berthing Information					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Beam	
Rio Tinto Fer et Titane					
Ore Berth	42m	9.2m	229m	32.2m	Berthing length of 252m (including dolphins).
Port de Havre St.-Pierre					
Town Quay (Public Wharf)	108m	9.0m	300m	28.1m	Berthing length of 171m (including dolphins).

Contact Information.—See the table titled **Havre St-Pierre—Contact Information**.

Havre St-Pierre—Contact Information	
Port Authority	
Telephone	1-418-538-1520
Facsimile	1-418-538-1545

Anchorage.—Anchorage space within this secure harbor is about 1.5 miles long, E and W, and lies between Pointe aux Esquimaux and Île du Havre. The average width is about 0.4 mile, with depths from 11 to 27.4m sand. It is advisable to anchor within the line joining the N and NE points of Île du Havre in not more than 20.1m to obtain maximum shelter.

Directions.—Vessels approaching from the E, from a position on the coastal track about 5.75 miles S of La Grande Pointe, may steer 314° for about 6 miles to a position about 1.5 miles S of Petit Île au Marteau.

Vessels approaching from the W, from a position on the coastal track about 5.8 miles S of the E extremity of Grande Île, may steer 055° for a distance of 8.5 miles to a position about 1.3 miles SSE of Île a Firmin. The latter position intersects the range alignment of the channel between Île du Havre, Île du Fantome, and Île a Firmin.

Havre St-Pierre to Mingan Harbor

8.30 The coast between Pointe aux Morts and the Mingan River, about 12 miles WNW, is low. A foul bight indents the coast between Pointe aux Morts and **Paradis Point** (50°18'N., 63°51'W.), about 6.8 miles WNW. Moutange Island and Moniac Island lie about 1.3 miles SE and 3.5 miles ESE, respectively, of Paradis Point.

Banc Moniac, with a least depth of 4.1m, lies about 0.8 mile SSW of Moniac Island. Banc de la Romaine, with a least depth of 3.7m, is 0.8 mile S of Moutange Island. Cayes a Coohon, small and about 1.2m high, lies about 3.3 miles W of Moutange Island, on the N side of Mingan Channel, and has shoal water extending about 0.1 mile S of it.

Île a Samuel, Île a la Proie, and La Grande Île, three of the largest of the Mingan Islands, lie on the S side of Mingan Channel and about 3.5 miles SE to SW of Moutange Island. **Île a Samuel** (Île Niapisca) (50°13'N., 63°45'W.), about 1.5 miles W of Île a Firmin, rises in three principal hills to a height of 44m and is partly wooded. Reefs of flat limestone extend S and SE of the island. Between the SE and SW points of the island, a group of rocks, remarkably sculptured by wind and waves, stands on the limestone flats above the HW line. A beacon (50°12'N., 63°45'W.), with orange daymarks facing S and E, is a useful mark on the S side of Île a Samuel.

Île a la Proie, separated from Île a Samuel by a narrow channel, lies about 0.5 mile W. It rises to a height of 52m. **Rocher a la Proie** (50°14'N., 63°50'W.), a small patch with a least depth of 2.2m, lies about 0.5 mile NNE of the NW end of Île a la Proie. Anse ala Proie, on the N side of the island, is a small but deep anchorage for small vessels, in 16.5 to 18.3m. In entering, keep closer to the W side of the cove and anchor near the middle of the cove.

La Grand Île, separated from Île a la Proie by Chenal a la Proie, lies about 0.5 mile W. It rises to a height of 70m and is thickly wooded.

Niapisca Channel, which separates Île Niapisca and Île a Firmin, is about 1 mile wide at its narrowest part between the reefs that border the two islands. Depths range from 32.9 to 98.8m. Tidal currents in the channel set N on the flood and S with the ebb, but are greatly affected by the wind as to velocity and direction.

The narrow channel that separates Île a Samuel and Île a la Proie is not a safe navigable passage because of shoals and reefs.

Chenal a la Proieis, clear, with a navigable width of 0.3 mile and charted depths of 16.5 to 73.2m. The flood current sets N, while the ebb current sets S. The velocity of both currents is about 1 knot.

Petite Île aux Bouleaux, with Île aux Bouleaux close NNW, is separated from La Grande Île by La Grand Chenal. This channel is about 1.3 miles wide, with charted depths of 20.1 to 133.5m, and is a good approach to Mingan Harbor.

Petite Île aux Bouleaux lies about 2 miles W of La Grande Île; both islands lie on the S side of Mingan Channel. Petite Île aux Bouleaux is 91m high, thickly wooded, and steep-to on its E side. There is a remarkable flowerpot rock on the SW end of Petite Île aux Bouleux. The low W point of Île aux Bouleaux extends in a curve to the S, terminating in Rocher Hulk, conspicuous and resembling a hulk.

Recif du Mileau, lying about 1 mile SSE of Petite Île aux Bouleaux, is 0.5 mile long N and S, and about 0.4 mile wide. The central part of the reef dries. Chenal de Recif du Milieu, which separates Petite Île aux Bouleaux from Recif du Mileau, has depths of 21.9 to 64m. The flood current in the channel sets S.

Mingan Harbor

8.31 **Mingan Harbor** (50°17'N., 64°01'W.) lies between Île du Havre de Mingan and the low sandy shore of the mainland. The mainland recedes at the E end of the harbor at the mouth of the Mingan River, with extensive drying flats lying about 0.8 mile from the river mouth. The E entrance to the harbor, between these flats and Île du Havre de Mingan, is restricted to a width of about 0.2 mile. The W entrance is about 0.2 mile wide. Both entrances are fairly deep.

Coastal vessels call at Mingan Harbor during the navigation season (early May to December). There is also air and telegraph service.

Mingan village is situated on the mainland, about 0.5 mile NE of the sandy point on the N side of the W entrance to the harbor.

Tides—Currents.—Springs rise 2.3m; neaps rise 1.5m. In the harbor, especially through the narrow W entrance, the ebb current sets strongly to the E and attains a velocity of 2 knots with W winds.

Depths—Limitations.—The approach channels between the islands are wide and deep. The E entrance channel has depths of 13.3 to 45.7m; the W entrance channel has depths of 6.9 to 34.8m.

The harbor, between Île du Havre de Mingan and the mainland to the N, has depths of 7.3 to 20.1m.

A L-shaped wharf, 154m in length, with the face 81m in

length has an alongside depth of 6.1m alongside the outside face, and 2.9m along the inside face.

Caution.—Foul ground extends about 0.3 mile from the W end of Île du Havre de Mingan, and shoal water, with depths of 8.5 to 9.8m, extends about 0.8 mile E from the E end of the island. Shoal water and foul ground extend off the entire length of the S side of the island.

Wacouta Rock (50°17'N., 64°00'W.), with a depth of 2.7m, lies on the N side of Mingan Channel, about 0.8 miles SW of the E end of Île du Havre Mingan. Another rock, with a depth of 5.5m, lies about 0.4 mile farther SW.

There is a temporary L-shaped floating structure at Mingan, which is used to fulfill the main fuctions of the wharf. In this vicinity, there is a launching ramp and a landing pier with floating docks. A warehouse is situated close to the pier.

Aspect.—Île du Havre de Mingan, close to the mainland and on the N side of Mingan Channel, lies about 1.8 miles N of Île aux Bouleaux. The island forms the S side of Mingan Harbor, and is about 31m high, wooded, and precipitous.

A church spire and the buildings of the Hudson Bay Company are good landmarks for Mingan Harbor.

Range lights for the E entrance to Mingan Harbor are shown, in line bearing 288°, on the mainland near the W end of the village. The least depth on this range line is 12.5m.

Range lights for the W entrance to the harbor are shown, in line bearing 066°, on the mainland E of the village. The least depth on this range line is 6.4m.

A lighted buoy, equipped with a radar reflector, marking the N side of the E entrance to Mingan Harbor, is moored on the S edge of the shoal water off the mouth of the Mingan River, about 1.5 miles ESE of the church spire at the village.

Anchorage.—The anchorage space within Mingan Harbor is about 1 mile long and 0.25 mile wide, with depths of 13 to 22m over fine sand. The anchorage area is sheltered.

Directions.—A vessel approaching the harbor from the E from a position on the coastal track, about 5 miles SSW of the S extremity of La Grande Île, may steer a course of 355° for about 10 miles to a position about 1 mile E of Île du Havre de Mingan; the E approach range is then intersected and the vessel should proceed through the E entrance on the 288° range to the middle of the harbor.

A vessel approaching from the W, from a position about 3.25 miles SSW of the Riviere St. Jean, may steer a course of 090° for about 7 miles to a position about 0.8 mile N of the Îles aux Perroquet; the W entrance range is then intersected and may be steered on 066° through the W entrance to the middle of the harbor.

Mingan Harbor to the Riviere St-Jean

8.32 The coast from Mingan Harbor to **La Longue Pointe** (50°15'N., 64°09'W.), a low rounded point about 5.5 miles WSW, curves in an arc and is low and sandy. Longue-Pointe, a village, is situated close to the beach, about 1 mile NE of La Longue Pointe. Tide rips form W of La Longue Pointe, where the point diverts the W setting current to the SW.

A church spire, about 0.8 miles NE of La Longue Pointe, is reported to be a good landmark. The building of an airport situated close N of La Longue Pointe are visible from seaward.

Île Nue de Mingan (50°13'N., 64°08'W.), about 30.5m high and wooded, lies on the S side of Mingan Channel, about 2.3 miles SSE of La Longue Point. The island is separated from Île aux Bouleaux and Petite Île aux Bouleaux by Chenal aux Bouleaux. The channel is about 3 miles wide, has depths greater than 87.8m, and is clear of dangers.

Banc de Mingan, a rocky shoal with a least depth of 14.6m and a heavy swell over it at times, lies about 3 miles S of the S end of Île Nue de Mingan.

The Îles aux Perroquets, the W island of the Mingan Islands, lie on the S side of Mingan Channel and between 2 and 3 miles W of Île Nue de Mingan. The islands consist of four low barren islets. The NE islet is the largest and highest of the islets, and is cliffy with a flat top.

A light is shown from the NW islet. Under normal conditions, the islets are usually radar conspicuous at a distance of about 15 miles.

The islets are separated from Île Nue de Mingan by Chenal aux Perroquets. The channel is about 1.3 miles wide and 25.6 to 73.2m deep through the center. A small rocky shoal, with a depth of 6.8m, lies about 1.5 miles SW of the NW islet of the Îles aux Perroquets.

The coast from La Longue Pointe to the Riviere St-Jean, about 7 miles WNW, is low, with a broad beach of fine sand. Depths of little as 2.7m extend up to 1 mile off the beach.

Caution.—Immediately W of La Longue Pointe, rips form on the flood tide, where the point diverts the W current to the SW.

Anticosti Island (Île d'Anticosti)—North Coast

8.33 **Pointe Heath** (49°05'N., 61°42'W.), previously described in paragraph 7.46, is the SE extremity of Anticosti Island.

Anticosti Island (Île d'Anticosti) divides the mouth of the St. Lawrence River into two channels that flow into the Gulf of St. Lawrence (Golfe Saint-Laurent). Jacques Cartier Passage (Detroit de Jacques-Cartier) flows between the island and the N shore of the mainland. Gaspe Passage (Detroit d'Honguedo) flows between the island and the Gaspe coast to the S.

Anticosti Island is about 125 miles long and over 30 miles wide at it widest part. From Pointe Heath, the coast trends about 17.5 miles NNW to Cap de la Table. Between Cap de la Table and Falaise de Puyjalon (DePuyjalon Cliff), about 58 miles WNW, the coast is generally bold with white cliffs. From Falaise de Puyjalon to Cap de Rabast, about 39 miles WNW, and then to Pointe de l'Ouest, about 15.5 miles farther WSW, the coast trends regularly.

There are no ports of commercial importance on the N coast of Anticosti Island.

8.34 Jacques Cartier Passage (Detroit de Jacques-Cartier) lies between the N coast of Anticosti Island and the Mingan Islands to the N. It offers passage for vessels bound for the St. Lawrence River from the Strait of Belle Isle. The route is 17 miles shorter than that S of Anticosti Island, and the predominant E set of the Gaspe Current is avoided. The current in Jacques Cartier Passage sets W longer than it does E.

Jacques Cartier Passage has a maximum width of 44.5 miles between **Natashquan Point** (50°05'N., 61°44'W.) and Cap de

la Table to the S. Its narrowest width is about 14.8 miles between Mingan Island and **Cap de Rabast** (49°57'N., 64°09'W.).

Winds—Weather.—The winds between the N shore of the Gulf of St. Lawrence and Anticosti Island blow in a general E and W direction following the contour of the land. Easterly winds prevail in the spring and are frequented with cold, wet, and foggy weather; westerly winds are accompanied by dry and clear weather. These winds usually blow strong for three or four days in succession.

Occasionally, W winds converge from both sides of Anticosti Island towards Pointe Heath and in the area between the junction of the winds and land, generally 5 to 8 miles E of the island, the winds are light and variable.

Fog is most frequent off the E part of Anticosti Island in the early part of the summer and seldom fails to accompany an E wind of any strength. With a wind between the S and W, there is seldom any fog above the island.

Tides—Currents.—The current off the E end of Anticosti Island revolves counterclockwise with the tide.

Between Pointe de l'Est and Cap de la Table the set is usually S and SE, with an occasional weak set NE close to the shore. There is generally a very weak offshore current in either direction between Cap de la Table and Cap de Rabast. Off the coast between Cap de Rabast and Pointe de l'Ouest, the flood current sets W and is stronger than the ebb current setting to the E.

Caution.—A depth of 18.3m lies about 4.5 miles E of **Pointe Heath** (49°05'N., 61°42'W.) on a bank extending about 7 miles to the 20m curve. There are depths of 23.8 to 34.7m on this bank.

8.35 Pointe de l'Est (49°08'N., 61°40'W.), about 15m high, lies about 3.5 miles NNE of Pointe Heath. It is a long rounded projection and is densely wooded. The N side of the point is steep to, but a ledge, dry at LW, extends from the SE tip. A conspicuous patch of sand on the face of a steep slope is noticeable close S of this ledge, and the cliff W of this patch rises to a height of 27m, falling again to about 14m in a projection that forms the N side of Baie du Naufrage, a shallow bight suitable only for fishing vessels. The stranded wreck of a steel freighter was reported to lie close N of Pointe de l'Est.

Cap Sandtop (49°12'N., 61°44'W.), a noticeable headland rising steeply to a height of 37m and composed of marl and gravel that resembles white sand from seaward, lies about 4.8 miles NNW of Pointe de l'Est. Gullcliff Bay is a small bight close NW of Pointe de l'Est, which offers anchorage, in depths of 18.3 to 21.9m, sand and rock, with W winds.

Pointe du Renard (49°19'N., 61°50'W.) lies about 7.5 miles NW of Cap Sandtop. Baie du Renard is entered about 1.5 miles S of Pointe du Renard. There is a settlement, with telephone service situated on the S shore of the bay, and a lobster factory stands at the head of the bay. Anchorage can be taken by small craft, in depths of 4 to 4.9m, in the middle of the bay.

The anchorage is sheltered, some protection being given by the shoals lying off the bay. Local knowledge is required.

8.36 Cap de la Table (49°21'N., 61°54'W.), about 3 miles NW of Pointe du Renard, rises to Table Hill, a densely-wooded summit, 79m high. A limestone ledge extends 0.2 mile from the head. A light is shown from the point. Recently, it was proposed to permanently discontinue the operation of the light.

Prinsta Bay (49°21'N., 61°57'W.) lies between Cap de la Table and Cap James (Pointe Prinsta), about 3.8 miles WNW. Anchorage can be taken at the head of the bay, in 9 to 16m, clay or mud, protected from all winds other than N.

Broom Bay (49°26'N., 62°14'W.) lies about 10.5 miles WNW of Prinsta Bay. Beacons, in line bearing 205°, lead into the head of the bay.

Baie Natiscotec, Baie de la Tour, and Baie de l'Ours indent the coast, SE to NW, between Cap Robert and Cap de l'Ours, about 6 miles NW. These three bays form the best roadstead on the N coast of Anticosti Island.

Baie de l'Ours, between **Cap Roberts** (49°29'N., 62°20'W.) and Cape de l'Ours, about 6 miles NW, has depths of 7.3 to 25.6m. This bay is sub-divided into three other bays, with the best anchorage in Baie Natiscotec, the SE bay, in 23.8m, brown mud, sheltered from all but N and NE winds.

Cap Observation (49°40'N., 62°42'W.), a bold high headland, lies about 12 miles NW of Cap de l'Ours. Anchorage may be taken in the lee of Cape Observation during W winds and good weather.

8.37 Pointe Carleton (49°44'N., 62°57'W.), marked by a light, lies about 10.5 miles farther WNW. The coast between Cape Observation and Point Carleton is irregular and cliffy. Anchorage may be taken in a bight SE of Pointe Carleton, in 7.3m, sand, with fair shelter from W winds.

Pointe Carleton is reported to be radar conspicuous at a distance of 20 miles and identifiable with charted features from the shape and character of the echo at a distance of 14 miles.

The coast between Pointe Carleton and Pointe au Naufrage, 18 miles WNW, is indented by two shallow bays close W of Pointe Carleton. Falaise de Puyjalon, about 141m high, white, and conspicuous, lies about 10.5 miles WNW of Pointe Carleton. There are no other high cliffs near it; it is visible for 20 miles.

Pointe au Naufrage (Wreck Point) (49°48'N., 63°22'W.), marked by a light, lies about 10.5 miles farther WNW. The coast between Cape Observation and Point Carleton is irregular and cliffy. Anchorage may be taken in a bight SE of Pointe Carleton, in 7.3m, sand, with fair shelter from W winds.

Pointe des Haute Falaises (49°53'N., 63°50'W.), about 122m high, lies about 17.5 miles WNW of Pointe au Naufrege and is noticeable for the sloping heap of fallen rock fragments in front of it.

8.38 Cap de Rabast (49°57'N., 64°09'W.), wooded and moderately high, lies about 13 miles WNW of Pointe des Haute Falaises. A light is situated on the point. The light only operates at night. Under normal conditions, the cape is reported to be radar conspicuous at 14 miles.

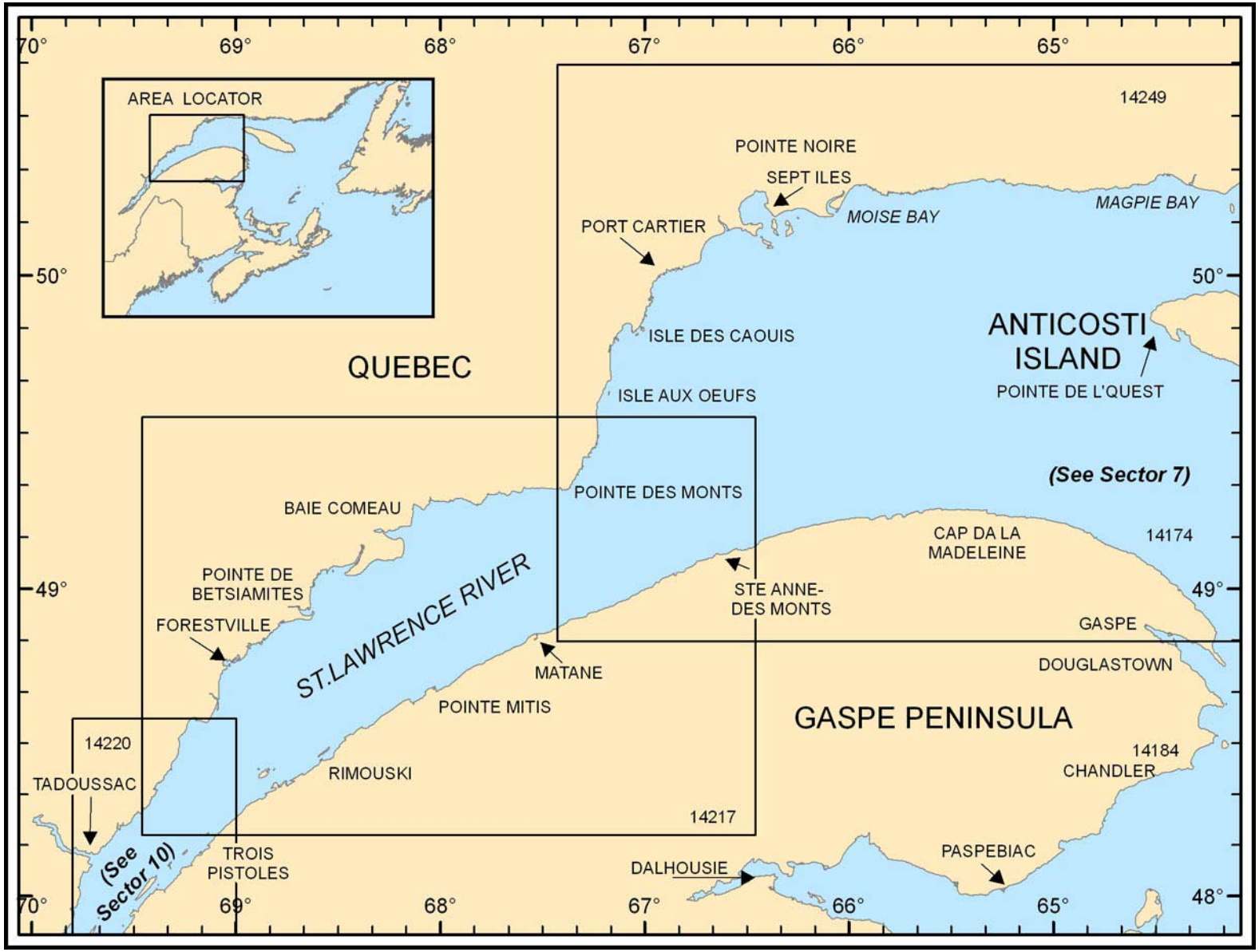
The coast between Cap de Rabast and **Cap aux Anglais** (49°54'N., 64°30'W.), about 13.5 miles WSW, and to Pointe de l'Ouest, about 2.5 miles farther SSW, is low and backed by hills. The settlement of Baie Ste-Claire is situated close S of Cap aux Anglais.

Pointe de l'Ouest (49°52'N., 64°31'W.) is low and wooded. A marine telegraph, signal, and ice-reporting station is maintained here. A light, from which a fog signal is sounded, is

shown from the point. A conspicuous lattice tower, 90m high and marked by obstruction lights, stands about 3 miles E of Point de l'Ouest.

Banc Parent (49°53'N., 64°53'W.), with its center about 14 miles W of Pointe de l'Ouest, is about 10 miles square with depths ranging from 45.7 to 91.4m.

Caution is advised off the coast between Cap de Rabast and Pointe de l'Ouest. Depths are moderate for over 1 mile outside the coastal reefs, but the coast should not be approached to depths of less than 45m.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **9** — CHART INFORMATION

SECTOR 9

THE ST. LAWRENCE RIVER—MOUTH AND LOWER REACHES

Plan.—This sector describes the mouth of the St. Lawrence River between the Riviere St. Jean and Cap de la Madeleine on the N and S shores, and Pointe des Monts to the W, and then SW along the lower reaches of the St. Lawrence to the Riviere Saguenay. The descriptive sequence is W and then SW along both shores.

General Remarks

9.1 The mouth of the St. Lawrence River, close W of Anticosti Island, is about 70 miles wide and gradually decreases to a width of 24 miles between Pointe des Monts and Cap des Mechins, about 110 miles to the W. Depths throughout the mouth of the river are ample with most of the dangers being found close offshore.

The N coast of the river mouth first extends W for about 78 miles to Seven Islands Bay and then SSW for 66.5 miles to Pointe des Monts. This coast is rocky and of moderate elevation, being backed by higher hills farther inland. Numerous rivers intersect the coast and constitute good landmarks. The Seven Islands, which lie off the entrance to Seven Islands Bay, are the most important of several islands which stand off this coast.

The ports of Pointe-Noit, Sept-Îles, Shelter Bay, and Riviere Pentecote are commercially important to shipping.

The S shore of the mouth of the St. Lawrence River between Cap de la Madeleine and Cap Chat, about 60 miles to the W, is generally rocky, cliffy, and backed by hills, some of which are over 600m high.

Winds—Weather.—East winds prevail in the spring and frequently blow for several days in succession. West winds become more frequent toward summer and SW winds prevail in the summer. Light S winds blow occasionally, but N winds are not common during the summer. Steady NW winds are not frequent before September. In October and November, NW winds are frequently violent during heavy squalls accompanied by passing showers of hail and snow. Heavy frost prevails at such times.

Fog is very prevalent in this area during the navigation season and usually accompanies an E wind of any strength or duration and may last for several days. With W or NW winds, fog is generally infrequent and of short duration. Fogs accompanying E or S winds usually clear away rapidly with a shift of the wind to the W or NW.

Ice—The Canadian Ice Service (CIS) Environment Canada conducts a comprehensive ice reconnaissance and data gathering program during the winter months as ice forms in the St. Lawrence River, then moves towards the river estuary and the Gulf of St. Lawrence. Reports are broadcast daily by radio and the internet.

The web site for ice and other environmental information relating to the St. Lawrence River and the Gulf of St. Lawrence is:

Ships navigating independently in the Gulf of St. Lawrence when ice is present, are requested to report their positions and progress to the Eastern Canada Traffic System (ECAREG Canada) at 1200 and 2359 UTC.

St. Lawrence Ice and Environmental Info
http://www.marinfo.gc.ca/en/commercial/index.asp

Tides—Currents.—The current N of a line joining Pointe Ouest or Anticosti Island and Pointe des Monts to the W has been observed to have a slight W or SW set. This current joins the outgoing current in the vicinity of Pointe des Monts and sets along the S shore. The width of the current along the S shore ranges from 2 to 14 miles offshore, decreasing in strength toward the outer edge.

Pilotage.—Pilotage is compulsory in the St. Lawrence River and for all St. Lawrence ports, including the Riviere Saguenay from Les Escoumins. See paragraph 9.28 (Anse aux Basques) for further information.

Regulations.—Vessels must obtain clearance to transit the St. Lawrence Seaway after operating beyond the Exclusive Economic Zone by agreeing to comply with the "Code of Best Practices for Ballast Water Management" of the Shipping Federation of Canada dated September 28, 2000, while operating anywhere within the Great Lakes and the St. Lawrence Seaway. Every other ship entering the St. Lawrence Seaway that operates within the Great Lakes and the St. Lawrence Seaway must agree to comply with the "Voluntary Management Practices to Reduce the Transfer of Aquatic Nuisance Species Within the Great Lakes by U.S. and Canadian Domestic Shipping" of the Lake Carriers Association and Canadian Shipowners Association dated January 26, 2001, while operating anywhere within the Great Lakes and the St. Lawrence Seaway.

A copy of the "Code of Best Practices for Ballast Water Management" and the "Voluntary Management Practices to Reduce the Transfer of Aquatic Nuisance Species Within the Great Lakes by U.S. and Canadian Domestic Shipping" can be found in the Information Section of the St. Lawrence Seaway Handbook, which may be accessed from the following Internet connection:

St. Lawrence Seaway Home Page
http://www.greatlakes-seaway.com

A Vessel Traffic Services Zone has been established in the St. Lawrence River. See paragraph 8.1 for further information.

Caution.—Although the coast is steep-to and free from offlying dangers, the shore bank is very narrow and steep-to. Great caution is necessary at night or in thick weather since vessels are given little warning of the proximity of danger.

The N shore of the St. Lawrence River between Pointe des Monts and the Riviere Saguenay extends about 118 miles to

the SW and is clear of dangers outside the 40m curve, which lies up to 3.5 miles offshore in places. Rugged hills along the shore and close inland rise to heights of almost 304m.

The S shore between Cap Chat and Île Verte extends about 123 miles to the SW and is clear of dangers outside the 40m curve, which extends up to 7.5 miles offshore in places. Several off-lying islands stand SW of Pointe au Pere. The generally rugged shore rises close inland to heights of up to 457m.

North Shore—The Riviere St. Jean to Baie des Sept-Îles

9.2 The **Riviere St. Jean** (50°17'N., 64°20'W.) flows into the St. Lawrence River through an entrance about 240m wide, with clay cliffs on the W side and a sandy point on the E side. An extensive shifting sand bar off the entrance seldom has more than 0.9m. Only small boats can enter the river.

The river is spanned by an overhead cable, with a vertical clearance of 7.6m, 1.5 miles upstream from the entrance.

Magpie Bay (50°18'N., 64°26'W.), with general depths of 9.1 to 18.3m, is entered between the Riviere St. Jean and Magpie Point, a low rocky projection about 8 miles to the W. With offshore winds, good anchorage can be taken, in a depth of 12.8m, but S and W winds raise a heavy sea. A rocky shoal, on which the sea almost breaks at LW, extends close offshore from the W side of Magpie Bay.

Banc Rouge (50°12'N., 64°32'W.), a rocky shoal with a least depth of 7.3m and steep-to, lies 5 miles S of the W entrance point of Magpie Bay.

Caution.—Iron oxide, common along this coast, causes abnormal variation of the magnetic compass. On shore, readings have been obtained ranging from 14° to 29° W. The effect decreases seaward in proportion to depth and distance, and is not effective beyond 5 miles from the shore.

Between Magpie Bay and Moisie Bay, about 60 miles W, the coast consists of rock rising from the sea in steep, sometimes rounded hills, bare or partially wooded. The coast close to the sea rises to 61 to 91m high; 2.5 to 3 miles inland the range of hills is 152 to 213m high. The appearance from seaward is slightly undulating, bold, and unbroken; it is difficult to distinguish individual features when 5 or 6 miles offshore.

There are many rocks, both above and below-water, out to 1 mile from the shore.

9.3 The **Riviere-au-Tonnerre** (50°16'N., 64°47'W.) stands at the mouth of the river of the same name, about 9 miles W of Magpie Point.

The harbor consists of a natural circular basin about 183m in diameter. The entrance channel is about 50m wide, with a depth of 1.3m in places in the channel, and bordered by rocks. Drying rocks and shoals obstruct the harbor. South winds raise a sea, making the approach difficult.

Silting has been reported in the harbor, which can be carried offshore during the spring run off and results in varying depths throughout the year. Depths may be less than charted.

The public wharf on the W side of the harbor is formed in two sections. The N section has a fish plant and is 56m long. Depths alongside both sections vary between 1.4m and 4m. Electrical and water supplies are available. A slipway is located on the N side of the harbor, and a ramp is on the E side.

The **Sheldrake River** (50°16'N., 64°56'W.), which lies about 5.8 miles W of the Riviere-au-Tonnerre, provides shelter to small craft, but can be entered only in good weather. A village stands on the E bank of the river.

9.4 The **Riviere a la Chaloupe** (50°17'N., 65°07'W.), 8 miles W of the Sheldrake River, is available only to boats when there is no surf. Above and below-water rocks lie off the mouth of this river, and rocky islets and shoals lie up to 0.75 mile offshore along the coast up to 2 miles W of the river mouth.

The **Manitou River** (50°18'N., 65°14'W.), about 5 miles W of the Riviere a la Chaloupe, can be identified by two clay cliffs, one close E and the other 1 mile W of the river mouth. Both cliffs are visible for a considerable distance seaward.

In good weather, anchorage can be taken, in a depth of 27.4m, mud, 1.5 miles SW of the river mouth. Small vessels anchor closer in to the W of the river bar. Depths decrease steadily towards the land, and the bottom is of sand and mud.

Recife de la Pointe a la Boucane, with a depth of 4.6m, except for a rock drying 0.9m, lies about 2 miles SW of the mouth of the Manitou River.

Several rivers and small coves lie along the shore between the Manitou River and St. Charles Point, about 22 miles to the W. All of the fringing dangers lie within the 20m curve, which nowhere lies more than 1.5 miles offshore. A drying reef, steep-to on its seaward side, extends about 1 mile S from St. Charles Point.

9.5 **Moisie Bay** (50°15'N., 65°56'W.), entered between St. Charles Point and Moisie Point, about 10 miles WSW, has great depths between the entrance points. With the exception of a 7.3m patch about 2 miles WNW of St. Charles Point, all of the fringing dangers lie within 0.5 mile offshore. The Riviere Moise, with shallow depths, discharges close N of Moisie Point. The river is spanned by an overhead cable and a bridge, with a vertical clearance of 4.7m, about 7 miles upstream.

Anchorage can be taken, in depths of 14.6 to 16.5m, about 0.8 mile SSE of the entrance to the river.

Moisie Shoal is an extensive, triangular shoal, with depth of less than 5.5m, that extends about 1.8 miles S from the coast W of Moisie Point. It is very steep-to, with depths of 45.7m close to its S extremity.

Rocher Moisie, with depths of less than 1.8m, are two rocks about 0.4 mile apart that lie near the S edge of Moisie Shoal. They can generally be seen in good weather, owing to the change in the color of the water. A heavy sea breaks over them. The N point of **Île Manowin** (50°06'N., 66°24'W.), in line bearing 261.5° with the S point of Île Grosse Boule, about 4.5 miles NE, leads 1 mile S of the edge of this shoal.

The village of Moisie stands on Moisie Point.

A cluster of five towers, fitted with red air obstruction lights, is situated 0.5 mile inland and 3 miles W of Moisie Point.

Baie de la Boule (50°12'N., 66°15'W.), the coastal indentation between Moisie Point and Pointe aux Basques, about 11.5 miles to the W, is fronted by the Seven Islands off its W part. Cayes de l'Est, a steep-to group of drying and above-water rocks, lie about 4 miles E of Pointe aux Basques. With the exception of Cayes de l'Est and the foul ground off the E entrance point to this bay, most of the other dangers lie within 1 mile offshore and at Pointe aux Basques, about 230m offshore.

Sept-Îles—Bulk Pier

Mariners should avoid anchoring in Baie de la Boule where there are aquaculture facilities.

North Shore—Sept-Îles

9.6 **Sept-Îles** (50°08'N., 66°21'W.) consist of a group of seven islands fronting the entrance to Baie des Sept-Îles. The peninsula forming the SW side of the bay appears as a seventh island from a distance seaward. The group lies in pairs and are high, rocky, and generally steep-to.

Île Petite Boule and Île Grosse Boule, 132m and 210m high, respectively, the E pair of the group, stand about 2.3 miles ESE of Point aux Basques. Île Grosse Boule is the highest of the Sept-Îles. The passage between Île Petite Boule and Île Grosse Boule should not be attempted. Schooners find some shelter from W winds by anchoring off the NE side of Île Petite Boule, and small craft shelter from S and E winds off the NW side of Île Grosse Boule.

Île Petite Basque and Île Grande Basque, the middle pair of the Sept-Îles, lie about 0.5 mile S of Pointe aux Basques. The passage between the two islands has a least depth of 3m and strong currents. Chenal de l'Est, the deep passage between the two islands and Pointe aux Basques, has the drying Recif du Basque (Basque Reef) in mid-channel.

Île Manowin and Île du Corossol, the S pair of the Sept Îles group, lie about 1.5 miles SE of Pointe a la Chasse, the S extremity of the peninsula forming the SW side of Baie des Sept-Îles.

Ilets Dequen (50°07'N., 66°26'W.), consisting of an islet and several above and below-water rocks, lie on a shoal about 0.5 mile in extent 1 mile ESE of Pointe a la Chasse. Chenal de l'Ouest, about 0.8 mile wide and deep, lies in between.

Caution.—The E, or ebb tide, is deflected by Pointe a la Chasse and sets toward Ilets Dequen.

Chenal de Milieu, 1.5 miles wide and deep, lies between Île Manowin and Île Petite Basque. The passages between the Îles Boule and the Îles Basque, and between the Îles Boule and Cayes de l'Est, are about 1.5 miles wide and deep.

North Shore—Baie des Sept-Îles

9.7 **Baie de Sept-Îles** (50°12'N., 66°28'W.) is entered between Pointe aux Basques and Pointe a la Marmite, almost 3 miles WSW. The latter point is the NE extremity of the peninsula forming the S side of the bay. This bay indents the coast about 6 miles to the NW and is bordered on its W and N sides by extensive sand and mud flats. The port of Sept-Îles stands on the NE shore and Pointe-Noire, the shipping center for Clark City and the Wabush Lake Mines, stands on the S shore.

Pointe aux Basques, under normal weather conditions, has been reported to be a good radar target up to 25 miles.

Tides—Currents.—In the bay, the mean tidal range is about 2.4m.

The tidal currents in the approach channels and within the bay seldom attain 1 knot, but in Chenal de l'Est and Chenal de l'Ouest they attain a rate of 2 knots at springs, or even more in the narrowest part of these channels when influenced by strong winds. Both the flood and ebb are very irregular in direction, being much affected by the position of the Sept Îles.

Aspect.—A conspicuous water tank stands about 1.4 miles NE and a similar tank stands 1 miles N of Pointe aux Basque.

A conspicuous tower marked by obstruction lights stands 1.75 miles NE of the same point. Three chimneys stand about 1 mile NE of Basque Point.

Depths—Dangers.—The approach channels leading into Baie des Sept-Îles are deep and can accommodate large vessels. Chenal de l'Est is divided into two passages by Recif du Basque. The buoyed N passage is about 0.2 mile wide with a least depth of 23m. The S passage is about 0.2 mile wide with a least depth of 16.9m.

The deepest and best approach to Baie des Sept-Îles is through Chenal du Milieu. This channel is 1.5 miles wide and clear to within 90m of the shore except at Pointe a la Maritime, which has a reef extending 0.35 mile from it.

Within the bay there are general depths of 7.3 to 80.5m, with no detached dangers other than the mud and sand flats which lie around the perimeter of the bay.

Caution.—Concrete artificial reefs, with depths of 2.5m, are located at the NE part of the bay.

9.8 Sept-Iles (50°12'N., 66°23'W.) (World Port Index No. 1955), which stands on the SE side of Baie des Sept-Îles, has been developed as a deep-water ore-loading terminal to transship the iron ore from Labrador. The railroad transports the ore from the mine to the wharf; extensive facilities have been installed for handling this cargo. The port is a first port of entry and is open year round.

Sept-Iles—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Iron Ore of Canada (IOC)						
No. 2	270m	18.3m	330m	17.6m	54m	Iron ore. Berthing length of 488m (including dolphins).
No. 4	244m	11.0m	222.5m	—	30m	Mooring and waiting berth. Continuous berthing length of 488m with Berth No. 5.
No. 5	244m	10.0m	225.5m	9.3m	30m	Closed. Continuous berthing length of 488m with Berth No. 4.
Pointe-aux-Basques Terminal						
No. 7	183m	8.5m	—	—	—	Closed. Breakbulk.
Des Petroliers Dock						
No. 8	98m	12.0m	190m	9.8m	32.2m	Clean products and dairy products. Berthing length of 185m (including dolphins).
MGR Blanche Terminal						
No. 14	162m	8.0m	—	—	—	Closed. Breakbulk. Berthing length of 244m (including dolphins).
No. 15	162m	8.0m	—	—	—	Closed. Breakbulk. Berthing length of 244m (including dolphins).
Le Vieux-Quai (Old Dock)						
No. 20	200m	2.0-4.7m	—	—	—	Total berthing length over five faces. The SE face is only 28m long.
Pointe-Noire Terminal						
No. 30	288m	16.0m	295m	16.2m	45m	Clean products, iron ore, mineral ores, and multipurpose. Continuous berthing length of 488m. Total berthing length of 633m (including dolphins).
No. 31	200m	12.0m	289m	8.3m	45m	
Multi-User Dock						
No. 35	400m	20.2m	360m	19.6m	50m	Iron ore.
No. 36	400m	16.0m	—	—	—	Iron ore.
La Relance Terminal						
No. 40	260m	14.0m	229m	13.0m	32.2m	Alumina, coal, limestone, petcoke, ro-ro, and general cargo.

Sept-Iles—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Railcar Ferry Terminal						
No. 41	200m	8.5-11.0m	—	—	—	General cargo, aluminium, aggregate, and pitch. Ro-ro ramp width a width of 11.0m.
Port de Sept-Îles Cruise Terminal						
Cruise Berth	117m	11.0m	345m	10.1m	41m	Cruise vessels. Berthing length of 315m (including dolphins).
STS Transhipment Area						
STS Transhipment Area	—	25.0m	—	—	—	Coal and trans-shipment (STS transfer of liquid bulk and dry bulk only).

Ice.—The ice usually begins to form in the bay around mid-January. The passage of vessels prevents the ice from becoming thicker. With the absence of vessel movement for a prolonged period of time, tugs circulate near facilities to break the ice or prevent its formation. The port is open year-round.

Tides—Currents.—The currents are weak and affected by the tide and prevailing winds. See the chart for details.

Depths—Limitations.—Berth information for Sept-Îles is given in the table titled **Sept-Iles—Berth Information**. Baie des Sept Îles, nearly landlocked, provides a deep water area approximately 3 miles wide. The bottom consists of clay and there are no shoals except for the mud banks which border the shoreline.There are no certified marine facilities in the port for the handling of explosives.

Aspect.—Île du Corossol Light is near the ESE extremity of the island (50°05'N, 66°23'W). Île du Corossol is a migratory bird sanctuary (Environment Canada); access regulations apply to these protected areas. Ilets De Quen Light is on the most western islet (50°07'N, 66°26'W). Pointe à la Chasse Light is on the point. The two lights mark Chenal de l'Ouest. Pointe au Corbeau Light is on the point (50°09'N, 66°25'W). La Grande Basque Light is on the SW point of the island (50°09'N, 66°23'W). Telecommunication towers, one of which is 302m in elevation, marked with lights, are 1.3 miles NNW of Pointe à la Chasse.

Pilotage.—Regulations stipulate that pilotage is compulsory for all vessels, however Canadian vessels of less than 35,000 dwt equipped with a bow thruster are exempt from this regulation. The pilot boarding station is located in position 50°10.30'N 66°23.60'W, upon the Pilot's arrival, the "Combination Ladder" or "Pilot's Ladder" must be in place 4m above sea level on the starboard side of the vessel. Pilots will contact vessel prior to arrival and will notify of any changes to this standard procedure. All vessels may use these services by making prior arrangements with the IOC Marine Services (telephone: 1-418-968 7540).

All vessels berthing at or departing from a dock under the Port Authority of Sept-Îles shall retain the services of a pilot and tug. While maneuvering in port waters, the use of pilots and tugs is compulsory for the following vessels:

1. All vessels with defects related to propulsion or navigation
2. All vessels greater than 250,000 dwt.
3. All tankers greater than 45,000 dwt.

The use of a pilot is compulsory for ships docking, shifting or leaving IOC docks. When docking on arrival, pilots board inside the harbor limits in the region of 50°10'N 66°24'W. Ships normally proceed to anchorage without assistance but this can be arranged upon request. All ships shall provide starboard side accommodation or combination ladder as appropriate for pilot boarding and disembarking. Disembarkation shall be set at about 5m above water. Ladder must be well secured by adequate lashings to rail or deck and all boarding equipment must be in good working condition.

Regulations—Under the Canada Marine Act, vessels maneuvering or otherwise underway in the Port of Sept-Îles and also while at berth or at anchor, are subject to the Canada Marine Act, the Port Authorities Operations Regulations, as well as the document Practices and Procedures. A copy of the regulations and document may be obtained by the Sept-Îles Port Authority.

The regulations stipulate that no vessel shall move in a harbor at a rate of speed that may endanger life or property. Sept-Îles Port Authority has wide powers over vessels in the harbor and may order vessels to move, use tugs, berth or anchor in locations which it designates. Certain restrictions on berthing or anchoring are set forth, along with the requirement for vessels to inform Sept-Îles Port Authority, in advance, of their intention to berth or anchor in the harbor.

Vessels are regulated with respect to cargo-handling operations, including the equipment and lighting employed in these operations. Instructions are also included for signaling and action in the event of accidents, cargo or gear lost overboard and safety requirements. Specific vessel regulations are to be observed for carriage and handling of explosives, dangerous goods, as well as fire prevention on board the vessel.

Docking instructions are, as follows:

1. Vessels are to request docking instructions 8 hours prior to arrival. These instructions are to be given as promptly and concisely as conditions permit. The Docking Master boards in position 50°10.2'N, 66°23.6'W.
2. Vessels should anchor at least 1 mile off the dock to facilitate ship movements in the bay and should not proceed closer than 1 mile from the dock while waiting for the Dock-

ing Master to board. Vessels may be requested to shift anchorage if their position interferes with normal docking approaches.

3. Vessels arriving in ballast to load at No. 2 Dock are requested to present in accordance with the following recommended arrival drafts listed in the table below to ensure safe handling procedures, bearing in mind indicated ship loading rates and shiploader clearances. These drafts are the minimum draft aft with normal trim.

4. Any vessel unable to meet these suggested drafts due to insufficient ballast capacity, anticipated deballasting problems, etc, should state this in the 48-hour ETA message with the estimated deballasting time.

5. Vessels should berth port side-to unless advised otherwise by the IOC Marine Services. It is compulsory to have a net under the gangway and a gangway watch must be kept at all times.

Contact Information.—See the table titled **Sept Îlles—Contact Information**.

Sept Illes—Contact Information	
Port Authority	
VHF	VHF channel 12
Telephone	418-968-1231
Facsimile	418-962-4445
E-mail	portsi@portsi.com
Web site	http://www.portsi.com
Pilots	
Telephone	418-961-1229
Tug and Pilot Operations	
VHF	VHF channel 18A
Harbomaster	
Telephone	418-961-1229

Anchorage.—Anchorage is restricted to the inside of the triangle, in depths of 13 to 32m, in the following positions:

a. 50°11.6'N, 66°25.0'W.
b. 50°13.1'N, 66°29.7'W.
c. 50°10.5'N, 66°29.7'W.

Small vessels may anchor, in a depth of 11m, approximately 0.3 mile nearer the shore, but such vessels should not anchor any closer.

The swell in the anchorage with strong S winds is considerable, but generally not dangerous.

Well-sheltered anchorage, in 24m, soft clay bottom, is available in the SW part of Pointe Noire.

Directions.—In the approaches to Baie des Sept Îles, Archipel des Sept Îles, unlike other islands in the area, are high, steep, rocky, and covered with trees. The six islands in the group are La Petite Boule and La Grosse Boule to the E, Île du Corossol and Île Manowin to the S, and La Grande Basque and La Petite Basque in the middle. The islands' elevations vary between 75m and 210m, with lengths of 1 to 2 miles. La Grosse Boule is the longest and the highest.

Cayes de l'Est, with Îlets De Quen, lies to the W. The peninsula forming the W entrance point of Baie des Sept Îles appears as an island from a distance, and is 225 m in elevation, making it higher than the islands of the group.

A fish farm, marked by private unlighted buoys, is situated in the small bay on the NW side of La Grosse Boule.

Some shoals and banks lie in the approach to the archipelago. A rocky shoal with a depth of 28.8m lies 6.7 miles east of Île du Corossol. Another rocky shoal with a depth of 35m lies 4.8 miles SSE of Ile du Corossol. Banc Ouellet, with a least depth of 41m, and Banc du Ouest are situated 1.5 miles S and 2.8 miles W of Ile du Corossol, respectively.

The main channel to Baie des Sept Îles is through Chenal du Milieu, between La Petite Basque and La Grande Basque to the east, and Ile du Corossol, Ile Manowin and the peninsula forming the west entrance point of the bay. This channel is 1.7 miles wide and clear of dangers 90m offshore except for Pointe à la Marmite, off which a reef extends for 275m. Chenal de l'Est, between La Grande Basque and Pointe aux Basques, is obstructed by Récif du Basque where deep passages of 0.1 and 0.2 mile wide run to the north and south of the reef, respectively; the reef is marked by buoys. Chenal de l'Ouest, 0.7 mile wide, is deep and runs between Ilets De Quen and Pointe à la Chasse, which is the south tip of the peninsula. Rocks, some of them drying, lie 0.1 mile north of Ilets De Quen. The ebb current in this passage sets to the E towards Ilets De Quen.

Caution.—Iron oxide along the coast causes anomalies in magnetic compass readings. Onshore readings vary from 14° to 29° west. The effects decrease to seaward and is not noticeable beyond 5 miles from shore.

A pipeline and two submarine cables extend offshore in the vicinity of Pointe a la Marmite (50°10.0'N., 66°26.0'W.). A marine farm has been established close outside the NW part of the anchorage area.

9.9 Pointe Noire (50°10'N., 66°29'W.) (World Port Index No. 1957)**,** lying on the S side of Baie des Sept-Iles about 2 miles W of Pointe a la Marmite, is a wood pulp and iron ore transshipment terminal.

Depths—Limitations.—A multi-user dock, 400m long and connected to Pointe Noire, is 0.3 mile NE of the point. There are two berths at the dock accommodating "Chinamax" class vessels on the north side and "Capesize" class vessels on the south side. Pointe-Noire Wharf (berths Nos. 30 and 31) is a T-shaped wharf. The clearance at Mean Low Water is 17.1m at the E shiploader (No. 1), and 13.7m at the W shiploader (No. 2).

North Shore—Baie des Sept-Iles to Pointe des Monts

9.10 Pointe a la Chasse (50°08'N., 66°27'W.), the prominent SE extremity that forms the S side of Baie des Sept-Iles, has a conspicuous outcrop of rock, 115.2m high, about 0.4 mile inland. The E side of the point is fairly steep-to, but foul ground lies within 0.2 mile S of the point. A television tower, 302m high and marked by obstruction lights, stands about 1.3 miles NW of Pointe a la Chasse.

From Pointe a la Chasse to Pointe des Monts, about 62 miles SW, the coast is of moderate elevation, the land near the shore

being composed of small, low, partially wooded hills. The high hills generally stand well inland.

Baie Sainte Marguerite (50°07'N., 66°35'W.) lies between Pointe a la Chasse and Pointe Sainte Marguerite, about 12 miles WSW. Les Jambons, a conspicuous round hill 99m high, stands about 0.8 mile N of Pointe Sainte Marguerite. Foul ground extends about 0.5 mile S from this point.

The Riviere Marguerite, which empties into the head of the bay, is fronted by a shifting shallow bar which extends about 0.8 mile offshore. A village stands on the W bank of the river near its mouth.

9.11 Port-Cartier (50°02'N., 66°47'W.) (World Port Index No. 1958), about 2 miles W of Pointe Sainte Margeurite, is an extensive private harbor built by the Quebec Cartier Mining Company for the use of vessels engaged in the iron ore trade. Grain is also shipped from this port. The harbor consists of one basin, 762m long and 137m wide, with wharfage on its N and S sides.

Winds—Weather.—The prevailing winds are northwesterly.

Ice.—The use of icebreakers assistance may be necessary during Winter months. ArcelorMittal report that their port can be accessed all year round. A special air bubble system has been installed for ice control. Vessels should not use their anchors within the harbor because of this.

Tides—Currents.—The average tidal rise is about 2.3m.

Depths—Limitations.—Vessels of 100,000 dwt and over must have a draft not exceeding 10.1m forward and 11.6m aft. The maximum vessel length that can be accepted is 304m.

The approach channel was dredged to a depth of 16.6m over a width of 120m. The entrance leading into the harbor basin is reduced to a width of about 90m.

For berthing information, see table titled **Port Cartier—Berth Information.**

Aspect.—A conspicuous water tower stands near the W corner of the basin. A radio tower, from which obstruction lights are shown, stands about 0.1 mile N of the E end of the harbor. A conspicuous grain elevator, with eight grain silos alongside, stands on the S side of the basin. A prominent building, illuminated at night, stands about 2.8 miles W of the harbor.

Range lights, each visible only when in alignment lead into the main basin and to the ore loading berth 1.25 miles WSW of the main basin. The alignment 016.5° of these lights indicates the center line of the entrance channel passing ESE of 2 circular caissons on the W side of the entrance.

Pilotage.—Pilotage is compulsory for vessels. Pilots board at position 50°00.3'N, 66°46.8'W. The vessel's ETA should be reported 72 hours, 48 hours, and 24 hours prior to arrival. Changes of more than 1 hour should be reported immediately.

Regulations.—Vessels under loa 275m may berth throughout 24 hours, vessels over loa 275m berth in daylight only. Dry bulk vessels of 100,000 dwt and over should not exceed maximum arrival draft, 10.1m fwd and 11.6m aft. The maximum arrival draft for tankers is 12.8m (or deeper if agreed by port). The use of anchors in the harbor is prohibited due to an air bubble system on the bottom for ice control.

The faces of all berths are fitted with rubber tire fenders. Mooring bollards are positioned 23m apart at Berth 1, Berth 2 and Berth 3. Hooks are at every pier on Berth 4. All bollards, except those at Berth 1 and Berth 2, are 1.2m in diameter and all mooring warps and wires should have eyes at least 2.4m in diameter. Arcelor Mittal Mines messenger lines should be used at all times.

Vessels are required to arrive alongside the loading berth with hatches open and gangway ready. On completion of loading, vessels are required to vacate the loading berth within 1 hour. If additional time is required alongside the loading berth application for an extension must be made at the time of docking. Most vessels requiring additional dock time will be ordered to a lay-by berth, if available, or to anchor, at their own expense.

Vessel Traffic Service.—Port Cartier is covered by the Eastern Canada Traffic System (ECAREG). This system applies to all vessels of 500 gt and greater; any vessel carrying cargo comprised of a pollutant; any vessel carrying a cargo comprised of explosives, radioactive material of other dangerous goods; any vessel towing another vessel that contains any cargo above.

Messages and reports requested by the Eastern Canada Traffic System shall be addressed to ECAREG CANADA and dispatched through the nearest Canadian Coast Guard Radio Station free of charge to the vessel.

Traffic clearance permission is required before the vessel:

1. Enters the waters designated as the Eastern Canada Traffic Zone from seaward.
2. Departs from any berth within the Eastern Canada Traffic Zone, other than in the case of a local port movement between berths.
3. Proceeds after being stranded or involved in a collision within the Eastern Canada Traffic Zone.
4. Proceeds after sustaining any defect to the vessels, its equipment or machinery.

Havre de Port-Cartier—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Arcelor Mittal Mines						
No. 1	305m	15.2m	303m	16.4m	53.0m	Petroleum products, coal, and iron ore. Continuous berthing length of 750m.
No. 4	305m	15.2m	303m	16.4m	53.0m	
No. 5	140m	—	—	—	—	
No. 6	—	—	226.1m	—	32.2m	Berthing length of 250m (including dolphins).

Havre de Port-Cartier—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Silos Port Cartier						
No. 2	220m	15.2m	292m	16.4m	45.0m	Petroleum products, grain and breakbulk. Continuous berthing length of 440m.
No. 3	220m	15.2m	292m	16.4m	45.0m	
Town Dock						
Pier	165m	11.6m	180m	—	28.2m	Closed. Project materials and wood pulp.

Clearance should be obtained for:

1. A vessel approaching from seaward; 96 hours before the vessel is due to enter the zone.
2. A vessel of less than 50,000 gt when departing a berth within the Eastern Canada Traffic Zone, not more than 2 hours or less than 1 hour before the vessel is due to leave the berth.
3. A vessel of 50,000 gt and over when departing a berth within the Eastern Canada Traffic Zone, not less than 4 hours before the vessel is due to leave the berth.

Traffic clearance for a vessel to depart a berth within the zone is valid for 4 hours from the time stated for the vessels departure. A report stating that the vessel has left the berth shall, however, be made to ECAREG CANADA as soon as the vessel gets underway. If the vessel has not departed the berth during the 4 hour validity period, the Traffic Clearance is suspended and requires renewal for a revised time of departure.

Vessels may request ice information and ice routing from ECAREG CANADA. Position reports should include name of vessel and location and be made, as follows:

1. Crossing the 110°W meridian of longitude in the Northern Area of the Zone on entry into, or departure from, the Zone.
2. Crossing the 66°W meridian of longitude in the St Lawrence River on entry into, or departure from, the Zone;.
3. Crossing the 60°N parallel of latitude in the Labrador Sea, whether proceeding towards, or away from, the Zone.
4. Passing between Cape Ray and Cape North while entering or leaving the Gulf of St Lawrence.
5. Passing Belle Isle while entering or leaving the Strait of Belle Isle.
6. Arriving at any destination within the Zone.

The St. Lawrence Waterway traffic zone extends from the meridian of 66°W to Montreal. In general, the regulations state that a vessel must report to the Marine Traffic Regulator by contacting Channel Escoumins on VHF channel 14 before entering Zone 1 (covering Port Cartier). Vessels have to maintain a continuous radio watch on VHF channel 14, except when alongside. Authorization to communicate on another channel has to be requested from Channel Escoumins, unless the vessel is equipped with two radios.

Contact Information.—See the table titled **Port Cartier—Contact Information**.

Anchorage.—Fair weather anchorage can be taken at one of seven designated anchor berths, in depths of 20.1 to 29.3m, between 1.5 miles ESE and 2.7 miles SW of the harbor entrance, good holding ground, sand and mud. Small vessels can anchor in the vicinity of Grand Cawee Island. Large vessels anchor in Baie des Sept-Iles. Clearance must be obtained from Channel Escoumins to move within the anchorages.

Port Cartier—Contact Information	
Port Authority	
Telephone	418-766-2000 (extension 2485)
Facsimile	418-768-2344
E-mail	port@arcelormittal.com
Web site	http://www.arcelormittal.com

Anchorage Berths		
Position	Latitude	Longitude
A	50°00.6'N	66°46.4'W
B	50°01.1'N	66°45.4'W
D	50°00.3'N	66°45.4'W
E	50°00.2'N	66.46.4'W
F	49°59.6'N	66°48.4'W
G	49°59.4'N	66°49.3'W

Directions.—The outer end of the approach channel is marked by Port Cartier lighted buoy, equipped with a radar reflector, is moored approximately 1.6 miles SSW of the harbor entrance.

Caution.—An air bubble system has been installed for ice control; vessels should not use their anchors within the harbor. It is expected that the port will remain open year round.

9.12 Baie de l'Abri (50°01'N., 66°52'W.) lies at the mouth of the Riviere aux Rochers. A wharf at the mouth of the river was formerly used to load pulpwood but is now in a poor state of repair and is no longer used.

Ile du Quai is joined to Ile Patterson by a bridge with a vertical clearance of 3.2m.

Between Baie de l'Abriand Iles des Caouis, about 12 miles SSW, the coast is bordered by foul ground and islets that extend up to 1 mile offshore.

The **Iles des Caouis** (49°50'N., 67°01'W.), a group of islands and rocks, lie ENE of Sproule Point about 12.5 miles SSW of the Riviere aux Rochers. Ile du Grand Caouis, composed of

sparsely-wooded granite and 46m high, lies about 0.5 mile offshore. Rocher Caouis, 4.5m high, stands 0.35 mile S of the S point of the island. Small vessels can anchor, in a depth of 12.8m, mud, off the NW side of the island.

Ile du Petite Caouis, 46m high, stands about 0.3 miles SSW of Ile du Grand Caouis. Several rocks stand near the island and foul ground lies between it and Pointe a Luc to the NW.

Baie des Homards (49°50'N., 67°05'W.), entered between Pointe a Luc (Sproule Point) and Cayes Rouges, about 3 miles to the SW, is fringed by shoal ground which extends about 1 mile offshore. Good anchorage can be taken, in a depth of 22m, fine sand over clay, midway between foul ground off Pointe a Luc and the foul ground extending from Cayes Rouges. Anchorage can also be taken, in 9.1m about 1 mile farther NW, fine sand over clay.

The **Riviere Pentecote** (49°46'N., 67°10'W.) discharges close SW of Baie des Homards. A pier, 91m long, extends from a partially-ruined wharf on the E bank close within the entrance. Constant silting takes place and the depth at the wharf was 3.4m and the pier has dried at LW. In 1990, the pier was in a state of disrepair. Local knowledge is required for entering the river.

From the Riviere Pente to Pointe des Monts, the shore is generally low and wooded. The hills back from the shore rise 274 to 378m. With the exception of the Ile aux Oeufs group, there are no reported dangers from the Riviere Pentecote to Ile Caribou, 17 miles S. For the remaining 12 miles to Pointe de Monts, the shoreline is more broken, with off-lying reefs.

Pointe aux Anglaise (49°40'N., 67°10'W.), about 6.5 miles S of the Riviere Pentecote, is low, wooded, and sandy. A village stands on the point. A rocky shoal extends about 0.4 mile of the point and should be passed at a prudent distance.

9.13 Île aux Oeufs (49°38'N., 67°11'W.), low, narrow, and sparsely wooded, lies 1 mile offshore about 2 miles S of Pointe aux Anglais. Its S and W sides are bold. Recif aux Cormorans, which dries 4m, lies with its S end about 0.4 mile N of the island. A drying reef extends 0.25 mile S from Recif aux Cormorans, leaving a narrow channel between the reefs and Île aux Oeufs. Recif Northeast, marked by some drying rocks, extends almost 0.8 mile NE from the N point of Île aux Oeufs.

Sheltered anchorage can be taken by boats, in a maximum depth of 5.4m, in the basin formed between Île aux Oeufs and the reefs mentioned above.

Between Île aux Oeufs and Pointe des Monts, about 20 miles SSW, the coast is fringed by foul ground that lies within 1 mile of the shore.

Baie de la Trinite, a coastal indentation, between 5.5 and 7.5 miles NNE of Pointe des Monts, affords excellent anchorage in moderate depths, sand, good holding ground.

A public wharf, 93m long, is situated on the NE side of the bay. Part of the head and the E side of the wharf are filled with rocks. There is a ramp adjacent to the inner end of the wharf. Ruins of an old breakwater lie E of the wharf.

Note.—Pointe de Monts, and the N coast of the St. Lawrence to the W of that point, is described beginning in paragraph 9.19. Depths at the S end of the wharf change continuously and may be less than charted.

South Shore—Cap de la Madeleine to Cap Chat

9.14 Cap de la Madeleine (49°15'N., 65°20'W.) is a rocky promontory with cliffs 18.3m high extending from the hills forming the shore. A rocky reef, partly dry at LW, extends about 0.2 mile E from the cape. A village, with a conspicuous church spire, stands about 1.5 miles W of the cape.

A river flows close along the cliffs on the E side of the cape into the NW side of a bight. A covered hill, about 762m high, rises back of the river and stands out prominently over the front range of hills when seen about 10 to 12 miles offshore. Temporary anchorage can be taken, in a depth of 11m, sand and gravel, with the lighthouse on the cape bearing 277°, distant 0.75 mile.

Cap de la Madeleine has been reported to be a good radar target up to 19 miles and has been reported to be identifiable with charted features by radar up to 9 miles.

From Cap de la Madeleine, the coast extends about 9 miles W to **Pointe du Gros Morne** (Pointe du Gros Male) (49°15'N., 65°33'W.), a prominent headland 91.4m high, and the N point of the S shore of the St. Lawrence River. This section of coast is almost straight and rocky, and bordered by cliffs 121 to 152m high along the W part. Rounded wooded hills rise to heights of 518m about 1 mile inland.

The village of Gros Morne stands in a small bay close SE of Pointe du Gros Morne. A conspicuous church stands in the W part of the village.

From Pointe du Gros Morne, the coast extends about 25 miles W to the Riviere a la Martre and the village of Ste. Marthe de Gaspe. The coast is rocky, with cliffs or steep slopes and wooded hills rising to heights of 457m close inland. Four bays, about 5 miles apart, indent this section of coast, but provide no shelter.

9.15 Cap aux Corbeaux (49°14'N., 65°45'W.) stands on the W point of Anse de Mont Louis, a small cove with drying reefs extending from both entrance points. Two conspicuous large aluminum colored tanks stand on Pointe Seche.

Marsoui (49°13'N., 66°04'W.), a settlement about 13 miles W of Cap de Mont Louis, has a fishing wharf situated on the E bank of the Riviere Marsoui.

The **Riviere a la Martre** (49°12'N., 66°10'W.) is a small stream that discharges about 4 miles WSW of Marsoui. La Martre de Gaspe Light, which is not always easy to distinguish from seaward, stands on the W bank of the river. A church close SSW and a high chimney E of the church assist in locating the light.

The coast trends WSW for 10.75 miles to Cap Ste. Anne. The cliffs fronting the shore are about 18m high, backed by a comparatively narrow strip of level land, which then rises to wooded summits 305 to 762m high. At LW, drying reefs and boulders extend 90m from shore.

A perpendicular cliff, 244m high, with a rounded 457m summit close SSE of it, stands about 5 miles WSW of the Riviere a la Martre and is conspicuous on E and W bearings.

9.16 Cap Ste. Anne (49°09'N., 66°26'W.), a cliffy projection 17m high with a cross, stands about 10.8 miles WSW of the Riviere a la Martre. A conspicuous 7.6m high rock, resembling a tower, stands at the foot of the cliff. The village of St.

La Martre de Gaspe Light

Joachim de Tourelle (Petite Tourelle) stands E of the cape. St. Joachim de Tourelle has a small harbor for the use of fishing boats only, enclosed by two rubble breakwaters. The entrance is 25m wide and has a depth of about 2.5m in mid-channel.

A jetty, 75m long, extends N from the S side of the harbor. Two other berthing walls lie each side of the root of the jetty, each about 40m long. Depths vary from 1.2 to 3.1m. A very conspicuous spired church stands about 1 mile E of Cap Ste. Anne and can be seen for a considerable distance.

From Cap Ste. Anne to Cap Chat, the shoreline forms three successive indentations; the E one, Anse de Ste.-Anne-des-Monts, is the largest.

9.17 Anse de Ste.-Anne-des-Monts (49°08'N., 66°29'W.) lies between Cap Ste. Anne and Pointe Ste. Anne, about 5 miles WSW. The E part of the bay is fouled by reefs that extend about 0.2 to 0.3 mile offshore. West of the Riviere Ste. Anne the bay shore is sandy. A church with two spires stands on the E bank of this river.

The river entrance is fouled by a bar of sand and gravel. Toward HW, a draft of 4 to 4.3m can be carried into the river by small vessels with local knowledge. The channel is narrow and the current is swift.

Sainte-Anne-des-Monts—Berth Information		
Berth	**Length**	**Depth**
No. 1	124m	4.0m
No. 2	92m	7.0m
No. 3	63m	5.0m
No. 4	110m	3.7m

The town of Ste.-Anne-des-Monts extends along the shore of the bay. A basin formed by two breakwaters is situated W of the public wharf. Depths in the basin vary from 1.5 to 2.7m

Anchorage.—Anchorage can be taken, in a depth of 16.5m, poor holding ground, with Ste. Anne Church bearing 109°, distant about 0.8 mile. Lumber is usually loaded at the anchorage.

9.18 Pointe du Cap Chat (49°07'N., 66°39'W.), a low rocky spit, stands about 4 miles WSW of Pointe Ste. Anne. Drying rocks extend about 0.2 to 0.3 mile from the point. The outer edge of these rocks is steep-to and should be given a wide berth.

A conspicuous tower, with an elevation of 235m, marked by red aircraft obstruction lights, lies about 0.8 mile SSE of Cap Chat Light.

The Riviere du Cap Chat, about 1.5 miles SW of the above point, provides no anchorage. A breakwater, which may be submerged at HW, extends 200m from shore and is parallel to the channel. The depth in the entrance channel is 0.9m. There is a small public wharf on the W shore, with a depth of 0.6m, close S of the road bridge spanning the river, which has a vertical clearance of 2.4m.

A fishing harbor, formed by two L-shaped rock breakwaters, extends 0.15 mile NNW from the shore at the town of Cap-Chat, about 0.2 mile W of the river entrance. The basin has a public wharf on the E side, with floating pontoons and a ramp in the SW part of the basin. The entrance to the basin is about 38m wide; it lies on the SW side of the basin and has a dredged depth of 3m. Depths elsewhere in the basin may increase to 3.4m.

A wreck, with a depth of 1.8m, lies about 46m NNW extremity of the E breakwater.

Cap Chat and the S shore of the St. Lawrence River W of the point is described beginning in paragraph 9.31.

North Shore—Pointe des Monts to Pointe de Betsiamites

9.19 Pointe des Monts (49°20'N., 67°22'W.), the N entrance point to the St. Lawrence River, is a low promontory that rises abruptly close W to an elevation of about 300m. A rock, with a depth of 3.2m, lies about 0.7 mile ESE of the point. A rocky ledge, with a depth of 2.7m, lies about 0.3 mile off the point.

Pointe des Monts has been reported to be a good radar target up to 20 miles.

From Pointe des Monts to St. Gilles Point, about 31 miles to the W, the coast is steep and bold, and from there to Pointe de Betsiamites the coast is low and sandy. Three large rivers discharge along this section of coast and are fronted by extensive flats.

Grand Anse St. Augustine, about 1 mile W of Pointe des Monts, is frequented by small craft sheltering from E winds. There is a depth of 4.1m near the middle of the entrance. Fishing gear may be moored in the approaches to the cove.

There is little or no flood current setting to the W off Pointe des Monts, except very close inshore. The constant river current in the middle of the estuary is deflected off Pointe des Monts to the SE toward Cap Chat.

The best anchorage, in depths of 18 to 22m, clay, lies off the middle of the cove with the fog signal building on Pointe des Monts in line bearing 095° with the E point of the cove. The cove shallows rapidly at its head. A line drawn between the islet at the head of the cove and the E point marks the limit of a drying area.

Godbout Village (49°19'N., 67°36'W.) stands along the shore of a sandy bay NE of the Godbout River, about 8.5 miles W of Pointe des Monts. A ferry operates regularly between Godbout and Matane and its usual track is shown on the chart. Marine farm facilities, generally marked by buoys, are located in a bay 4.5 miles W of Godbout; mariners should proceed with caution in these areas.

Aspect.—Godbout wharf light is on the outer end of the ferry wharf. Starboard hand light buoy K15 is moored about 1 mile off the mouth of Rivière Godbout.

Depths—Limitations.—Two berths make up the Gudbout Terminal. The East Berth has a length of 150m and is damaged. The West Berth has a length of 118m and handles ferries and general cargo.

Anchorage.—Vessels may anchor about 0.75 mile NE of the mouth of Rivière Godbout; depths are from 10 to 40m. It is advisable to approach slowly with the anchor lowered to the desired depth as the bottom is steepto. This anchorage provides good protection from westerly winds; the tidal streams are weak and irregular, often setting towards the shore.

9.20 Grand Baie Saint-Nicholas (49°18'N., 67°46'W.) stands in a narrow inlet bordered by high hills, about 6.5 miles W of Godbout Village. There is a narrow dredged channel into the inlet close to the W entrance point, about 22m wide, with a depth of 2.4m. The greatest depth inside the inlet is 16m.

An overhead cable, with a vertical clearance of 34m, spans the bay at the entrance to Grande Baie Saint-Nicholas.

A rocky point with a cross on it projects into the bay.

Small vessels can anchor in an area about 0.4 mile wide, good holding ground, with the rocky point bearing 355° and the E entrance point of the bay bearing 067°. A depth of about 14.6m exists in this position.

Pointe a la Croix, a very bold rocky point, devoid of vegetation, stands about 3 miles SW of Grande Baie Saint-Nicholas.

Anse St. Pancrace (49°17'N., 68°03'W.), about 9 miles W of Pointe a la Croix, is a deep-water shelter for small vessels from E winds. The shores are steep and high. A waterfall on the W side of the cove seen open of the W shore leads into the cove clear of Rocher Comeau. This rocky patch lies almost 0.8 mile SE of the W entrance point. Anchorage can be taken, in depths of 27 to 37m, fine sand, within the cove. Pontoons are situated in the NE part of the inlet.

Baie des Anglais (49°15'N., 68°06'W.), immediately W of Pointe St. Pancrace, has high, rocky shores and deep water. Baie-Comeau, on the SW shore of the bay, is the site of a paper mill. Baie du Moulin, about 2 mile N of the pier at Baie-Comeau, is the site of an aluminum smelter plant. Close N of the N entrance point of Anse du Moulin is the site of a large grain elevator.

Baie des Anglais is not recommended as an anchorage due to deep water and heavy seas accompanying E winds.

9.21 Baie-Comeau (49°14'N., 68°08'W.) (World Port Index No. 2015) stands in Anse Comeau on the SW side of Baie des Anglais, about 1.5 miles N of St. Gilles Point and is a port of entry. Paper is the principal export. The port is open for shipping year round.

Baie-Comeau airport, is situated on Péninsule de Manicouagan 5 miles SW of the port. A railcar ferry operates frequently between Matane and Sept-Îles; their usual tracks are shown on the chart.

Tides—Currents.—The mean tidal rise is about 3.2m.

Depths—Limitations.—The approach to the berths at Baie-Comeau are deep and clear, with the 20m curve lying about 90m off the head of the pier.

Aspect.—The four chimneys of the paper mill are very conspicuous. A microwave tower, 134m high, is situated about 0.2 mile S of the paper mill, with a cross, 80m high, close S of the microwave tower.

An aluminum smelter, 1.75 miles N of the paper mill, lies in the vicinity of Dock No. 2. Between Dock No. 1 and Dock No. 2, there are many oil storage tanks along the shore. Baie Comeau has a car ferry terminal with service to Matane and is a shipping port for exporting the region's manufactured goods around the world.

Three sets of range lights, privately maintained and visible only when in alignment, lead to Dock No. 2 and Dock No. 3.

Lighted Buoy KD14 is moored at the mouth of Rivière Manicouagan, 3.5 miles east of Pointe Saint-Gilles.

Baie-Comeau—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Cargill Ocean Terminal			
No. 1	192m	12.2m	Grain. Maximum loa of 259.1m. Maximum draft of 10.1m. Maximum beam of 36.6m.
No. 2	212m	8.4m	Grain.

Baie-Comeau—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Alcoa Baie-Comeau Smelter Terminal			
No. 1	164m	9.1m	Steel products, breakbulk, stone, sand, and dry bulk cargo. Maximum loa of 222.5m.
No. 2	179m	9.7m	Steel products, breakbulk, stone, sand, and dry bulk cargo.
No. 3	164m	9.7m	Steel products, breakbulk, stone, sand, and dry bulk cargo.
Traversiers-Baie-Comeau Ferry Terminal			
Ro-Ro Berth No. 1	96m	—	Ro-ro and passengers. Ramp width of 7m.
Ro-Ro Berth No. 2	110m	—	Ro-ro, passengers, and general cargo. Ramp width of 12m.
Resolute Forest Products			
No. 1	150m	9.0m	General cargo. Continuous quay length of 300m.
No. 2	150m	8.5m	
No. 3	125m	8.5m	Closed. Mooring prohibited.
No. 4	213m	8.7m	Newsprint, lumber, dry bulk cargo, and ro-ro. Ro-ro ramp width of 9m.

Baie des Anglais private range lights in line bearing 312½°, are at the head of the bay. Each light is shown from a tower; the lights are visible only when in alignment.

Anse du Moulin Entrance private range lights are in line bearing 239½°. The front light is shown from the top of a tank the light is visible all around. The rear light is shown from a concrete base situated on the hillside near the road; the light is visible only when in alignment.

Anse du Moulin private range lights, in line bearing 237½°, are in the vicinity of the grain elevator. The front light is shown from a mast located E of the silos. The rear light is shown from a tower; the lights are visible only when in alignment.

Baie-Comeau Light is on the outer end of the public wharf. Baie-Comeau ferry light is on the outer end of the rail-car ferry wharf.

A newsprint mill located 1 mile SW of the public wharf. A telecommunication tower, 13m in elevation, 1.2 miles SW of the public wharf, while other towers lie about 0.6 mile W. A church spire, 138m in height, lies 0.7 mile NW of the public wharf. The numerous silos of a grain terminal lie close N of Anse du Moulin.

Pilotage.—Harbor pilots and a tug are available if needed. Arrangements concerning these services must be made through Cargill Limited Company. It is compulsory to use the services of a harbor pilot and a tug to assist in berthing vessels at Alcoa and Cargill wharves.

Contact Information.—See the table titled **Baie-Comeau—Contact Information**.

Baie-Comeau—Contact Information	
Port Authority	
Telephone	418-296-4296
Facsimile	418-296-9582
Email	portbaiecomeau@globetrotter.net

Regulations.—Vessels maneuvering, or otherwise underway in the port, and also while at berth or at anchor, are subject to the Public Ports and Public Port Facilities Regulations.

Cathodic protection systems to control corrosion are in operation at Transport Canada's Berth No. 3, the Ro-Ro Mobile Ramp, and the Alcoa Wharf.

Anchorage.—Anchorage can be taken off any of the terminals, in depths of 21.9 to 36.6m, sheltered from all but E winds and seas.

Directions.—Baie des Anglais is entered between Pointe Saint-Pancrace and Pointe Saint-Gilles, which is 4 miles to the SW. The bay is generally deep and exposed to heavy seas with east and south winds. The coastline of the bay is bold and rocky.

9.22 The **Riviere Manicouagan** (49°11'N., 68°11'W.) enters the St. Lawrence River between Pointe Saint-Gilles and Pointe Lebel, about 3.3 miles to the SW. Pointe Lebel is low, thickly wooded, and fronted by a broad sandy beach.

Pointe de Manicouagan, about 3.8 miles S of Pointe Lebel, is also low, wooded, and fronted by a broad sandy beach which extends to the village of Pointe-aux-Outardes, about 9.5 miles to the WSW.

The Peninsula de Manicouagan lies between Pointe Lebel and Pointe-aux-Outardes. The N side of this peninsula has been reported to be a good radar target up to 28 miles.

The currents are fairly regular and not very strong along the E side of the Peninsula de Manicouagan. The maximum rate of both currents is about 2 knots. There is often a heavy sea off the shoal on this side of the peninsula, especially when the wind and current are in opposition.

9.23 The **Riviere aux Outardes** (49°04'N., 68°29'W.) flows into the St. Lawrence River W of Pointe-aux-Outardes and has a controlling depth of 0.6m at LW over the bar at the entrance. Small craft with local knowledge enter the river to load pulpwood at a wharf about 6 miles above the entrance.

Baie aux Outardes lies between Pointe-aux-Outardes and Pointe de Betsiamites, about 10 miles SW. The central part of the bay is deep, but its shores are fringed by flats and shoals which extend up to 1 mile off its W side and up to 3.5 miles off its N side.

Several islets stand near the mouth of the Riviere aux Outardes. The most conspicuous are Île Blanche, a bare white granite rock, 23m high, and Île de la Mine, a red bare rock, 15m high.

Good anchorage can be taken in Baie aux Outardes, in a depth of 25m, mud, with **Pointe a Michel** (48°55'N., 68°37'W.) bearing 192° and Pointe de Manicouagan bearing 065°. Small vessels can anchor closer in to the shore, in a depth of 11m. This anchorage is excellent during W gales.

In Baie aux Outardes, the rate of both currents seldom exceeds 2 knots with the flood being much weaker. The direction of the currents in the W part of the bay is reversed by the effect of the river, so that the flood sets N and NE and the ebb SW and SE.

Caution.—The water of the river holds a white earth in suspension. It frequently covers the entire bay, floating on the heavier sea water, and giving the bay the appearance of being shoal. A vessel passing through this fresh water displaces it, leaving a blue streak in its wake.

The **Riviere Betsiamites** (48°56'N., 68°38'W.) flows into the St. Lawrence River S of Pointe de Betsiamites, about 9 miles SW of the entrance to the Riviere aux Outardes. A shallow, narrow channel, marked by navigational aids, leads through the drying sands which obstruct the entrance. The village of Betsiamites stands on the N side of the entrance.

North Shore—Pointe de Betsiamites to the Riviere Portneuf

9.24 **Pointe de Betsiamites** (48°56'N., 68°37'W.), low and sandy, is fringed by a steep-to shoal which extends about 0.8 mile E from it.

The coast between Pointe de Betsiamites and the Riviere Portneuf, about 25 miles SW, extends in that direction for 18 miles to Île Lavaland, then S for about 7 miles to the Riviere Portneuf. The first 7 miles of this coast is low and sandy, with the remainder being rocky, broken, and backed by hills rising to heights of 243m. A conspicuous ridge of white granite, 137m high, stands parallel to the shore about 4 miles inland.

The currents between Pointe de Betsiamites and the Riviere Portneuf set in a general NE and SW direction with the ebb having a velocity of up to 3 knots and the flood up to 2 knots.

Pointe a Michel, low and fringed by shoals which extend up to 0.5 mile offshore, stands about 1.5 miles SSW of Pointe de Betsiamites. A beacon stands about 2 miles WSW of Pointe a Michel.

Between Pointe a Michel and Îlets Jeremie, about 6 miles to the W, the low coast is fringed by shoals which extend about 1 mile offshore. Foul ground extends up to 1.5 miles E from the islets. Some conspicuous patches of white sand and clay mark the cliffs close N of these islets.

Fair anchorage, sheltered from NE winds, can be taken, in a depth of 18.3m, with Pointe a Michel bearing 064°, distant about 1.3 miles.

Cap Columbier (48°49'N., 68°53'W.), a rocky peninsula about 43m high, with a red islet on its W side, stands about 5 miles SW of Îlets Jeremie.

Battures Gulnare, a rocky ridge with a least depth of 3m, lies with its NE end about 2 miles ENE of Cap Columbier and extends about 2.5 miles SW to join the coastal bank. **Pointe Orient** (48°46'N., 68°59'W.) and the NE extremity of Île Laval, in line bearing about 250°, leads S of this shoal in depths of over 45.7m.

Between Cap Colombier and Île Laval, about 7.5 miles SW, the coast is indented by foul bights.

Île Laval (48°45'N., 69°01'W.), 76m high, stands on the E side of the entrance to Baie Laval, which dries at LW.

9.25 **Forestville** (48°44'N., 69°04'W.), a pulpwood-export center, stands near the mouth of the Riviere Sault-aux-Cochons. This port is currently closed for commercial operations.

Baie Verte, the shipping harbor for Forestville, lies about 0.5 mile ENE of the town. A training wall, which covers at HW, protects the harbor from the S and SW, and a breakwater that extends S from Pointe Rocheuse protects it from the E.

The paper company wharf is 138m long and 20m wide, with depths of 4.5 to 5.0m alongside the E side. The Department of Transportation wharf is 64m in length and has an alongside depth of 4m.

The buoyed approach channel leading to the harbor area is defined by lighted beacons in line bearing 261.5°.

A conspicuous water tower, 30m high and marked by red obstruction lights, is situated about 0.4 mile WNW of the rear range structure.

Anchorage can be taken about 2 miles off Baie Verte, in depths of 11 to 12.8m, sand and mud bottom.

Clay cliffs commence about 1.5 miles S of Baie Laval and continue for 5 miles, where a narrow, sandy peninsula with a clump of pine trees on it, forms the E side of the entrance to the Riviere Portneuf. Île Patte-de-Lievre, a rocky islet 10.7m high, stands 0.1 mile offshore, about 1.8 miles S of Forestville.

North Shore—The Riviere Portneuf to Pointe aux Vaches

9.26 The **Riviere Portneuf** (48°38'N., 69°05'W.), about 7 miles S of Île Laval, discharges to the E, then turns sharply to the S and runs between a long, narrow sandspit and the shore, and then discharges through numerous shallow channels across Portneuf Sands.

There is a marina on the N side of the Riviere Portneuf, 0.3 mile NW of Pointe des Fortin, and a public wharf, on the S shore. The channel leading to the marina is marked by a series of buoys. The positions of the buoys are subject to change to mark the best channel. Local knowledge is essential; flooding, silting, and storms all affect the depths in the channel and at the river mouth. Least depths are in the order of 0.1m, with between 0.5 and 1.1m depths at the marina. A submarine pipeline crosses the river between the public wharf and the marina. A bridge, with a vertical clearance of 2.5m, and an overhead power cable with a vertical clearance of 5.7m, span the river close upstream and downstream, respectively, of the marina.

Ste. Anne-de-Portneuf, a small village with a church in it, stands on the summit of a steep, sandy bank close S of the mouth of the Riviere Portneuf.

Pointe au Boisvert (48°34'N., 69°09'W.), about 4.8 miles SSW of the Riviere Portneuf, is low, sandy, and marked by a clump of trees near its extremity. The intervening coast is wooded and comparatively low, with hills rising about 2 miles inland.

Baie de Mille Vaches (48°32'N., 69°13'W.) lies between Pointe au Boisvert and Îlets Boises, 11 miles to the SW, and is fouled by drying sand and sand flats up to 2 miles offshore. A great number of above-water boulders stand on the flats in the W part of the bay.

The village of St.-Paul-du-Nord, marked by a church with a conspicuous spire, stands on a point of red stone within the bay. A wharf in ruins extends from this point.

The Riviere Mille Vaches, the largest of several streams, discharges into the head of the bay.

Sault-au-Mouton, a small village, stands at the mouth of the Riviere du Sault-au-Mouton, almost 2 miles SSW of St.-Paul-du-Nord. The river has a waterfall, 24m high, which is conspicuous from a SE direction, but is obscured from other directions by the entrance points to the river. Three ruined piers stand near the river mouth. A channel leading to these piers can be used at or near HW.

Good anchorage can be taken, in depths of 18 to 22m, off Sault-au-Mouton.

Îlets Boises (48°25'N., 69°19'W.), two wooded islets, stand on the drying flats about 0.4 mile offshore; a visible wreck lies close NE of the islets. Between these islets and Les Escoumins, about 5 miles SW, the shore is backed by wooded, clay cliffs.

9.27 Baie des Escoumins (48°22'N., 69°23'W.) stands about 5 miles SW of Ilets Boises and dries completely except for a small channel leading from the Riviere des Escoumins. A conspicuous brown stone church with a silver colored spire stands in the village of Les Escoumins near the mouth of the river. A white statue stands in front of the church. A conspicuous aluminum colored water tank, at an elevation of 88m, stands about 1 mile S of the church and is one of the best landmarks for approaching Les Escoumins.

For berthing information, see the table titled **Les Escoumins—Berth Information**.

Les Escoumins—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Ferry Berth	54m	—	Ferry.
Pilot Station Wharf	62m	—	Les Escoumins Pilot Station.
Floating Dock	64m	—	Pilots and public.

9.28 Anse aux Basques (48°19'N., 69°25'W.), a small cove about 2 miles SW of Les Escoumins, is the site of the pilot station for vessels bound up and down the St. Lawrence River. The pilot station, a conspicuous red and white building, is fronted by a wharf 61m long with a 17m long L-end that has a least depth of 7m alongside.

The master of every vessel inbound in the Gulf of St. Lawrence and destined for a port W of Les Escoumins must request a pilot through an MCTS Center or the Laurentian Pilotage Authority.

Laurentian Pilotage Authority—Contact Information	
Telephone	1-514-283-3647
Email	pilote.mtl@apl.gc.ca

A minimum notice of 24 hours before the ETA at the pilot station must be given, with a second notice of the ETA 12 hours beforehand and a final notice given 6 hours before the ETA. If a ship is arriving from a point W of the Strait of Canso, the Strait of Belle Isle, or Cabot Strait, the master must give first notice 12 hours before the ETA, with a final notice given 6 hours before the ETA. Vessels requiring exchange pilots at Quebec, Trois Rivieres, and Montreal are required to give 4 hours notice at these locations.

Pilots board in the pilot boarding area off Anse aux Basques. Vessels are advised of the pilot boarding procedures by Les Escoumins VTS on VHF channel 9. Vessels should not enter the pilot boarding area until the preceeding vessel has left and entrance clearance is given by Les Escoumins. Priority is given to downbound vessels. Vessels maneuvering to pick up or drop off a pilot should not navigate inside the 200m curve.

There is a St. Lawrence River Traffic Control reporting point off the pilot station for vessels bound up or down the river.

A radar surveillance center is situated at Les Escoumains. Surveillance covers an area with a radius of 32 miles.

Anse aux Basques Light is situated on the N entrance point to the cove. A racon transmits from this light. Range lights, for the use of the pilot vessel, in line bearing 302°, lead into the cove.

9.29 Cap de Bon-Désir (48°16'N., 69°28'W.), a small, rocky, and steep-to projection marked by a light, lies about 3.5 miles SW of Anse aux Basques.

Baie des Grandes Bergeronnes, which dries except for a shallow narrow channel, lies about 4.5 miles SW of Cap de Bon-Désir. The buoyed channel, which leads NNW to the basin N of the wharf, was dredged to 2m in 1997 and is subject to silting. A church with a conspicuous aluminum spire, a sawmill, and a mine stand in the village of Grandes Bergeronnes at the head of the bay. A government wharf stands close S of the highway bridge which crosses the river in the vicinity of the village. Along the face, there is a stranding berth 23m long with a depth of 4.6m alongside. A wharf, 110m long, which dries at LW, extends from Pointe a John, the E entrance point to the bay. A marina, with a series of pontoons, is situated in the basin N of the wharf at Pointe a John.

Caution.—An unexploded ordnance area is situated near Grandes Bergeronnes, which is best seen on the chart of the area. Caution is advised while transiting the area.

9.30 Baie des Petites Bergeronnes (48°13'N., 69°35'W.) lies close SW of Baie des Grandes Bergeronnes. A very conspicuous white boulder stands on the E entrance point. Two very conspicuous triangular sand patches stand on the seaward face of the small wooded peninsula which separates the two bays. These patches can be seen for a considerable distance, es-

pecially when the morning sun shines on them.

The shore for about 2.3 miles above Baie des Petites Bergeronnes is thickly wooded and comparatively low, but then commences to be high and bold. Two very conspicuous white stone patches stand close together on the cliffs, 2.75 miles SW of the S entrance point to Baie des Petites Bergeronnes. These patches stand on the side of a sharp peak which rises to a height of 129m and is prominent when viewed from the NE.

Baie du Moulin a Baude (48°09'N., 69°40'W.), with a river of the same name emptying into its head, lies about 5 miles SW of Baie des Petites Bergeronnes. A waterfall and the ruins of an old power house stand near the river mouth. The sand formations of the Saguenay district, the high clay cliffs, and sand ridges which are very conspicuous from offshore, commence here.

Anchorage can be taken off the bay, in a depth of 11m, sand and mud, with Haute fond Prince Light bearing 176°, distant about 3 miles. Anchorage can also be taken off Rochers du Saguenay, in a depth of 15m, with the same light bearing 193°, distant 2 miles.

Pointe aux Vaches (48°08'N., 69°40'W.), the E entrance point of the Riviere Saguenay, is formed of high, gray, and steep cliffs, 62m high, lying about 1.3 miles SW of the Riviere du Moulin a Baude.

Note.—The Riviere Saguenay is described beginning in paragraph 10.4.

The N shore of the St. Lawrence River W of the Riviere Saguenay is described beginning in paragraph 10.15.

South Shore—Cap Chat to Matane

9.31 Cap Chat (48°05'N., 66°44'W.) is topped by a conspicuous conical hill about 150m high. When viewed from the E or W, the cape appears as an island. Under normal weather conditions the cape can be seen at a distance of 25 miles. A conspicuous tower, with an elevation of 235m, is situated about 0.7 mile SSE of Cap Chat.

Cap Chat has been reported to be a good radar target up to 18 miles and has been reported to be identifiable with charted features by radar up to 13 miles.

The coast between Cap Chat and Matane, about 35 miles to the SW, extends regularly in that direction and is bold, rocky, and high.

From the mouth of the Riviere Saguenay to Cap Chat, there is a constant outgoing current which is found in more than half the width of the St. Lawrence River on its S side. The velocity ranges from 1.5 to 2.5 knots.

A weak current setting SW on the flood is found inside this current and closer inshore than the usual safe track of shipping. During both the flood and the ebb, a strong onshore set has been observed in the vicinity of Matane.

Baie des Capucins, 5 miles WSW of Cap Chat, dries at LW exposing numerous large boulders.

9.32 Cap des Mechins (49°00'N., 66°59'W.), about 9 miles WSW of Cap Chat, is 18.3m high. A public jetty, protected on the NW side by a rock breakwater and sheltering small craft from all winds except NE to E, extends about 340m NE from Le Gros Mechins.

Les Mechins—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Public Jetty			
No. 1	110m	6.7m	General cargo.
No. 2	130m	5.5m	General cargo.
Fisherman's Wharf	72m	1.8m	—

Fisherman's Wharf, on a breakwater 238m long, extends from the shore 0.3 mile SE of the public jetty. For berthing information see table titled **Les Mechins—Berth Information.**

The drydock, 252m long and 27.4m wide, is situated on the SE side of the inner end of the wharf.

9.33 Les Îlets (48°59'N., 67°01'W.), a group of three small islets, lie close offshore about 2 miles WSW of Les Mechins. The E and largest islet is 3.7m high. A rock, with a depth of 1.5m, lies about 0.2 mile seaward of Les Îlets.

A wharf, 91m long, with a depth of 3.7m alongside at HW, extends from the coast abreast of Les Îlets.

Ruisseau a Sem, about 2.8 miles SW of Les Îlets, is fronted by a small wharf. A rocky reef, with some large boulders, extends 0.2 mile from the shore beyond the end of the wharf.

A conspicuous high microwave tower stands about 3.5 miles SSW of Ruisseau a Sem.

Grosses Roches, a village with a church in it, stands about 4 miles SW of Ruisseau a Sem. A wharf in ruins extends from the shore about 1 mile E of the village.

Cap a la Baleine, a prominent headland 76m high, stands about 4 miles SW of Grosses Roches and is bold and steep-to. Ste.-Felicite, a village about 3 miles W of the cape, is fronted by a wharf in ruins. A church stands in the village.

Battures a la Croix (48°55'N., 67°20'W.), a detached 5m shoal, lies about 1 mile N of Ste.-Felicite Church. The sea seldom breaks over this shoal. A rock, with a depth of 7.3m, lies about 0.5 mile SW and a 9.8m patch lies about 1.5 miles W of Battures a la Croix.

Between Ste.-Felicite and Matane, about 8 miles to the SW, the shore consists of a continuous line of clay cliffs 15 to 18m high; the shoreline is fringed with drying reefs extending up to 0.2 mile offshore.

A conspicuous church stands near the mouth of a small river, about 4.5 miles WSW of Ste.-Felicite. A tower stands 3.75 miles SE and a conspicuous tower stands 2 miles WSW of the mouth of the same river.

South Shore—Matane to Pointe au Pere

9.34 Matane (48°51'N., 67°32'W.) (World Port Index No. 1990), situated 1.7 miles west of Le Vieux Port, is administered by Transport Canada. The ferry facilities are managed by the Société des Traversiers du Québec. The port mainly handles wood pulp, salt, gravel, and wind turbine parts.

Ice.—The harbor is open all year round, but occasionally the assistance of ice breakers may be required.

Matane Harbor

Tides—Currents.—The average tidal rise is about 4.13m. The channel depth is 8.5m at extreme low tide.

Winds—Weather.—The harbor entrance is open to the NE and strong NE winds, particularly in the autumn, promote heavy seas in the harbor.

Depths—Limitations.—The harbor has depths of 7.3 to 8.5m and is formed by two breakwaters extending about 0.5 mile from the coast, with the entrance at the NE corner. Due to continual silting, dredging is carried out periodically to maintain the charted depths; mariners are cautioned that depths less than those charted must be expected.

A detached 5.2m shoal lies about 0.4 mile E of the N breakwater of the new harbor.

Submarine pipelines, 0.3 mile NE and 0.3 mile SW of the harbor, extend 555m and 300m, respectively, to seaward. The SW pipeline has a depth of 1m at its outer end.

The shore up to 4 miles SW of Matane consists of a low sandy beach, but from there to Pointe au Pere, about 38.5 miles WSW, the shore is fringed by reefs strewn with boulders which extend up to 0.2 mile offshore at LW. Between Matane and Pointe Mitis, about 22 miles SW, there is a prominent hill about 2 miles inland, rising from level ground to an elevation of 183m. Farther to the W, some isolated hills stand about 2 miles inland, but are much lower. Mont Camille, a prominent hill 573m high, stands about 10 miles SE of Pointe au Pere.

Aspect.—The four chimneys of the paper mill are very conspicuous. A microwave tower, 134m high, is situated about 0.2 mile S of the paper mill, with a cross, 80m high, close S of the microwave tower.

The village of St.-Ulric stands at the mouth of the Riviere Blanche, about 7 miles SW of Matane. A church stands in the village. A conspicuous microwave tower, marked by obstruction lights, stands about 1.8 miles S of the village. At night, a building next to the tower is floodlit.

Matane—Contact Information	
Port Authority	
Telephone	418-562-7152
Facsimile	418-562-7153
E-mail	portmatane@gmail.com

Matane—Berth Information					
Berth	Length	Depth	Vessel Maximum		Remarks
			LOA	Beam	
East Breakwater Ferry Terminal					
East Breakwater North Berth	350m	—	122.3m	19.8m	Fast ferries.
East Breakwater South Berth	110m	—	120m	20.1m	Ro-ro passengers, vehicles, and rail.

Matane—Berth Information					
Berth	Length	Depth	Vessel Maximum		Remarks
			LOA	Beam	
West Breakwater Terminal					
Commercial Berth	186m	10.0m	204.3m	32.2m	Project/heavy cargo and breakbulk.

Pilotage.—Pilotage is available but not compulsory. If required, the pilot boards 1 mile off the entrance.

Directions.—The harbor is entered between the breakwater heads at its NE corner, a light is exhibited at each breakwater head. The W breakwater, which curves NE at its outer end has the main wharf situated on its inner side. The E breakwater has the ferry berths, situated near its inner end.

Contact Information.—See the table titled **Matane—Contact Information**.

Caution.—Mariners are advised that the depths of the berths may vary and should therefore consult their nautical charts. There is no channel between the wharf and the navigable waters.

9.35 Baie des Sables (48°43'N., 67°54'W.), a small village about 9 miles SW of St.-Ulric, has a stone church with a conspicuous high spire built close to the shore.

Metis-sur-Mer (48°41'N., 67°59'W.), a summer resort with several large hotels and numerous cottages, stands about 4 miles SW of Baie-des-Sables. Les Boules, a conspicuous, bare, round islet 14m high, stands about 0.2 mile off the resort. A conspicuous power generating station is situated about 1 mile E of Les Boules.

Pointe Mitis, the W point of Anse du Petit Mitis, stands almost 2 miles W of Les Boules and is low and wooded. Several buildings stand on the point. Anse du Petit Mitis is small and divided into two drying rocky coves.

Anchorage can be taken by small vessels about midway between the E reef off Pointe Mitis and Les Boules, in a depth of 5.5m, mud. Large vessels can anchor, in a depth of 9 to 11m, farther offshore.

Pointe aux Cenelles, a cliff about 18m high, stands 5 miles SW of Pointe Mitis and forms the W point of Baie Mitis. There is a wharf at Pointe aux Cenelles, its use is restricted to designated vessels.

In good weather, anchorage can be taken, in depths of 11 to 21.9m, off Baie Mitis, in good holding ground.

Ste.-Flavie, a village with a church in it, stands 3.5 miles SW of Pointe aux Cenelles. There is a pier at the village. The pier is rock-filled on the E side and partially rock-filled on the W side. It is reported to be in a poor condition. A church with a spire stands 2 miles inland and a similar church stands about 1 miles farther inland. The three church spires are in line bearing about 133°.

Pointe aux Coques (48°33'N., 68°23'W.), marked by a church, stands about 11 miles SW of Pointe aux Cenelles. A drying pier extends from the point.

Caution.—A submerged water intake pipeline extends 1 mile N from the shore of Pointe aux Cenelles. Another intake pipeline lies close E.

South Shore—Pointe au Pere to Île Verte

9.36 Pointe au Pere (48°31'N., 68°28'W.), about 4 miles SW of Pointe aux Coques, is the former site of the pilot station for the St. Lawrence River. A conspicuous church, with a village grouped around it, stands about 0.4 mile inland. A large pier extending from the shore abreast Pointe au Pere was reported to be in a state of disrepair and all berthing was prohibited. The wharf was consolidated in 2007, and the remaining part was rock-filled on all sides. The structure protects the seawater intake for the nearby National Scientific Research Institute and also protects the neighboring shoreline properties.

Ice.—The river never freezes over off Pointe au Pere. Drifting field ice usually arrives about December 1 and disappears early in April. There is rarely any heavy ice until the end of December, and a channel of water always remains open, either on the N or S side of the river according to the prevailing wind. Even light airs are sufficient to drive the ice to mid-channel.

Caution.—A submerged water intake pipeline extends about 385m from the N side of Pointe au Pere. An obstruction, with a known depth of 10.8m, lies about 750m NNE of Pointe au Pere.

9.37 Rimouski (48°28'N., 68°32'W.) (World Port Index No. 2030), administered by Transport Canada, is 3 miles upstream of Pointe au Père. The port primarily works with petroleum products.

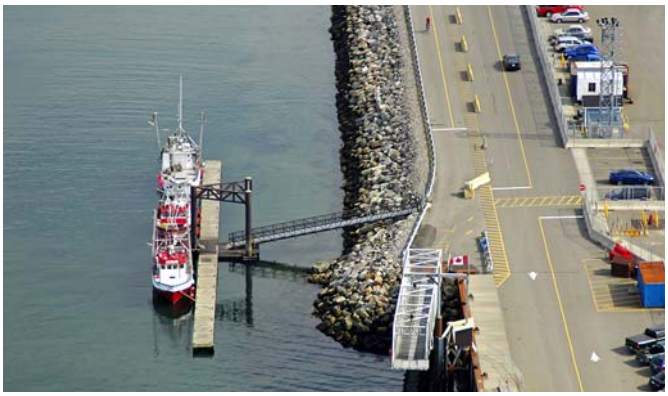
Ice.—The harbor is open year-round but the occasional assistance of icebreakers may be required.

Tides—Currents.—The tidal rise at Rimouski is 4.5m at springs and 3.1m at neaps.

Depths—Limitations.—The berthing facilities consist of East Pier and West Pier, which are joined at their inner ends to form a basin. Berthing information is described in the table titled **Rimouski—Berth Information**.

Rimouski—Berth Information			
Berth	Length	Depth	Remarks
West Wharf No. 1	213m	7.3m	General cargo.
Cross Wharf No. 2	184m	7.3m	General cargo.
East Wharf No. 3	130m	7.3m	Salt and dry bulk.

Rimouski—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
East Wharf No. 4	150m	7.3m	Oil pipeline for petroleum products.
East Wharf No. 5	150m	7.3m	Oil pipeline for petroleum products.
No. 6	113m	4.3m	Fishing vessels.
No. 7	255m	4.3m	Fishing vessels and seasonal ferries.
West Wharf No. 8	30m	3.5m	General cargo.



Rimouski Ferry Pier

Rimouski—Contact Information	
Port Operator	
Telephone	418-722-3011
Facsimile	418-722-3011
Harbormaster	
Call sign	Rimouski Harbormaster
VHF	VHF channel 9
Telephone	418-722-3011
Facsimile	418-722-3007
Web site	https://www.rimouski.ca/services/transports/port-et-marina

The dredged depth in the approach channel is 4.9m, but siltation occurs and depths may be less in the channel and in the area off the berths. The entrance channel is marked by light buoys and leading lights.

A marina operates from the basin and pontoons on the W side are used by fishing vessels.

Aspect.—Lighted beacons, in line bearing 178.5°, lead through the approach channel to the harbor basin. The lights are visible only when in alignment.

A church with a conspicuous spire stands in the town of Rimouski. A similar church stands near the root of West Pier.

Pilotage.—Pilots can be obtained from Les Escoumins.

Regulations.—A cathodic protection system to control corrosion is in operation alongside the East Wharf (Berth No. 3, Berth No. 4, and Berth No. 5). When berthing along any of these berths certain operational procedures must be observed to prevent damage to vessels.

Contact Information.—See the table titled **Rimouski—Contact Information**.

Anchorage.—Anchorage can be taken in Rimouski Roads N of the piers. The best anchorage, in a depth of 8m, lies with Rimouski Light, situated on the outer end of the East Pier, bearing 177°, distant 1 mile. To obtain better shelter from W winds, small vessels can anchor, in depths of less than 5m, with Rimouski Light bearing 129°, distant 0.75 mile.

Rimouski—Contact Information	
Port Authority	
Telephone	418-648-4166
Facsimile	418-648-3790

Caution.—The airport is situated about 0.5 mile SE of the inner end of the East Pier. Several red and white lights are shown at the airport during flight operations; these lights are visible from the river and should not be confused with navigation lights in the vicinity.

The access channel, basin, and berth numbers 1,2,3, 4, and 5 require maintenance dredging every 2 years to keep clearance at required levels.

9.38 Île St.-Barnabe (48°28'N., 68°34'W.), joined to the mainland by drying flats marked by numerous boulders, lies about 1.8 miles off the town of Rimouski. The island is wooded except near its E end. When seen from the NNE through ENE at a distance of about 4 or 5 miles, the island appears to be two islets.

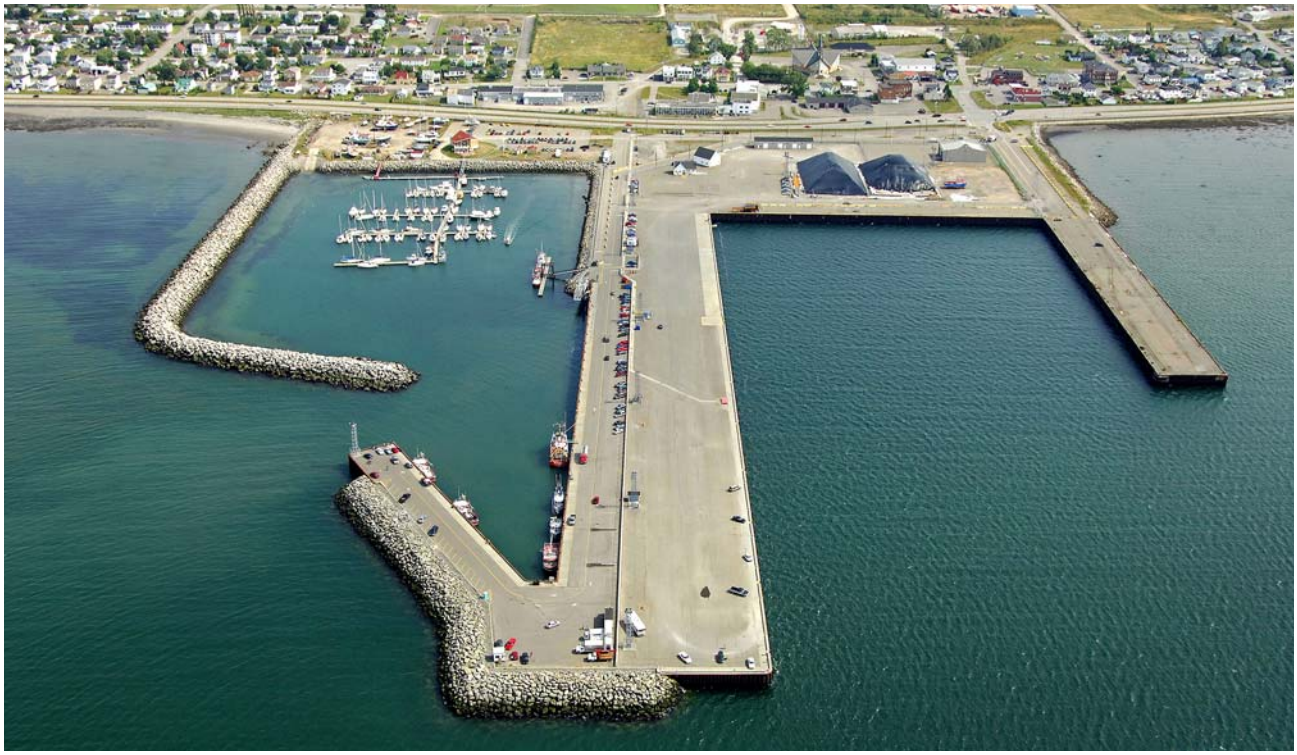
Îlet Canuel, a narrow islet about 38m high, stands between the SW end of Île St.-Barnabe and the mainland. The slopes of the island are wooded, but the summit is bare.

Two radio towers, one of which is conspicuous and 182m high, are situated on the mainland S of Îlet Canuel. A microwave tower, with an elevation of 242m, is situated almost 4 miles ESE of the NE end of Île Canuel. Other microwave towers are situated about 2.5 miles SE of the same point.

Anchorage can be taken by small vessels, sheltered from E winds, in Rade St.-Barnabe, off the W end of Île St.-Barnabe, in a depth of 4.6m, with the above radio tower bearing 090°, distant 1.5 miles.

Sacre-Coeur (48°25'N., 68°35'W.), a small village with a church in it, stands about 3 miles SW of Rimouski.

Cap du Caribou stands 3 miles SW of Sacre-Coeur. The shore between these points is fronted by drying ridges and is backed part of the way by wooded cliffs marked by several



Rimouski Harbor

conspicuous bare patches.

Old Bic Harbor (48°22'N., 68°44'W.) dries at LW, with the exception of a small bight between the entrance points. The Îles Bicoques, two round wooded islets of about the same height, stand close off Cap du Corbeau, the E entrance point to the harbor. A small pier extends from the shore abreast of the village of Bic in the SE part of the harbor.

Small vessels can anchor, in depths of 3.7 to 4.3m, mud, midway between the harbor entrance points.

The land SW of Bic commences to take the peculiar formation of the Bic Ranges. The hills, rising gradually from the E and W to Mont du Bic (Bic Hill), are composed of sandstone and quartz, which runs in narrow ridges parallel to the coast and to each other, with deep valleys in between. When seen from up or down the river, these ridges present a very remarkable appearance. **Mont du Bic** (48°20'N., 68°49'W.) rises to a height of 344m. A conspicuous television mast stands close NW of this hill. A conspicuous line of granite cliffs, shaped like a broad V, stand on the seaward side of Mont du Bic.

9.39 Cap a l'Orignal (48°22'N., 68°48'W.) is the N extremity of a small peninsula extending from the coast. The hill near the cape is 72.5m perpendicular cliff about 67m high.

Anse a l'Orignal, the bay to the E of Cap a l'Orignal, provides good anchorage to small vessels, in a depth of 5.5m, mud, with the N face of Cap a l'Orignal bearing 255°, distant 1 mile.

Île du Bic (48°24'N., 68°52'W.), long, narrow, and thickly wooded, lies 2.25 miles NW of Cap a l'Orignal. The island is thickly wooded and rises to an elevation of 55m to the tops of the trees. Bic Channel lies between the island and the mainland. St. Fabian Beacon, orange colored, stands on the S shore of the St. Lawrence River, about 2.8 miles WSW of Mont du Bic. This beacon, in line with La Muraille (The Notch), a conspicuous hill, 274m high, with a notched summit, leads over Alcide Rock.

Île Bicquette (48°25'N., 68°53'W.), about 15m high, stands close NW of Île du Bic and is separated by Bicquette Channel. The positions of the dangers which lie within 1.5 miles SW and 1 mile E of the N end of this island can best be seen on the chart.

Alcide Rock, with a least depth of 1.2m, lies on a small detached shoal about 3.5 miles SSW of Île du Bic.

Good anchorage, sheltered from W winds, can be taken, in depths of 12.8 to 14.6m, mud, with the N point of Île du Bic bearing 263°, distant 1 mile.

When strong N winds blow during the autumn, the best anchorage lies about 0.5 mile off the SE shore of Île du Bic, about midway along its length.

With E winds, the most comfortable anchorage lies a little more than 0.5 mile S of Île du Bic Light, in a depth of 12.8m, sand and mud. There is less wind and considerably less sea here than elsewhere.

A conspicuous microwave tower, 216m high, stands on the coast about 0.5 mile SE of The Notch.

9.40 The coast for about 2.5 miles W of La Muraille consists of almost perpendicular cliffs, 152 to 182m high, terminating at Pointe a la Cive (Pointe a Cives).

A rocky patch, with a depth of 9.1m, lies almost 3 miles WNW of Pointe a la Cive. Another shoal, with a depth of 5.8m, lies about 1 miles N of this patch.

St.-Simon-de-Rimouski, a village grouped around a church with a spire, stands about 6 miles SW of Pointe a la Cive and 1 mile inland. A conspicuous white cross is situated near the shore about 1.5 miles NW of the church.

Île Rasade Nord-Est (48°12'N., 69°08'W.), small and low, stands about 9 miles SW of Pointe a la Cive and 1.5 miles offshore. Île Rasade Sud-Oest lies 1.5 miles SW of the above island and is also small and low. These islets are each rocky with grass, but no trees. A conspicuous stone cross stands near the SW end of Île Rasade Sud Ouest.

The coast between Île Rasade Nord-Est and Île Verte, about 13 miles SW, is generally low with shallow coastal indentations. The land rises in long ridges to the back ranges which have elevations of up to 300m, with no conspicuous summits. The shore is bordered by extensive flats, most of which dry, exposing large boulders.

9.41 Trois Pistoles (48°07'N., 69°10'W.), a town on the S shore about 13 miles SW of Pointe a la Cive, is marked by a grayish colored church with three spires, one taller than the others. This church can be seen for a considerable distance, especially when the sun shines on it. A pier, with a NW and NE arm at its head, extends from the shore abreast the town. The outer end of the pier dries at LW. Lighted beacons, in line bearing 137°, lead into the pier.

Good anchorage for small vessels can be taken, in a depth of 5m, sand and mud, with Île aux Basques Light bearing 243°, distant 1 mile.

Riviere-Trois-Pistoles, a village with a church with a spire in it, stands 2.5 miles SW of Trois-Pistoles. A microwave tower stands about 0.8 mile N of the village. A small wharf, with shallow depths, extends from the shore abreast of the village.

Île aux Basques (48°08'N., 69°15'W.), thickly wooded and 40m high to the tops of the trees, stands 3 miles W of Trois-Pistoles. A sandy spit extends 0.4 mile SE from the SW end of the island.

Île aux Pommes, grass covered and 13m high, stands 2.75 miles SW of Île aux Basques. It is composed of sandstone and covered with grass, but has no trees on it.

Small craft can anchor, in about 5m, about 0.4 mile off the NE end of Île aux Pommes.

Between Trois-Pistoles and Île Verte, about 9 miles SW, drying flats marked by numerous large boulders extend a considerable distance offshore.

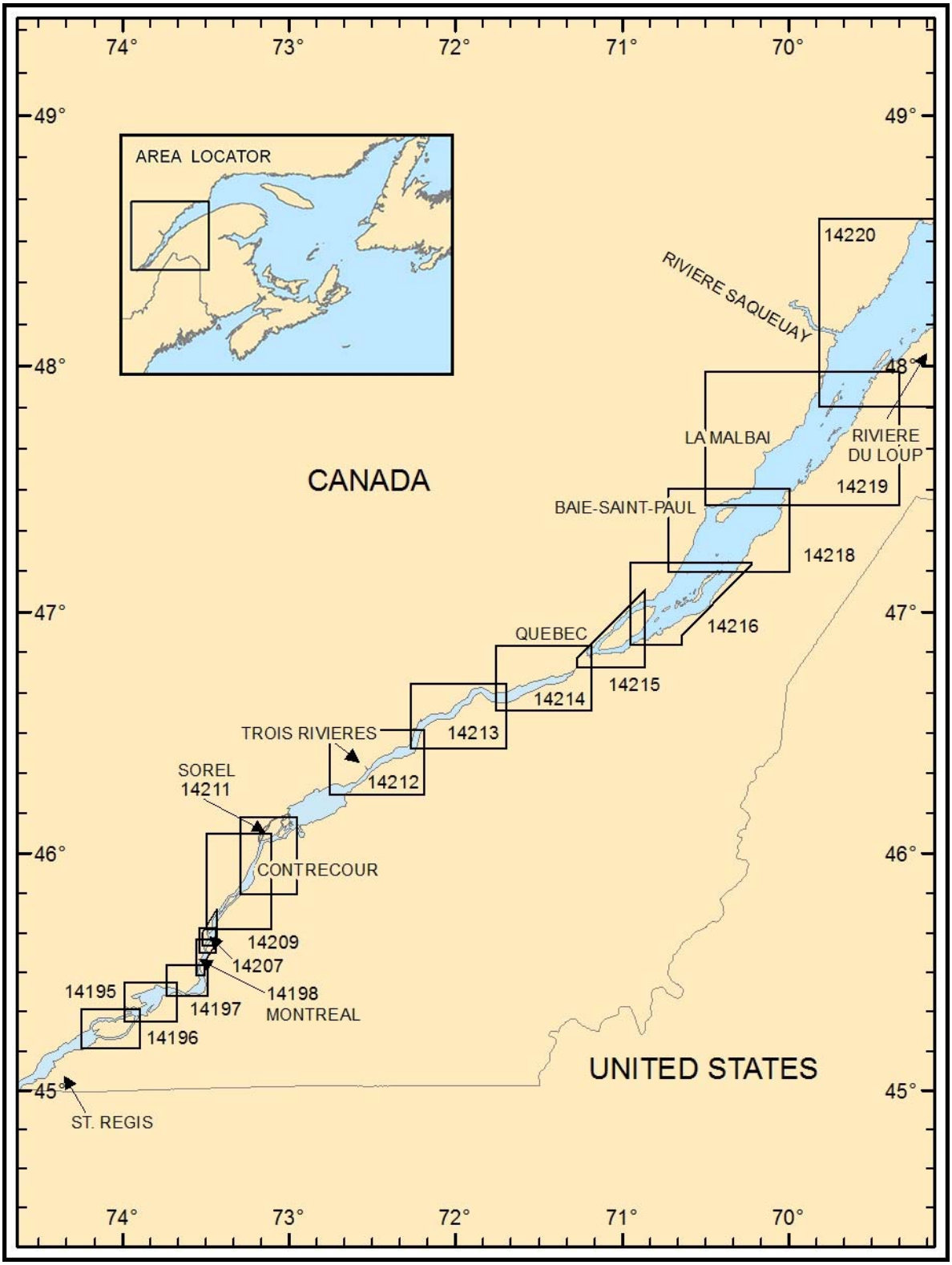
9.42 L'Isle-Verte (48°01'N., 69°20'W.), a small village, stands on the mainland abreast Île Verte, which is described in paragraph 10.18. A gray church with a red roof and a gray spire, stands on the low land below the village. A pier extends about 457m from the shore abreast of the village and has a depth of 3.4m alongside its outer end at HW.

Île Ronde, 23m high, lies on the flats about 1.5 miles WNW of the outer end of the pier at L'Isle-Verte.

The shore NE of L'Isle-Verte is low and swampy. Earth cliffs, 15 to 30m high, back the shore for about 4.5 miles. The shore to the SW is also low, but it is backed by a narrow coastal ridge of wooded hills about 80m high.

There is good anchorage in Rade de L'Isle Verte N of the island of Île Verte. A good berth lies, in a depth of 10m, lies with Île Verte East End Light bearing 148°, distant about 1 mile. The bottom is stiff mud. Smaller vessels anchor closer in.

Note.—The S shore of the St. Lawrence River, W of L'Isle-Verte, is described beginning in paragraph 10.18.



Additional chart coverage may be found in NGA/DLIS Catalog of Maps, Charts, and Related Products (Unlimited Distribution).

SECTOR **10** — CHART INFORMATION

SECTOR 10

THE ST. LAWRENCE RIVER—THE RIVIÈRE SAGUENAY TO CORNWALL

Plan.—This sector describes the Rivière Saguenay first and is followed by a description of the St. Lawrence from Ilet Rouge to Montréal Harbor and includes the St. Lawrence Seaway approach to and including Cornwall. The descriptive sequence is WNW through the Rivière Saguenay and then SW along both banks of the St. Lawrence River.

General Remarks

10.1 The Rivière Saguenay is entered on the NW shore of the St. Lawrence River about 6 miles WNW of Ilet Rouge and is described in the first part of this sector.

The NW shore of the St. Lawrence River from the Rivière Saguenay to Île aux Coudres, about 50 miles SSW, is generally bold and backed in places by mountains which rise to elevations of 304 to 457m.

The SE shore of the river between Île Verte and Point Ouelle, about 47 miles SSW, is backed by hills of moderate height which rise gradually from the river. Several islands and areas of foul ground lie close offshore and in the middle of the river up to 30 miles SSW of Îlet Rouge.

Several towns and anchorages lie along this shore, but there are no large ports of any commercial importance to be found along either the N or S shores of the river.

The St. Lawrence River above Cap St. Joseph and Pointe de la Rivière Ouelle, about 12.5 miles to the E, extends in a general SW direction for about 53 miles to Quebec Harbor. The greater part of the river is fouled by islands, shoals, and other dangers. The largest islands are Ile aux Coudres, Île aux Grues, Île aux Oies, and Île d'Orleans, which narrow the river in the approaches to the Quebec Harbor channels that lead through the shoal area in the N part of the river; Chenal du Nord is the preferred and easiest channel to navigate. Chenal du Sud is more intricate, but is marked by navigational aids; however, it is now little used. The middle channel lies between the above channels and is the least preferred, as it is too intricate and requires local knowledge.

Chenal du Nord and Chenal du Sud unite off the SE side of Île d'Orleans, and the channel S of that island leads in great depths to Quebec Harbor. Chenal de l'Île d'Orleans lies between Ile d'Orleans and the mainland to the NW and is a good passage for small vessels drawing less than 4.6m.

Several villages, some with piers extending from them, stand on both banks of the river, but none have any significant commercial importance to shipping.

Winds—Weather.—During the navigation season in the St. Lawrence River, the winds generally follow the course of the high land on either side of the river valley. The general direction of the winds is NE or SW. In the fall of the year, frequent and violent NW squalls blow off the mountains on the NW side of the river.

Fog is not as frequent in the St. Lawrence River as in the gulf. Fog is usually only prevalent in the autumn and winter, although it is likely to accompany an E wind at any time of the year.

Ice.—Ice prevails in the area covered by this sector. In general, Chenal du Nord frequently remains ice free for some time after Chenal du Sud becomes unnavigable.

Tides—Currents.—The currents of the St. Lawrence River are influenced by the stages of the tide, and in the vicinity of Îlet Rouge, by the Rivière Saguenay and the shoals in the area. The currents, being of a tidal nature, will be described in detail with the related features which they affect.

Pilotage.—Pilotage is compulsory in the St. Lawrence River and for all St. Lawrence ports, including the Saguenay River from Les Escoumins. See paragraph 9.28 (Anse aux Basques) for further information.

Regulations.—Vessels must obtain clearance to transit the St. Lawrence Seaway after operating beyond the Exclusive Economic Zone. For further information, see paragraph 9.1

A Vessel Traffic Services Zone has been established in the St. Lawrence River. See paragraph 8.1 for further information.

Caution.—Because of continuous dredging operations in the channels, buoy positions may be temporarily or permanently altered, and lighted buoys occasionally placed. Canadian Notice to Mariners should be consulted and buoy numbers, colors, and marks carefully observed.

Fishing shanties are established annually on ice from Ile **Saint-Louis** (48°15'N., 70°01'W.) to **Chicoutimi** (48°26'N., 71°04'W.), including **Baie des Ha Ha** (48°20'N., 70°50'W.). Mariners should take all necessary measures to avoid the drifting of the installations and should reduce speed between Ile Saint-Louis and **Cap Eternite** (48°18'N., 70°17'W.).

St. Lawrence Seaway Required Pre-entry Information

10.2 Vessels shall provide the following information on a separate sheet for each upbound voyage via fax to the Traffic Control Center of the Saint Lawrence Seaway Development Corporation at Messena, New York at least 96 hours prior to initial Seaway inspection or 96 hours before westbound entry of the St. Lawrence Seaway at CIP 2 in Montréal:

1. Vessel's name and Lloyd's Register Number.
2. Flag of registry and name of Classification Society.
3. Call sign.
4. ETA at Montréal.
5. Owner's name.
6. Operator's name.
7. Last port.
8. List all Great Lakes ports of destination.
9. Ballast water—State the location of all ballast water within the vessel, the ports where it was originally taken on, and the locations (latitude and longitude) where the ballast was exchanged.
10. Date and location of last Port State Control Exam (Paris MOU).
11. Date—location of last U.S. Port State Control Exam.

12. Date and expiry of U.S. Certificate of Financial Responsibility.
13. Shipboard Oil Pollution Emergency Date.
14. Has USCG self examination been completed? (maximum 7 days prior to entering Seaway at CIP 2) List all outstanding items. (**Note.—**The original completed and signed copy is to be retained on board.)
15. ISM (Ship Safety Management Code):
    a. Expiry date of Document of Compliance.
    b. Expiry date of Ship Management Certificate.
    c. Name of accrediting agency.
16. Crew list.
17. Cargo list.

The information provided to the Saint Lawrence Seaway Development Corporation, Messena, New York and the Saint Lawrence Seaway Management Corporation, Cornwall, Ontario will be shared for security purposes with U.S. and Canadian agencies involved in security of the Great Lakes/Saint Lawrence Seaway System.

Further information on the condition of shipping of the main shipping channel in the St. Lawrence River can be obtained from the Canadian Coast Guard at the following web site:

Canadian Coast Guard
http://www.marinfo.gc.ca

The Rivière Saguenay

10.3 The **Rivière Saguenay** (Saguenay River) (48°08'N., 69°41'W.) is entered on the N shore of the St. Lawrence River between Pointe aux Vaches and Pointe aux Alouettes.

For the first 50 miles above its mouth, the Rivière Saguenay resembles a long and narrow mountain lake. In this section, the river is from 0.6 to 2 miles wide, flowing through a deep valley lying transversely to the St. Lawrence and formed by mountains of syenitic granite and gneiss. The mountains rise more or less abruptly from the river and form in places precipitous headlands over 305m high. The promontories, seen one beyond the other up the magnificent reaches of the river many miles in length, are wild, barren, and picturesque. The granitic hills are generally quite bare, but the valleys, through which rapid tributary streams descend, are filled with a deep deposit of sand and clay, and are thickly wooded.

In its first 50 miles, the water of the Rivière Saguenay is almost as deep as the mountains are high. For the greater part of the way from Pointe Noire to Baie des Ha Ha, there are depths of 183 to 274m. Although this part of the river is generally very deep, there are occasional anchorages some miles apart.

The Rivière Saguenay is about 93 miles in length; it is navigable for about 68 miles or 6 miles above Chicoutimi. It has deep water up to **Cap des Roches** (48°27'N., 70°54'W.). From there to Chicoutimi, a distance of about 8 miles, a channel has been dredged. Above Chicoutimi, the channel is shallow and intricate, and suitable only for small craft. Local knowledge is required.

Port Alfred, in Baie des Ha Ha, about 54 miles upriver and Chicoutimi, about 17 miles above Baie des Ha Ha, are commercially important to shipping.

Ice.—There is ice in the Rivière Saguenay from mid-December until the end of March. The ice covers the whole width of the river and forms fast ice attached to the shore. Vessels have to be ice strengthened.

Tides—Currents.—Tidal currents of variable direction are encountered in the mouth of the Rivière Saguenay, with rates of 6 to 7 knots at spring tides. On the changes of tidal currents, there are heavy tide rips over the bar at the entrance to the river. When the ebb tide is coincident with an E gale, a particularly dangerous cross sea is raised, which is dangerous for small craft. With strong NW winds during the flood, the sea becomes very choppy with breakers.

Above the entrance the flow is predominantly outgoing. The effect of the incoming tidal current is soon lost, except as a weak current close to the shore, perhaps at a depth of several meters.

From Anse St. Jean, about 22 miles above the river entrance to Cap des Roches, about 33 miles farther upriver, the surface current is never strong. In many parts of the river there is a a sudden and variable undercurrent to depths of 20m, especially during springs. These current variations are caused by obstructions such as rocks, shoals, the shoreline or a wharf, at which time the current may be decreased, deviated or increased. It is strong with the flood, but barely perceptible during the ebb.

From Cap des Roches to the entrance of the Rivière Chicoutimi, the current is steady and even, in some parts setting on to the shoals, but without any undercurrent. At spring tides, a large body of water passes over the Chicoutimi shoals, at a very rapid rate during the ebb tidal current, and falling suddenly into deep water seems to strike downwards at once leaving but a slight current on the surface.

Depths—Limitations.—The Rivière Saguenay from its entrance to within 0.5 mile of the dredged channel leading to Chicoutimi has a least depth of 60m, with a least depth of 6.1m to Pointe L'let Oil Terminal, and then a depth of 6.1m to Chicoutimi. The shores of the river are steep-to, with depths of 183m and more being found close offshore in the greater part of the river.

Within the river there are no off-lying dangers. The dangers at the entrance and between Cap des Roches and Chicoutimi are described together with the related features.

The Rivière Saguenay—Entrance

10.4 The Rivière Saguenay entrance lies between the foul ground extending E from Pointe aux Vaches and Pointe aux Alouettes, about 2.8 miles to the SSW.

Pointe aux Vaches (48°08'N., 69°40'W.) was previously described in paragraph 9.30. Pointe aux Vaches Reef, which dries, lies within 0.5 mile SE and S of the point. Foul ground extends up to 1 mile E and 0.35 mile S from this reef.

Vaches Shoal, with a least depth of 4m and rocky, lies between 1.5 miles and 2 miles ESE of Pointe aux Vaches. Rochers du Saguenay, a rocky bank with depths of 10.4 to 18.3m, lies about 3 miles E of Pointe aux Vaches.

Pointe aux Alouettes (48°06'N., 69°42'W.), the S entrance point to the river, is composed of cliffs about 23m high. Batture aux Alouettes, a large area of drying foul ground, lies within 0.75 mile N, 1.25 miles E, and 3 miles SSE of the point. Ilet aux Alouettes, marked by a beacon, stands on the N side of the foul ground about 1 mile ENE of Pointe aux Alouettes.

Haut fond Prince (Prince Shoal) (48°06'N., 69°37'W.), marked by a light, with a least depth of 4.9m and rocky, lies with its outer extremity about 3 miles E of Ilet aux Alouettes.

Recif Bar (Bar Reef), with depths of less than 5.5m and a least depth of 2.1m, lies between Haut fond Prince and Ilet aux Alouettes.

A bar, with depths of 11.3 to 18.3m, extends across the entrance to the Rivière Saguenay from Vaches Reef to Recif Bar.

10.5 Pointe Noire (48°07'N., 69°43'W.), about 1.5 miles NNW of Pointe aux Alouettes, is precipitous and steep-to. A conspicuous white granite patch marks the cliffs S of the point. Baie Ste. Catherine lies between the two points.

A pair of lighted beacons, in line bearing 273° and visible only when in alignment, stands on Pointe Noire and leads through the entrance in a least depth of 11.3m to the deep water off Baie Ste. Catherine. Deep-draft vessels should keep a little N of this range to avoid the 5.5m patch at the N end of the shoal ground extending NNE from Ilet aux Alouettes.

Vessels should proceed with caution and at a slow rate of speed when passing the ferry crossing about 0.5 mile WNW of Pointe Noire.

Baie Ste. Catherine, with depths of 20 to 89m in its central part, is backed by cliffs of moderate elevation. A pier, with a head about 34m long at its outer end, extends from the W side of the bay. Depths alongside the head range from 3.7m at the W end to 8.5m at the E end. A light is exhibited from the pier head.

Anchorage can be taken off the end of the pier, in a depth of 33m. This anchorage is out of the currents, but is exposed to E winds, which cause a considerable swell to set into the bay.

Saint Firmin Village stands on the SW shore of the bay. A church, with a conspicuous spire, stands on a cliff in back of the village. Two flagstaffs stand close by.

Pointe Rouge, the E entrance point of Baie de Tadoussac, stands about 1 mile W of Pointe aux Vaches and is bold and steep-to.

10.6 Baie de Tadoussac (48°08'N., 69°42'W.) is entered between Pointe Rouge and Pointe de l'Islet, a group of rocky islets on a drying bank about 0.8 mile to the W. There are general depths of 9.1 to 47.5m within the bay. A dangerous rock, depth unknown, lies about 300m S of the Tadoussac town coast.

Tadoussac (48°09'N., 69°43'W.) is located in the bay of the same name and includes the berthing facilities in this bay and those in Anse a l'Eau, a small inlet about 0.5 mile NW of Pointe de l'Islet. The port is now closed to commercial shipping. Details of the port are retained should the port re-open.

Tadoussac is also a Coast Guard Search and Rescue base.

Tadoussac—Berth Information		
Berth	**Length**	**Depth**
Government Wharf		
L'Anse a l'Eau (small cove W of Tadoussac)	54.8m	4.57m
North Face	41m	3.2m
East Face	77m	7.1m
South Face	31m	2.0m

Depths—Limitations.—The access channel can take vessels with a draft up to 9.14m. A drydock, 121.92m in length, for repairing and wintering schooners and tugs, can accommodate a maximum draft of 2.74m.

Aspect.—A white building, with a red roof and cupola and the largest of several hotels which stand in the village, is very conspicuous and can be seen for many miles from the SE. Three conspicuous spired churches also stand in the village.

Regulations—The marine park is an important gathering area for numerous species of marine mammals. Mariners must ensure that they comply with the Marine Activities in the Saguenay—St. Lawrence Marine Park Regulations. The Regulations provide a framework for marine activities in the park, such as recreational boating, to ensure adequate protection for whale populations. More specifically, when observing marine mammals, the speed must be reduced gradually to a full stop. It is forbidden to approach marine mammals closer than 200m, or 400m from an endangered marine mammal species such as the beluga or the blue whale. In order not to impede the observations carried out from the land sites, mariners are requested to navigate at least one nautical mile (1852m) off Cap de Bon-Désir and more than 0.22 nautical mile (400m) off Pointe-Noire. In addition, there are large concentrations of cetaceans just off the area between Grandes-Bergeronnes and Tadoussac. The conditions for navigation in this area may be difficult at times therefore mariners are requested to navigate with caution in order to avoid the risk of collision with observation boats.

Anchorage.—Anchorage can be taken in the middle of the bay, in depths of12.8 to 32.9m, clay and sand. Small vessels can find better shelter in the N part of the bay, in a depth of 13 to 15m.

The Riviere Saguenay—Pointe Noire to Pointe aux Crepes

10.7 The S shore of the river extends about 5 miles WNW from Pointe Noire and then 4.75 miles farther NNW to Pointe aux Crepes. The shores are steep-to and mountainous, and indented by several small inlets and one bay.

La Boule (Cap de la Boule) (48°09'N., 69°48'W.), a high round back hill forming a steep headland on the N shore of the river, lies about 4 miles WNW of Pointe Noire. Anse a la Boule, a small inlet with depths exceeding 36.6m, lies close E of the cape. An overhead cable, with a vertical clearance of about 92m, crosses the Rivière Saguenay about 0.5 mile above La Boule; during severe icing, the vertical clearance may be as little as 72m.

Anse de Ste. Etienne (48°12'N., 69°54'W.), a small bay about 1 mile wide between the entrance points, lies S of Pointe aux Crepes. The head of the bay is fouled by a drying flat which extends about 0.3 mile offshore. Anchorage can be taken within the bay, in depths of 18 to 55m, clay, off the edge of the

banks.

Anse a la Grosse-Roche (48°13'N., 69°53'W.) stands on the N shore of the river E of Pointe aux Crepes and serves the village of Sacre Coeur about 3 miles inland. A T-head pier, 30m long across its face, extends about 75m from the shore. Depths of 4.9 to 5.5m exist alongside the face.

The Riviere Saguenay—Pointe aux Crepes to Cap Trinite

10.8 The river between Pointe aux Crepes and Cap Trinite trends irregularly W and NW for about 18.5 miles and is steep-to and deep. This section of coast is indented by numerous bays and inlets, and bordered by a few off-lying islands.

The **Rivière Ste.-Marguerite** (48°15'N., 69°58'W.) discharges into a bay of the same name on the N shore of the river, about 3.5 miles NW of Pointe aux Crepes. Most of this bay dries. Small vessels load lumber here occasionally. Several overhead cables, with a vertical clearance of 49m, cross the river about midway between the Rivière Ste.-Marguerite and Pointe aux Crepes. The minimum vertical clearance at Anse de Tabatiere (48°17'N., 70°12'W.) is 33m under severe ice conditions.

Île St.-Louis (48°15'N., 70°01'W.) stands near the S shore of the river about 5 miles above Pointe aux Crepes and 0.25 mile offshore. Anchorage can be taken between the island and the shore, in depths of 18 to 55m, sand and mud. A light is exhibited from the N side of the island.

Île St.-Barthelemy (48°16'N., 70°03'W.) stands on the N side of the river, about 1 mile NW of Île St.-Louis and 0.1 mile offshore. Small vessels can anchor NW of the island, in depths of 15 to 27m, but space is very limited.

10.9 The **Riviere Petit-Saguenay** (48°14'N., 70°06'W.), with a village at its mouth, lies about 3 miles above Île St.-Louis on the S shore of the river. A T-head pier, about 44m long across the face, extends from the shore on the W side of the entrance to the river. The outer face has a depth of 4.4m alongside.

Anse St.-Jean is entered on the S side of the river between La Grande Point, about 2.5 miles NW of the mouth of the Rivière Petit Saguenay, and Pointe au Boeuf, about 1.8 miles farther NW. The head of the bay is bordered by drying flats. Anchorage can be taken within the bay, in depths of 15 to 55m, mud.

A pier, 121m long, extends from the S shore of the bay abreast of a village. The outer face of the pier is in ruins.

An overhead power cable crosses the river about 0.8 mile NW of Pointe au Boeuf. It has a vertical clearance of 61m; however, when the line is covered with 5cm of ice, the clearance can be reduced to 33m.

Baie Eternite (48°19'N., 70°19'W.) is entered between Cap Eternite, about 4.8 miles NW of Pointe au Boeuf, and Cap Trinite, about 1.8 miles farther NW. The bay extends about 1 miles SW and is deep. Sheltered anchorage can be taken within the bay, in depths of 15 to 55m, mud.

Pontoons, 24m long and 6m wide, are situated on the NW side of the bay, near the river entrance. One side of the pontoons is restricted to excursion boats; the other is for short visits. There are mooring buoys at the head of the bay.

The Riviere Saguenay—Cap Trinite to Port Alfred

10.10 Cap Trinite (48°19'N., 70°19'W.) rises to an elevation of 457m on the N side of Baie Eternite, and when seen from up or down river resembles three steps. A statue of the Virgin Mary stands on the lowest step while a cross stands on the second step.

La Niche, a remarkable hole in the cliffs, stands on the S shore of the river about 1.5 miles above Cap Trinite.

Tableau Nord (St.-Basile-de-Tableau) (48°22'N., 70°28'W.), a small village fronted by a pier in ruins, stands on the N shore of the river about 6.5 miles NW of Cap Trinite.

Cap Rouge, a prominent projection on the N shore, stands about 2.8 miles W of Tableau Nord.

Ste.-Rose-du-Nord (48°23'N., 70°35'W.), a village fronted by a pier, stands in a cove about 2 miles W of Cap Rouge. The short face of the pier has a depth of 4.9m alongside. Anchorage can be taken in the coves close E and W of Ste.-Rose-du-Nord.

Anse de la Croix, on the S side of the river about 3 miles SW of Ste.-Rose-du-Nord, has a short pier with a depth of 3.7m alongside its outer end at HW. The head of the cove is fringed by drying flats.

Cap de l'Est, a low point formed by a sharp bend in the river, stands about 2.5 miles NW of Anse de la Croix.

10.11 Baie des Ha Ha (48°21'N., 70°49'W.), a natural, deep harbor about 6 miles long, is entered between Pointe du Fort and Cap Ouest, about 3.5 miles W of Anse de la Croix. Four rivers empty into the bay at its SW extremity. The N shore and the central part of the bay are deep and clear of dangers. There is room for a considerable number of vessels, but the bay is open to E winds. There is an area of local magnetic disturbances on the N side of the bay. The S shore and the head of the bay is fringed by shoal ground which extends about 0.3 mile offshore. The Port Authority can be contacted by telephone (1-418-697-0250).

10.12 La Baie (Port Alfred) (48°20'N., 70°53'W.) (World Port Index No. 2110), standing at the head of Baie des Ha Ha is an important exporting center for the natural resources of the surrounding area. The port area includes the berthing facilities at La Baie and Bagotville. The residential district of La Baie, part of the city of Saguenay, lies at the WSW extremity of the bay. La Baie includes the former municipalities of Port-Alfred, Bagotville, and Grande-Baie. An aluminum manufacturing plant is located at La Baie. The wharf is rock filled on its E and W faces which form a jetty that ends with an outer face 20m long and drying completely.

Tugs are normally used to berth and unberth vessels within the port areas. La Baie is a port of entry.

Ice.—The average thickness attained by smooth shore fast ice at Bagotville is 0.83m. Break up normally begins during the last week of March, with the bay clearing of ice about mid-April. Freeze up usually begins during the early days of December with a solid ice cover forming before the middle of the month. One to four week's variation in break up and freeze up can occur. Two tugs assist ice breakers in winter, with ice in the Bay up to 1m thick. Ice advice is necessary for shipmasters without previous experience in the area in winter.

La Baie (Port Alfred)

Tides—Currents.—At La Baie, springs rise 5.6 to 6.3m, while neaps rise about 4.1m.

Depths—Limitations.—At La Baie, the aluminum company operates Powell and Duncan Wharves, and the paper company operates the Consolidated Bathurst Wharf. Berthing is difficult during NE winds.

Two wharves are located at Bagotville. The main wharf has an outer face 51m long, with a depth of 8.5m alongside. Lepage Wharf, to the W of the main wharf, is 91m long with a 24m outer face. A depth of 3m exists alongside this face.

The wharf at Grande-Baie, S of La Baie, is in ruins. For La Baie berth information refer to the table titled **La Baie (Port Alfred)—Berth Information**.

Aspect.—A sawmill stands about 0.4 mile S of Pointe du Fort. A conspicuous red cross, illuminated at night, stands close to a chapel on the hill behind the port area.

Pilotage.—Pilotage is compulsory. Pilots board vessels westbound at Anse aux Basque and board vessels eastbound at Quebec. Pilots must be requested 24 hours, 12 hours, and 6 hours in advance to ensure the availability of a pilot at Anse aux Basques. This notice must be confirmed 4 hours prior to arrival at the pilotage station. The above reports stating the ETA at the pilotage station and the vessel's net tonnage should be addressed to "Pilots Montréal." A vessel, with a minimum size of 50,000 dwt arriving or departing, is required to have a harbor pilot on board; however, any vessel can request the services of a harbor pilot.

La Baie (Port Alfred)—Contact Information	
Port Authority	
VHF	VHF channels 6, 7A, and 16.
Telephone	1-418-544-9670
Web site	https://www.riotinto.ca

Anchorage.—Anchorage can be taken off Anse a Phillipe, in the NW part of Baie des Ha Ha, by vessels awaiting a berth.

The Riviere Saguenay—Approaches to Chicoutimi Harbor

10.13 Chicoutimi Harbor comprises the tidal waters of the Rivière Saguenay W of a line drawn from Cap Ouest to the Rivière Pelletier, about 2.5 miles NNE, on the N shore. It extends upriver for about 4 miles above the Chicoutimi swing bridge. For practical purposes the harbor area ends at the swing bridge, because the channel upstream is very narrow and shallow.

The city of Chicoutimi stands at the head of deep-water navigation on the S shore of the river, about 15 miles above Cap de l'Ouest. Chicoutimi-Nord stands on the opposite shore. The town of Riviere-du-Moulin stands on the S shore close E of Chicoutimi.

Pointe aux Pins (48°25'N., 70°50'W.) is the S extremity of a high rocky headland extending from the N shore of the Rivière Saguenay, about 3.8 miles W of the mouth of the Rivière Pelletier.

La Baie (Port Alfred)—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Bagotville Wharf						
No. 1	374m	—	—	12.0m	—	Passengers.
Rio Tinto Alcan (RTA) — Port Alfred						
Duncan Quay No. 01	193m	11.8m	225m	11.7m	32.2m	Alumina, bauxite, petcoke, and breakbulk. Continuous berthing length of 386m.
Duncan Quay No. 02	193m	11.9m	244m	11.5m	32.2m	
Powell Quay No. 01	173m	9.7m	—	—	—	Closed.
Powell Quay No. 02	173m	10.9m	199.8m	9.2m	28.4m	Breakbulk.
Note.—Powell Quay No. 01 and Powell Quay No. 02 have a continuous berthing length of 346m.						
Powell Quay No. 04	146m	11.8m	244m	10.9m	30.0m	Petroleum products, alumina, bauxite, petcoke, and breakbulk.

The cove located immediately NNE of **Cap Jeseux** (48°25'N., 70°49'W.) gives access to the Parc regional du Cap-Jeseux.

Grande-Anse Marine Terminal is located in La Grande Anse, on the S side of the Rivière Saguenay opposite Pointe aux Pins. The wharf is 286m long and has a depth of 13.7m alongside. The terminal is open all year.

Saint-Fulgence, a village with a church in it, stands about 3 miles NW of Pointe aux Pins. A wharf in ruins fronts the village. There is good anchorage, in depths of 36.6m or less, on the N side of the river, between Pointe aux Pins and a position to the E of the spoil ground located about 1.5 miles SE of the church in Saint Fulgence.

The natural deep-water channel ends off Saint-Fulgence. From this point, a dredged channel with a least depth of 6.1m leads to Chicoutimi. The channel is at least 76m wide and about 107m or more on the curves. The channel is marked by lighted ranges and navigational aids.

Caution.—The channel from Saint-Fulgence to the area adjacent to the wharf at Chicoutimi is subject to silting. Therefore, there may be less depth than shown on the chart. The dredged channel downstream from the Maltais Wharf (Pointe a l'Islet) is maintained to the charted depth. The areas upstream from the Maltais Wharf are no longer maintained and filling can be expected. Depths of 5.2m exist in the dredged channel WNW of Pointe a L'Ilet.

10.14 Port Saguenay (Chicoutimi) (48°26'N., 71°04'W.) (World Port Index No. 2130), Chicoutimi-Nord, and the town of Rivière-du-Moulin collectively form a comparatively large industrial complex for the products of the surrounding area. Principal imports and exports are coal, granite, lumber, petroleum products, salt, paper, logs and wood pulp. The town of Saguenay (formerly Chicoutimi) no longer has any commercial quays. The main port area is situated at Grande-Anse Marine Terminal, located 54 miles from the junction of the Saguenay River with the St. Lawrence. There is also the Albert-Maltais Petroleum Terminal, close E of the town. There is year round navigation.

At Chicoutimi Old Port wharf runs parallel to the Saguenay south shore and is located at the head of the city, 1 mile west of Rivière du Moulin. A fountain emerges from the water near the west extremity of the wharf. A division of Canada's Naval Reserve is located in the area.

Tides—Currents.—As Chicoutimi is on the river 8 miles above the head of the open inlet formed by the lower Saguenay, the tidal range is reduced somewhat by the river slope, especially during the freshet months, which are usually from April to the end of July. During this period, there may be a strong seaward flow of water, which reinforces the ebb current and can at times overcome the flood current.

At Chicoutimi, the rate of the ebb current depends upon whether the flood gates upriver are opened or closed. It has been reported that during the freshet there is no flood current, and the maximum ebb rate is about 4 knots.

Depths—Limitations.—A turning basin adjacent to this wharf is 762m long and 221m wide, with a dredged depth of 9.1m.

The navigation season is from mid-April to mid-December.

The area between the berth and the main channel has been dredged (1979) to a depth of 6.1m. Dredging is carried out periodically but the channel is subject to silting.

Two bridges span the Rivière Saguenay above the Ports Canada Wharf. The first is a swing bridge with an opening width of 23m; close upstream is a fixed bridge with a vertical clearance under the center span of 6.7m. The channel upstream of these bridges is suitable only for small craft; local knowledge if required.

Aspect.—Range lights, most of which are visible only when in alignment, range beacons, and lighted buoys mark the channel to Chicoutimi.

Pointe aux Pins is the S extremity of a high rocky headland projecting from the north shore of the Saguenay. Pointe aux Pins light, shown from a tower, is on the point.

Poste-Saint-Martin Range lights are in line bearing 287 ½°. Each light is shown from a tower; the lights are on both shores of the Saguenay River, approximately 3 miles above Saint-Fulgence. These lights are visible only when in alignment.

Rivière Valin Range Lights are in line bearing 314°. Each light is shown from a tower, situated on the N shore close E of the mouth of Rivière Valin. These lights are visible only when in alignment.

Rivière Caribou Range Lights are in line bearing 283½°. Each light, shown from a tower, situated on the north shore, close E of the mouth of Rivière Caribou. These lights are visible only when in alignment.

Port Saguenay—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Vieux-Port de Chicoutimi			
Vieux Berth	838m	8.2-8.8m	Naval Reserve and tour boats.
Grand Anse Servitank Dow Chem.			
Servitank	286m	13.8m	Petroleum products, general cargo, and passengers.
Albert-Maltais Petroleum			
Albert Maltais Tanker Berth	40m	9.1m	Berth is closed. Mooring dolphins, marked by lights at its E and W ends, stand 91m from each end of the berth, allowing a maximum vessel length of 137m. Vessels up to 10,000 dwt, with a maximum draft of 7.8m, can be accommodated.

Simard Range Lights are in line bearing 256°. Each light, shown from a tower, is situated on the north shore, 0.5 mile SW of the mouth of Rivière Caribou. The rear light is visible only when in alignment.

Rivière-du-Moulin Lower Range Lights are in line bearing 215°. The front light, shown from a tower, is situated on the S shore near the residential district of Rivière-du-Moulin. The rear light is shown from a tower.

Rivière-du-Moulin Upper Range Lights are in line bearing 081½°. The front light, visible only when in alignment, is shown from a tower situated on the S shore near Rivière-du-Moulin. The rear light is shown from the same structure as the rear light of Rivière-du-Moulin Lower Range Light.

Pilotage.—Pilotage is compulsory. Vessels bound to the W from the Gulf of St. Lawrence board pilots at Anse aux Basques pilot station and vessels bound E board pilots at Quebec. Pilots must be requested 24 hours, 12 hours, and 6 hours in advance to ensure the availability of a pilot at Anse aux Basques. This notice must be confirmed 4 hours prior to arrival at the pilot station. The above reports giving the ETA at the pilot station and the vessel's net tonnage should be addressed to "Pilots Montréal."

The pilot station for vessels upbound to Chicoutimi is located at Anse aux Basques, charted 2 miles SW of Les Escoumains Wharf on the N shore of the St. Lawrence River. Two pilot boats are constantly on service.

The master of every vessel inbound in the Gulf of St Lawrence and destined for ports W of Escoumins must report their ETA to pilotage in Montréal via Vessel Traffic Services, on VHF channel 14, or by other means of communication to Sept-Îles radio station "VCK", giving ETA and other pertinent information required to Escoumins pilot station.

Regulations.—There is a speed limit of 7 knots when within 2 miles of the port facilities.

There is a migratory bird sanctuary in the area of Battures de Saint-Fulgence; access regulations apply to this protected area.

Contact Information.—See the table titled **Port Saguenay—Contact Information**.

Port Saguenay—Contact Information	
Port Authority	
Telephone	1-418-697-0250
Facsimile	1-418-697-0243
E-mail	nfo@portsaguenay.ca
Web site	http://www.portsaguenay.ca

Anchorage.—Good anchorage can be taken, in a depth of 29.3m, with the church in Saint-Fulgence bearing 142°, distant about 1.5 miles. Good anchorage can be taken between Saint-Fulgence and Pointe aux Pins off the N shore of the river, in a depth of 36.6m or less.

Except in an emergency, no vessel shall anchor within the harbor limits without the prior approval of the Port Manager, and then only in an assigned berth.

Caution.—At Chicoutimi, two bridges span the Saguenay River close above the Chicoutimi wharf. Approximately 244m above this wharf, the first bridge, with a vertical clearance of 3.1m, crosses from Chicoutimi to Chicoutimi-Nord; private air obstruction lights are shown from the bridge span. A crib in ruins is just above and below the bridge.

Close above the afore-mentioned bridge, there is a second bridge. It is a fixed highway bridge which stands on six piers 73m apart. The minimum vertical clearance under the center span of the bridge is 7.8m. Above these two bridges the river channel is suitable only for small craft; local knowledge of the channel is essential for safe navigation. Further upstream, navigation is no longer possible due to the Shipshaw Hydro-Power Dam facilities.

Northwest Shore of the St. Lawrence River—The Rivière Saguenay to Cap au Saumon

10.15 Pointe aux Alouettes (48°06'N., 69°42'W.), the S entrance point to the Rivière Saguenay, and Batture aux Alouettes, which extend offshore from this point, have been previously described in paragraph 10.4.

The NW shore of the St. Lawrence River between Pointe aux Alouettes and Cap au Saumon, about 21 miles SSW, is mountainous, irregular, and indented by numerous inlets and bays. There are no ports of commercial importance.

Several islands with areas of foul ground lie in midstream from about 7 miles E of Pointe aux Alouettes to about 7 miles S of Cap au Saumon, a distance of about 30 miles. The foul ground is about 2 miles wide. There is a 5.5 mile passage in the N part.

Île Rouge (48°04'N., 69°33'W.), about 5.2m high, stands near the S end of Bancs l'Ilet Rouge, about 6.5 miles ESE of Pointe aux Alouettes. Several buildings, a flagstaff, and two beacons stand on the islet.

Bancs de l'Île Rouge (48°05'N., 69°33'W.), an extensive area of foul ground, is about 3.5 miles long and 2 miles wide. This bank, which stands about midway between Ile Verte and the mouth of the Rivière Saguenay, is the NE termination of the banks which extend about 30 miles to the SW dividing the river into Chenal du Nord and Chenal du Sud.

Île aux Lievres (Hare Island) (47°51'N., 69°44'W.) stands about 9.5 miles SSW of Ilet Rouge. This long, narrow island is bordered by foul ground which extends about 0.3 mile off its W side and up to 1.5 miles off parts of its E side. Foul ground, with drying flats on its S part, extends about 5.5 miles NNE from the N end of the island. Ile Blanche (White Island), about 12.2m high, stands about in the middle of this drying flat.

10.16 Recif de l'Île aux Fraises (Hare Island South Reef) (47°45'N., 69°48'W.) begins about 2 miles SW of Ile aux Lievres and extends about 2.8 miles farther in the same direction. Several small islets stand on this drying reef. The passage between the island and the reef is shoal and available only to small vessels with local knowledge.

Banc de l'Îlet aux Lievres (Hare Island Bank) (47°42'N., 69°51'W.) extends about 5.5 miles SSW from Recife de l'Ile aux Fraises.

Tides—Currents.—In the vicinity of Ile Rouge the tidal currents attain a velocity of 3 knots during the flood and 4.5 knots during the ebb with average tides. During springs, the velocities increase to 5 to 7 knots.

The flood current sets upriver between Ilet Rouge and the

shore, and through Chenal du Nord from 3.5 to 5 hours after LW at Pointe au Pere. It then joins the current from Chenal du Sud and sets W through the passage between Ile Rouge and the reef N of Ile aux Lievres as far as mid-channel until 2 hours after HW. The flood current from Chenal du Sud greatly predominates and sets the current in the passage W of Ile Rouge onto Recifs aux Alouettes.

The ebb current commences at the N end of the reef extending NNE from Ile aux Lievres 2 to 3 hours after HW at Pointe au Pere. It sets through Chenal du Nord between Ile Rouge and Recifs aux Alouettes and sets across Ile Rouge Bank. There is a continuous set across the N part of the reef extending NNE from Ile aux Lievres during the ebb and flood currents.

Dangerous tide rips occur at the meeting of the ebb and flood in the vicinity of Ile Rouge, Recifs aux Alouettes, and N of the reef extending NNE from Ile aux Lievres.

Along the NW side of Chenal du Nord, there is no inshore or offshore set at an offing of about 1 mile. Inshore of the S sides of Cape Dogs and Cap au Saumon eddies occur during the ebb. Tide rips are set up and extend about 0.5 mile offshore. The flood attains a velocity of 0.5 to 1.5 knots and the ebb 2.5 to 3 knots.

10.17 Cap du Basque (48°00'N., 69°45'W.), about 6 miles SSW of Pointe aux Alouettes, is a steep-to mountainous headland. An island lies off a small cove about 1.5 miles N of the cape.

Rade du Basque lies between the SW side of Batture aux Alouettes and Cap Basque, and provides sheltered anchorage with Île du Chafaud aux Basques, lying about 1.5 miles N of Cap du Basque, bearing 259°, distant 1 mile. The depth here is about 17m, clay and stiff mud. A wreck, with a depth of 33m, lies about 4.8 miles E of Cap du Basque, about 1 mile N of le Blanche Reef K9 Buoy.

Baie des Rochers indents the shore about 3 miles S of Cap Basque and dries.

Cap de la Tete au Chien (Cape Dogs) (47°55'N., 69°48'W.), about 5.8 miles SSW of Cap Basque, is bold, precipitous, and steep-to.

Between Cap de la Tete au Chien and Cap au Saumon, about 9.5 miles SSW, the shore is mountainous and steep-to. Several lumber-loading places can be found in the inlets along this shore. Port aux Quilles (Shettle Port), about 2 miles SW of Cape de la Tete au Chien, is a small shoal bay.

St. Simeon (47°50'N., 69°52'W.), about 3.3 miles SSW of Port aux Quilles, has a wharf consisting of two piers. The N pier (public) is L-shaped and 120m long; its outer face is 46m long, with depths of 6.1 to 6.7m alongside. The N side of the pier is protected by boulders. The S side provides shoaling depths of about 1.6m at the outer end and dries at the inner end.

Saint Simeon is the terminal for ferry service to Rivière du Loup.

A very conspicuous church spire, 140m high, stands in the village.

Port-au-Persil, a small lumber exporting port, stands on the N shore of a cove about 2 miles N of Cap au Saumon. The public wharf is in ruins.

Note.—The N coast of the St. Lawrence River, W of Cap au Saumon, is described in paragraph 10.22.

Southeast Shore of the St. Lawrence River—Île Verte to Pointe Ouelle

10.18 Île Verte (48°03'N., 69°25'W.), a long narrow island fringed by foul ground, stands about 1 mile off and parallel to the SE shore of the St. Lawrence River. A drying flat lies between the island and the mainland. Two piers extend from the E side of the island.

The SE shore of the St. Lawrence River extends about 47 miles SE from Île Verte to Pointe Ouelle and is indented by numerous rivers and bays that dry. Many islands lie parallel to the shore and are mostly connected to the mainland by drying shoals. Foul ground extends up to 3 miles W from the shore in places and about 2.8 miles E from the islands in mid-river.

Chenal du Sud lies between the islands in mid-river and the mainland to the SE.

The **Îles du Pot a l'Eau de Vie** (Brandypot Islands) (47°52'N., 69°41'W.), three small islands, lie on the foul ground which extends E from Île aux Lievres. Chenal Pot a l'Eau de Vie (Brandypot Channel) lies between the foul ground extending E from Île aux Lievres and Middle Bank, Middle Shoals, and Brissants Barrett on the SE side. This channel is only open at its NE end.

Brissants Barrett (47°53'N., 69°37'W.), two sunken rocks with a least depth of 1.8m, lie on the E side of the N entrance to Chenal Pot a l'Eau de Vie.

Middle Bank, with depths of 4.1 to 9.1m, extends S from Brissants Barrett to join the foul ground extending E from the S end of Île aux Lievres. Middle Shoals, with a least depth of 1.5m, lie on the N part of the bank, about 1 mile S of Barrett Ledges.

Les Pelerins is the outermost danger along the SE shore bordering Chenal du Sud and is described in paragraph 10.20.

Tides—Currents.—The flood current occurs off Ile Verte about 4 hours after LW at Pointe au Pere, and off Île au Lievres about 2 hours after LW at Pointe au Pere. The velocity of the flood current diminishes during springs from 3.5 knots SW of Île Verte to 1 knot off the Îles de Kamouraska.

The flood current sets along both sides of Ile Verte and over the reef extending S from it, setting up heavy tide rips at the meeting of the currents S of the island. The greater portion of the current sets W across the reef N of Île aux Lievres to Chenal du Nord; the remainder sets into the other two channels.

The ebb current occurs in Chenal du Sud about 2 to 2.5 hours after low water at Pointe au Pere. The current weakens along the banks as the shoals dry and is almost negligible in depths of less than 5.5m.

Northeast of the reef N of Île aux Lievres, heavy tide rips are set up when the ebb currents of Chenal du Nord and Chenal du Sud meet and also at the meeting of the flood and ebb currents.

Between the Rivière Verte and Pointe de la Rivière du Loup the low SE shore extends and is indented in places by drying coves. Foul ground borders this section and extends up to 1.5 miles offshore in places. A pier, with a depth of 2.9m alongside, extends from the shore about 2.5 miles ENE of the S end of Ile Verte.

Anchorage can be taken S of Ile Verte, protected from E winds, in depths up to 11 to 14.6m, mud, with Cacouna Rock S of Île Verte bearing 167°, distant 0.7 mile.

Note.—During the winter, buoys marking Chenal du Sud are removed.

10.19 Île du Gros Cacouna (Le Gros Cacouna) (47°56'N., 69°30'W.), 86m high, lies with its NE end about 2 miles S of Île Verte. The peninsula is joined to the S shore by swampy grasslands, across which a causeway is laid. The island is of gray rock, wooded, and faced by cliffs along the NW side. It is very conspicuous, as it stands out clearly against the gradual rise of the mainland.

Port du Gros Cacouna (47°56'N., 69°31'W.), an artificial harbor enclosed by breakwaters, extends 0.5 mile from the SW end of Île du Gros Cacouna, with its entrance in the SW corner. Occasional icebreaker assistance may be required in winter. The NE part of the harbor dries. The entrance is 170m wide with a depth of 10.2m.

Aspect.—Range lights, in line bearing 082° and visible only when in alignment, lead through the breakwaters into the harbor.

A very conspicuous church, with two spires 51m high, stands in the village of St. Georges de Cacouna, on the mainland close S of Port du Gros Cacouna.

Port du Gros Cacouna—Berthing Information		
Berth	**Length**	**Depth**
Transport Canada Wharf Terminal		
North Berth	280m	10.2m
South Berth	280m	10.2m

Contact Information.—See the table titled **Port du Gros Cacouna—Contact Information**.

Port du Gros Cacouna—Contact Information	
Harbormaster	
Telephone	418-867-1784
Facsimile	418-867-4632
Email	portgroscacouna@bellnet.ca

Anchorage.—There is good anchorage between the SW end of Île Verte and Rocher de Cacouna, 2 miles SSW.

Caution.—A wreck with a known depth of 22m lies about 2.3 miles W of the breakwater head.

10.20 Pointe de la Rivière du Loup (47°50'N., 69°34'W.) stands about 5 miles SSW of Port du Gros Cacouna. At the point a public wharf, in ruins, extends 366m W from the shore. Close N of the public wharf, a jetty extends 305m W from the shore, with a ferry berth 76m long on its S side.

The ferry berth is within the dredged area, and is also liable to silting. It has depths of 3 to 4.6m alongside the outer part.

In 1993, it was reported that the public wharf was closed to navigation and the port no longer used for commercial shipping.

A marina, protected by a breakwater, is situated between the two wharves in the inner part of the harbor. Due to silting, depths may be less than shown on the chart, particularly at the entrance to the marina.

A public wharf inside the mouth of the river has a berth, 92m long, parallel to the stream; the depth alongside sat HW 3.7m. The wharf, accessible to very small craft only, dries at LW and is situated upstream of the Trans-Canada Highway bridge. The river up to the wharf is not marked and depths are subject to change.

Pilotage is compulsory. Tugs are not available. Anchorage can be taken off Pointe de la Rivière du Loup, in depths of 7 to 9m, sheltered from all but N winds. The holding ground is good.

The church spires in the town of Rivière du Loup are conspicuous. A conspicuous illuminated cross, 22m high, stands on high ground above the river. A microwave tower lies about 0.7 mile SSW of the cross.

Caution.—A wreck with a known depth of 5m lies about 500m NNW of the breakwater head. An obstruction with a known depth of 8m lies about 420m E of the S breakwater in the inner harbor.

10.21 Notre Dame du Portage (47°46'N., 69°37'W.), about 5 miles SW of Rivière du Loup, is fronted by a public pier, 192m long. The pier is in ruins and access is prohibited; however, a ramp at the inner end on the NE side is still in use.

Les Pelerins (Pilgrim Islands) (47°43'N., 69°44'W.), a group of several rocks, lie 2 miles offshore about 5 miles SW of Notre-Dame du Portage abreast of Pointe des Rochers. Le Gros Pelerin, the highest island of the group, rises to rounded hills at its ends.

Andreville (Saint-Andre), a small village grouped around a stone church with a spire, stands on the shore abreast of the S end of Les Pelerins. This church is not easily seen because of its dark color.

Pointe St.-Andre, a round rocky island, 39m high, stands about 0.5 mile W of Andreville. A cross on the summit of the island is difficult to see.

The **Îles de Kamouraska** (47°36'N., 69°53'W.), a group of five wooded islets and several bare rocks, lie near the outer edge of the foul ground about 5.5 miles SW of Pointe St.-Andre. Grand Île, the NE islet of the group is partly wooded and 30m high. A light is exhibited from a framework tower, 15m high, on Grande Île, adjacent to a white dwelling with a red roof. The light is shown from April 15 to December 10. A high conspicuous cross stands on the summit of Île aux Corneilles, the S islet of the group.

The village of Kamouraska stands on the shore abreast Île aux Corneilles and has a very conspicuous spired church in it which can be seen for a considerable distance. A conspicuous isolated hill, located 3 miles SE of the church, has a cross on its summit, 150m high. Two piers, with depths of 4m and 2.7m alongside their outer ends, extend from the shore abreast of the village. Both piers dry at LW and the SW pier is in a state of disrepair.

Good anchorage can be taken about 2 miles NW of the village, in a depth of 14 to 15m, stiff mud, exposed to NW winds.

10.22 Cap au Diable (47°32'N., 69°56'W.), about 3 miles SW of Kamouraska, rises to a conspicuous round wooded hill, 70m high. A church, with a conspicuous spire which can be

seen from a considerable distance, stands in the village of St. Denis, about 1.8 miles S of the cape. The vertical clearance of two power lines that cross the river at Cap au Diable is 51m. The vertical clearance of the third power line in the vicinity is 28m.

Point aux Orignaux (47°29'N., 70°01'W.), about 4.5 miles SW of Cap duDiable, is a low point connected to the shore by a neck of low, flat land. A large hotel stands near the inner end of a pier which extends from the point. Good anchorage can be taken about 1 mile NW of the pier, in depths of 9 to 11m, mud bottom.

Between Pointe aux Orignaux and Pointe Ouelle, the shore is fronted by foul ground which extends about 1.5 miles off Pointe aux Orignaux and 2.5 miles off Pointe Ouelle.

Pointe de la Rivière Ouelle (47°25'N., 70°03'W.) is a prominent moderately-high projection which extends from the shore about 4 miles SSW of Pointe aux Orignaux. The Rivière Ouelle is entered S of the point and leads upriver to a ruined government pier, which is closed to traffic and situated about 0.2 mile W of a bridge. An overhead cable, with a vertical clearance of 4.6m, spans the river close E of the bridge.

Northwest Shore of the St. Lawrence River—Cap au Saumon the Île aux Coudres

10.23 Cap au Saumon (47°46'N., 69°54'W.) is high, precipitous, and steep-to. The high land immediately behind the cape is separated from the inland ranges by undulating grassy plains.

The NW shore of the St. Lawrence River between Cap au Saumon and Île aux Coudres, about 26.5 miles SW, is mountainous, irregular, and indented by several inlets and bays. Anchorage is provided in some of these indentations. There are no ports of any commercial importance to shipping.

The NW side of the river is deeper than the SE side along this section of coast, but the depths decrease as Île aux Coudres is approached.

Recif de l'Île aux Fraises, which lies about 4 miles E of Cap au Saumon, has been previously described in paragraph 10.16.

Haut fond Morin (47°36'N., 70°02'W.), a rocky patch with a least depth of 6.1m, lies in mid-channel about 4.3 miles SE of Cap-a-l'Aigle.

An extensive narrow bank, with depths of 12.8 to 18.3m, lies about 0.5 mile W of Haut fond Morin. A smaller bank, with depths of 15.5 to 18.3m, lies centered about 1.8 miles SW of Haut fond Morin.

10.24 Banc des Anglais (47°28'N., 70°09'W.), with a least depth of 10.4m, extends about 9.5 miles SW from a position 7.5 miles S of Cap-a-l'Aigle. The SW end of the bank merges into Haut Fond du Centre, about 3.8 miles ESE of the NE extremity of Île aux Coudres.

Tides—Currents.—The flood sets SW through Chenal du Nord as far as Haut-fond Morin, where it sets W toward the bight of **Ste.-Irenee** (47°34'N., 70°12'W.). The velocity of the current is about 2 knots from the time of HW at Pointe au Pere until 2 hours later. During a small tidal range, there may be no flood current on the surface between the shoal and Ste.-Irenee bight. The flood rounds Cap aux Oies and divides into two channels on either side of Île aux Coudres.

The ebb sets along Banc des Anglais and into Chenal du Nord and Chenal du Sud at Recif de Î'le aux Fraises. The greater set is toward Chenal du Nord, especially during large tides. The ebb attains a velocity of 2.5 knots in the vicinity of Haut-fond Morin with average tides. Between the shoal and Cap aux Oies, the velocity is 4 knots during large tides and is strongest from the time of LW at Pointe au Pere until 1 hour later.

Off Cap aux Oies, the currents turn 3.5 to 4.5 hours after HW and LW at Pointe au Pere. The velocity of the flood and ebb currents is 2.5 and 3 knots, respectively, with average tides.

Eddies occur during the ebb S of Cap au Saumon and Cap-a-l'Aigle, forming a secondary current which sets SW along the shore for about 2 to 3 miles before rejoining the ebb.

Tide rips occur off the capes and Haut-fond Morin at the meeting of the ebb and the flood currents. These tide rips are especially strong E and S of Cap aux Oies.

10.25 Port-au-Simon (47°46'N., 69°57'W.) stands in a cove about 2 miles WSW of Cap au Saumon. The pier, 166m long, at the port is no longer maintained. A pier in ruins extends from the shore of St.-Fidele, about 1.8 miles SSW of Port-au-Saumon. A conspicuous church with a spire stands in the village.

Gros Cap-a-l'Aigle (47°42'N., 69°59'W.), about 1.8 miles SSW of St.-Fidele, is a high wooded cape. A small rocky ledge, covered at HW, projects about 0.1 mile from the S side of the cape. At certain stages of the tide there are heavy tide rips and eddies off this ledge.

Cap-a-l'Aigle (47°40'N., 70°06'W.), a resort town on a bold high point, stands about 5 miles SW of Gross Cap a l'Aigle. The shore between these two points consists of high wooded earth cliffs, bordered by a rocky ledge, with sand and large boulders, which dries. An L-shaped pier, 71m long, with a 45m long outer face and a least depth of 4.5m, extends from the cape and is used principally by small tankers.

A marina close NE of the public pier has a series of pontoons and is enclosed by an L-shaped breakwater. No commercvial activity has been recorded at this wharf since 1994. The marina's service pontoon is moored to the wharf and is closed to operations.

10.26 La Malbaie (Murray Bay) (47°38'N., 70°08'W.), entered between Cap a l'Aigle and Pointe-au-Pic, about 3 miles SW, is fouled over most of its area by drying flats. A submerged cable is laid across La Malbaie near the mouth of the Rivière Malbaie. The town stands on both banks of the Rivière Malbaie at the head of the bay. A church, with a very conspicuous spire, stands in the village and a conspicuous cross, illuminated at night, stands on the N entrance point to the river. A very conspicuous hotel stands on the cliffs above Pointe-au-Pic. The pier in the town is no longer used. An overhead cable and a fixed bridge, with a clearance of 2.9m, span the river close to its mouth.

The port of Pointe-au-Pic is located on the N shore of the St Lawrence River, 130km downstream from Quebec City. Pointe-au-Pic is a small port serving the village of the same name. The harbor remains ice free and the port is open and accessible all year long. The main cargoes handled are paper products and lumber. Port de Pointe-au-Pic is regarded by

Transport Canada as an "Occasional Use" port, its facilities and storage areas remaining well maintained, when not in use.

La Malbaie Berth Information			
Berth	**Length**	**Depth**	**Remarks**
Pointe-au-Pic Terminal			
Southeast (main) Quay	125m	8.0m	Breakbulk. pulpwood, and paper. Maximum loa of 168m.
North Quay	70m	—	Use is prohibited.

Contact Information.—See the table titled **Pointe-au-Pic Terminal—Contact Information**.

Pointe-au-Pic Terminal—Contact Information	
Port Authority	
Telephone	1-418-665-4485
Facsimile	1-418-665-2292
Email	info@qsl.com
Web site	https://www.qsl.com/en/network#port-A14

Anchorage.—Good anchorage can be taken, in a depth of 21.9m, with the church in the town of La Malbaie bearing 289° just open of **Pointe a Gaz** (49°39'N., 70°08'W.), distant 1.5 miles. This position is out of the strength of the currents and the prevailing winds with good holding ground. Good anchorage can be taken farther out, but the currents are much stronger. Temporary anchorage can be take off the pier at Pointe-au-Pic, but the currents are very strong with occasional heavy eddies.

Ste.-Irenee (47°34'N., 70°12'W.), a village with a church with a conspicuous white spire, stands 4.5 miles SW of Pointe-au-Pic. A large hotel stands on the beach about 0.3 mile S of the inshore end of the pier.

Cap aux Oies (Goose Cape) (47°29'N., 70°14'W.), about 4.5 miles S of Ste.-Irenee, is a steep-to bold wooded bluff. A traffic control reporting point for upbound and downbound vessel lies abreast of the cape.

Between Cap aux Oies and Cap St.-Joseph, about 6 miles WSW, the shore is mountainous and is indented by two drying bights. Cap Martin stands about midway between the two capes. Anchorage can be taken between Cap aux Oies and Cap Martin, in a depth of about 13m, sheltered from N winds.

A conspicuous church with a spire stands in the village of Les Eboulements, close above Cap Martin.

Cap St.-Joseph (47°27'N., 70°22'W.) is the outer end of a promontary faced by sand cliffs. A pier, with an outer face 34m long, with a depth of 5.5m alongside, extends from the cape. The W and E faces have depths of 5.5 and 4.5m, respectively. There are shallower depths off the wharf. A spoil ground lies 1 mile SW of Cap St.-Joseph.

Chenal du Nord (North Channel) and Adjacent Features

10.27 Chenal du Nord, the principal channel in the St. Lawrence River leading to Montréal and Quebec, is entered between the N shore of the river and Île aux Coudres. The channel extends about 9.8 miles WSW between Cap aux Oies and Cap aux Corbeaux and passes between that shore and Ile aux Coudres. The narrowest part of the channel lies adjacent to Cap aux Corbeaux. The part of this channel which passes N and W of Ile aux Coudres is known as Chenal de l'Île aux Coudres (Coudres Passage).

From Cap aux Corbeaux, the channel extends about 24 miles SSW to a position about 1.5 miles S of Cap Tourmente; the latter position being the N entrance of the dredged channel in Traverse du Nord. The latter reach continues between the NW river bank and the extensive area of foul ground that extends about 31.5 miles SSW from Ile aux Coudres to Recife de l'Île Madame, which lies on the E side of the S entrance of Traverse du Nord. This reach has a general width of about 1.5 miles and is narrowest, about 0.7 mile wide, in the vicinity of Brûlé Bank, nearly 19 miles SSW of Île aux Coudres.

Traverse du Nord, the narrows on the E side of Île d'Orleans, connect Chenal du Nord proper with the main channel S of Île d'Orleans. The dredged channel in the narrows extends about 9.8 miles SSW and has a least width of 305m, and a dredged depth of 12.2m. However, silting has been reported in the channel between Cap Brûlé and Saint Jean. There may be less water than shown on the chart.

The NW shore of the river is bordered by drying banks and foul ground within the 10m curve, which nowhere lies more than 0.75 mile offshore.

Note.—A vessel with a speed of 10 knots and bound from Île Verte to Quebec Harbor at the beginning of a fair tidal current may gain an hour in the passage by taking Chenal du Nord instead of Chenal du Sud.

10.28 Chenal du Nord—Southeast side.—Île aux Coudres is fringed by a drying reef on its channel side, which lies up to 0.5 mile offshore in places.

The 10m curve on the SE side of the channel extends rather regularly SSW for about 17 miles from the SW end of Île aux Coudres to Brisants du Cap Brûlé, which consist of a group of drying rocks with a 3.7m islet on its SW edge.

Banc du Cap Brûlé, which dries in its central part and has depths of less than 9.1m elsewhere, lies about 1 miles WSW of the 3.7m islet on Brisants du Cap Brûlé. The bank extends about 5 miles SSW to the N entrance of the dredged channel leading through Traverse de Nord.

Traverse du Nord, the channel leading through the shoal separating Chenal du Nord from Chenal du Sud, has a maintained dredged depth of 12.2m, which may be reduced by silting. Battures de la Traverse, which dries 0.8m, lies on the NW side of the entrance to this channel about 2 miles SSW of Cap Tourmente. A detached 8.5m patch lies about 1 mile S of the same cape.

Several islands lie on the foul ground on the SE side of Traverse du Nord. Île Madame, 21.3m high and the SW island, stands 2.65 miles S of the NE end of Île d'Orleans. Île aux Ruaux, of about the same height, stands 1.75 miles NE of Ile Madame. Recife de l'Île Madame, which dries 1.4m, is the SW extremity of the foul ground which extends SSW from Île aux Coudres.

Tides—Currents.—In the channel NW of Île aux Coudres, the flood current begins about 1 hour before LW at Quebec, at first setting up the island side. There is a variation of about 1 hour in the turn of LW slack within the limits of the passage. The turn of the ebb current occurs more sharply from 20 to 45 minutes before HW at Quebec. During the summer season with average tides, the flood current attains 3.9 knots and the ebb current 5.8 knots. A maximum ebb current of 7 knots may be encountered and ebb rates are doubtless stronger in the spring of the year. The ebb sweeps strongly around Baie Saint Paul and makes a strong tide rip.

During the greater part of the falling tide, there is a decided N set in the channel opposite Cap a Labranche, continuing towards the N shore in the general direction of Cap aux Corbeaux. Mariners should navigate vessels to prevent them being carried too far N by this set and to prevent colliding with inbound vessels during the strength of that tide.

Between Cap de la Baie and Cap Brûlé, the channel is free from crosscurrents, except near the turn of the tidal currents when they are weak. The turn from flood to ebb is approximately the same over the whole of this reach at about 25 minutes before HW at Quebec. The time of LW slack along the N shore is roughly for the whole reach 1 hour before low water at Quebec, but it is perhaps 1 hour earlier than this by the bank on the S side opposite Cap Maillard because of the flood coming up from the Traverse du Milieu. The flood currents vary from 3.5 knots off Cap de la Baie to 2.5 knots at Banc du Cap Brûlé and the ebb currents from 4.5 to 2.5 knots, similarly, with average tides.

Off Cap Maillard the maximum flood current is about 2 hours 20 minutes after LW at Quebec; the maximum ebb current is about 3 hours after HW at the same place.

In the vicinity of Banc du Cap Brûlé and Traverse Spit, the tidal currents are influenced by the flow into and out of Chenal de l'Île d'Orleans. Because they conform to the river bed they are considerably across abreast of Banc du Cap Brûlé, and slightly transverse to the main ship channel opposite Battures de la Traverse. Mid flood and ebb rates with average tides are 2 and 2.25 knots at Battures de la Traverse, and 3 knots on the flood and ebb opposite Banc du Cap Brûlé. The tidal currents turn about 30 and 40 minutes, respectively, before HW and LW at Quebec.

In Traverse du Nord the tidal currents curve into or out of the channel close along the Île d'Orleans side. Southward of a line from 0.5 mile off St. Jean to the S side of Recif de l'Ille Madame, the currents are directly up and down the channel. The mid flood and ebb rates with average tides are 2 to 2.5 knots on the average 50 and 40 minutes, respectively, after LW and HW at Quebec.

10.29 Chenal du Sud.—Traverse de Saint Roch may be considered the crucial point on the lower St. Lawrence River, as the tidal currents attain their greatest strength here. In the Lower Traverse the flood current begins 3 hours 57 minutes after LW at Pointe au Pere and runs for 5 hours 45 minutes. The ebb current starts 3 hours 35 minutes after HW at Pointe au Pere and runs for 6 hours 45 minutes. In the Upper Traverse the flood current begins 5 to 13 minutes and the ebb 22 minutes earlier than in the Lower Traverse. Variations of up to 25 minutes in the time of the turn to the flood current may occur under certain astronomical conditions.

Off the N entrance to these channels, the flood current begins much earlier in Chenal du Nord than in Chenal du Sud, and the first of the current therefore comes from the N, setting in a S direction upon the Hauts fonds de Sainte Anne and Hauts fonds de Saint Roch, but inclining gradually more to the W until at quarter flood it sets SSW fairly through Traverse de Saint Roch. After half flood it sets more SW and toward the end of the tide still more to the W, perhaps because the time of HW is somewhat earlier in Chenal du Nord, the water has begun to fall there before the flood has quite ceased in Chenal du Sud.

The ebb current sets in a direction nearly opposite to that of the flood. The first of the ebb sets off Hauts fonds de Sainte Anne and Haute fonds de Saint Roch, through the channels W of Haut fond du Centre, and N over the tail of that shoal.

Above Les Piliers, both tidal currents set fairly up and down the river.

In Traverse de Saint Roch, below a position about 1 mile above Upper Traverse, the rate of the ebb current is 7 to 8 knots and that of the flood 6 to 7.5 knots. The rates of both currents decrease gradually SW until about 1.5 miles below **Haut fond du Chanel** (46°14'N., 70°19'W.), where the ebb current attains a rate of 4.5 knots at springs. The rate of this current increases to 5.25 knots S of Les Piliers and decreases to 3 knots at Crane Island, while the flood current runs about 1 knot less at the respective localities.

10.30 Île aux Coudres (47°24'N., 70°23'W.) lies with Pointe du Bout d'en Bas, its NE extremity, about 2.5 miles SE of Cap St.-Joseph. The point appears as an island from a short distance because of a 19m high wooded mound which stands on it. A conspicuous hotel stands near the point.

Île aux Coudres is nearly 6 miles long and has an average width of 2 miles. The N coast of the island rises steeply to wooded hills, 119m high; the S coast of the island is generally faced by cliffs.

Pointe des Roches (47°25'N., 70°24'W.), on the N coast of Île aux Coudres, lies about 3 miles W of Pointe du Bout d'en Bas. A public wharf, with an outer face 40m long and an alongside depth of 5.5m in 1998, is situated here. In 1998, the NE face had an alongside depth of 5.5m and the SW face had an alongside depth of 5m. Île aux Coudres wharf has a dredged depth of 4.2m.

A shipyard is situated 183m NE of the public pier. The shipyard has a slipway, capacity of 1,000 tons, and constructs small vessels and repairs vessels up to 69m in length.

A row of conspicuous white oil storage tanks lies close S of the wharf.

Mouliage de la Prairie, on the N shore of the island, close W of the wharf, provides one of the most sheltered anchorages in the river, in depths of 5.5 to 18.3m, clay, good holding ground. The best position is in the middle of the bay in a depth of 10m.

Between Cap St.-Joseph and Cap aux Corbeaux, about 3.7

miles WSW, the coast is bordered by a steep-to shore bank which dries in places and extends up to 0.5 mile offshore in places.

Baie Saint Paul (47°25'N., 70°29'W.), which dries almost completely, lies between Cap aux Corbeaux and Cap de la Baie. Two small rivers discharge into the head of the bay. A pier, in ruins and which dries, extends from the entrance of the E river.

Between Cap de la Baie and Cap Tourmente, about 20 miles SSW, the shore rises steeply to high wooded hills. **Cap Maillard** (47°15'N., 70°35'W.), about 8 miles SSW of Cap de la Baie, rises to a conical hill, 240m high, which is conspicuous from the NE and SW. A pier, with a depth of 6.1m alongside its outer end at HW, extends from the shore abreast of the town of Saint François Xavier de la Petite Rivière, about 3.3 miles N of Cap Maillard.

The shore between Cap Maillard and Sault-au-Cochon, about 4 miles SSW, is bordered by foul ground which extends up to 0.5 mile offshore, but from there to Cap Brûlé, about 6 miles farther SSW, the shore bank is narrowed to a width of less than 1 mile.

Cap Brûlé (47°07'N., 70°43'W.) has been reported to be a good radar target up to 22 miles.

Cap Tourmente (47°05'N., 70°45'W.), about 2 miles farther SW, rises to a summit about 590m high.

Chenal du Sud (South Channel) and Adjacent Features

10.31 Chenal du Sud—North entrance.—Chenal du Sud (47°25'N., 70°12'W.) is entered about 4 miles ESE of Pointe a la Baleine and is separated from Traverse du Milieu (Middle Channel) by Haut fond du Centre (Middle Ground). This latter channel is narrow, tortuous, and seldom used, except by small craft with local knowledge.

Haut fond du Milieu, an extensive area of foul ground, extends about 16.5 miles SSW to the NE extremity of I'lle aux Oies.

Chenal du Sud is bordered on its NW side by an extensive area of foul ground which lies between Île aux Coudres and Île d'Orleans to the SW, and by the shoal banks on its SE side which extend from 0.5 to 5.5 miles offshore. The channel has a least width of about 0.4 mile and is 43 miles long to Pointe St.-Jean, the E extremity of Île d'Orleans. It joins Chenal du Nord here to form the main channel leading to Quebec Harbor and other places upriver.

A limiting depth of 7m has been reported to lie in the channel at Beaujeu West Narrow, abeam of Île aux Grues (Crane Island), about 24 miles SW of the N entrance.

10.32 La Pocatiere (47°22'N., 70°02'W.), a small village, stands on the slopes of Montagne du College, a prominent round hill 110m high about 4 miles S of the Rivière Ouelle. A church with a conspicuous spire and some college buildings stand in the village. A small wharf, in ruins, with a depth of 3.2m at its outer end at HW, extends from the shore near the village.

Several conspicuous isolated hills stand SW of Montagne du College. Mont Boutot, a remarkable truncated cone, 216m high, stands E of La Pocatiere. Two microwave towers are situated about 1.8 miles SW of Montagne du College.

Traverse de Saint Roch is that part of Chenal du Sud which lies between Hauts fonds du Sainte Anne and Hauts fonds de Saint Roch on the SE side and Haut fond du Centreon the NW side. The channel is about 0.3 mile wide at its narrowest part.

St.-Roch des Aulnaies (47°19'N., 70°10'W.), a small village surrounding a church with two spires, stands about 6.5 miles SW of La Pocatiere.

The shore from St.-Roch des Aulnaies to St.-Jean-Port-Jolie, about 7 miles upriver, is bordered by low cliffs which rise inland to wooded hills about 90m high. This latter village is fronted by a pier about 216m long, with shallow depths alongside; this wharf is reported (1996) to be in disrepair and berthing is prohibited. A strong current during the ebb at the end of the pier may hamper the approach.

Haut fond du Chenal (47°15'N., 70°20'W.), a narrow shoal with depths of 6.4 to 7.2m, lies on the NW side of Chenal du Sud, about 2.5 miles NW of the pier light at St. Jean-Port-Jolie. The channel abreast of this shoal narrows to a width of about 0.3 mile.

Le Pilier de Pierre (47°12'N., 70°22'W.), a small, bare, rocky islet, stands 3.5 miles WSW of the pier light at St.-Jean-Port-Jolie. Le Pilier de Bois, a steep rocky islet, 14m high, stands about 1.5 miles WSW of Le Pilier de Pierre. Rocher a Veillon, a drying rock which covers at half tide, stands 0.35 mile SE of Le Pilier de Pierre.

Good anchorage can be taken along the edge of the bank along the SE side of Chenal du Sud from a position SE of Le Pilier de Pierre to Île aux Oies. The holding ground of the stiff clay bottom is so good that difficulty is experienced at times in weighing the anchor.

10.33 Île aux Oies (47°09'N., 70°27'W.), wooded, hilly, and divided by a valley into two ranges running the length of the island, stands with its NE end about 2 miles SW of Le Pelierde Bois.

Battures de l'Îl.e aux Oies extend 4.5 miles SW from Île aux Oies and connect it with Île aux Grues. These meadows are almost awash at HW.

Île aux Grues (47°04'N., 70°33'W.) is generally flat, but rises to an elevation of 40m near its SW end.

A public pier, 250m long, with a depth of 2.8m alongside its outer end, is situated on the E side of the island, 2 miles NE of Pointe aux Pins, the SW extremity.

A ramp and mechanical hoist are situated at the outer end of the pier. The mobile ramp is used by the ferry that plies between Île aux Grues and Montmagny.

L'Islet-sur-Mer (47°08'N., 70°22'W.), a small village, stands about 6.5 miles SW of St.-Jean-Port-Jolie. A conspicuous black cross stands about 1 mile NE of the church in the village. This geographical area includes migratory bird sanctuaries (Environment Canada); access regulations apply to these protected areas.

Cap St. Ignace, a bush covered conical mound, 15.8m high, stands about 6.8 miles SW of L'Islet-sur-Mer. A village stands about 0.8 mile behind the cape.

The city of Montmagny stands about 5 miles SW of Cap St.-Ignace at the junction of two rivers, Bras Saint-Nicolas and Rivière du Sud. Rivière du Sud, blocked by a dam that is approximately 9m high, empties into a bight called Le Bassin.

The two piers within Le Bassin have shallow depths alongside. Banc de Saint Thomas, together with the shoals which border it, extends about 2 miles offshore abreast of Le Bassin and form the SE side of Chenal de Thomas. A wreck with a known depth of 9.5m is situated about 1 mile E of Pointe Saint Thomas.

At Montmagny, there is an L-shaped public wharf, with an outer face 61m long, that dries at low water. Diesel fuel and gasoline are available by truck. There is a mobile ramp on the east side and a landing pier on the south side of the wharf; when tides permit, it is used by the ferry that plies between Montmagny and Île aux Grues. There is a ferry terminal.

A former wharf, on the west side of Le Bassin close below the falls, is completely rock-filled. There is a ramp east of the falls near the ruins of a windmill. A shipyard (Les Chantiers Lachance) is situated on the SE shore of Le Bassin; shipbuilding and repairs of vessels up to 21m in length can be carried out. The shipyard is equipped with a ramp and a slipway with a capacity of 75 tons. This geographical area includes a migratory bird sanctuary (Environment Canada); access regulations apply to this protected area.

The Montmagny (seasonal) sector light marks the approach channel leading to Montmagny. It is centered on the 168½° bearing. The light is shown from a tower that is at the inner end of the old wharf. A channel marked by buoys, some of which are lighted, starts about 0.7 mile from the public wharf. There are also (private) stakes fitted with daybeacons which lead to the Montmagny public wharf through a narrow channel. Another channel, marked by buoys and a leading light (private), leads to the marina which is on the east side of the basin.

10.34 La Grosse Île (47°02'N., 70°40'W.), 4 miles WSW of Pointe aux Pins, is the highest island of L'archipel de L'Île-aux-Grues; it rises to an elevation of 65m. This island is a national historic site (Grosse-Île-et-le-Monemorial-des-Irlandais). It is managed by Parks Canada and the access to this protected area is under regulations.

Grosse Île Wharf is situated on the SE shore, 0.3 mile below the SW end of the island; it is 153m long and 26m wide, with a least depth of 6.1m at the outer end. Access to the ramps situated on each side of the wharf is restricted to boats having a commercial permit from Parks Canada. Therefore, mooring to this wharf is prohibited to all other boats.

Haut fond de la Grosse Île, a rocky shoal with a least depth of 3.5m, stands about 0.4 mile SE of the pier on La Grosse Île. The shoal extends SSE with a least depth of 2.5m to about.7 mile from the pier.

Battures St. Marguerite, parts of which are awash at LW, extends from Île St. Marguerite and Île la Sottise, which lie close E of La Grosse Île.

Anchorage can be taken, in a depth of 9.1m, between Haut fond de la Grosse Île and Battures St. Marguerite. Anchorage can also be taken between Grosse Ile and Haut fond de la Grosse Île, but the anchorage farther NE in Passage de la Quarantaine is preferred.

There is also confined anchorage between La GrosseÎle and Haut-fond de la Grosse Île. A rock, awash, lies 0.3 mile NE of the public pier. However, anchorage farther NE in Passage de la Quarantine (Quarantine Pass) is preferable.

Caution.—Between La Grosse Île and Île aux Grues there are numerous islets separated by narrow passages, including Passage de la Quarantine, which lie at the SW end of Chenal Traverse du Milieu. These fairways are strewn with drying or awash reefs and the ebb tidal currents are quite strong, making navigation hazardous. Local knowledge is required when navigating in this vicinity.

Trou de Berthier is a drying cove about 7.5 miles SW of Banc de Saint Thomas. Pointe Verte lies E and Pointe Rouge lies W of this cove. There is a ruined pier on Pointe Verte.

Île de Bellechasse (46°56'N., 70°46'W.), small in extent and narrow, lies about 0.5 mile NW of Pointe Rouge. Rocher Pointu, with a least depth of 1.8m, lies close NW of the island. Île de Bellechasse light (seasonal) is shown from a tower on the summit of the island.

Pointe de St.-Vallier (46°55'N., 70°48'W.), the extremity of a 39m high bluff, is the first prominent point on the SE shore of Chenal du Sud. It separates two drying bays that lie along the shore abreast of Île de Bellechasse and Point St. Michael, about 5.3 miles WSW.

Île d'Orleans and Adjacent Channels

10.35 Île d'Orleans (46°58'N., 70°55'W.), which lies with its NE end about 4.5 miles SW of Cap Tourmente, divides the St. Lawrence into two channels. The island is generally cultivated on the slopes and in the valleys between the hills. The summits are mostly wooded and rise to an elevation of about 150m, about 3 miles from the SW end. The S coast is bordered by a low cliff which increases in height toward the SW end of the island and at the river mouths. On the N coast, the cliff lies some distance inland with the intervening land being flat and cultivated.

Île aux Ruaux, Ile Madame, and Recife de l'Île Madame, which lie on the E side of Traverse du Nord abreast of the NE part of Île d'Orléans, have been previously described in paragraph 10.27.

St-François (Île d'Orleans) Port

St. François, a small village on the SE shore of Ile d'Orléans, lies 1.5 miles SSW of Pointe Argentenay, the NE end of the is-

land. A church with a spire stands in the village. A public pier, 186m long, has a least reported depth of 3.7m alongside its outer end. The pier exhibits a light at its head. The wharf is used by the Canadian Coast Guard as a forward base for search and rescue operations.

Off the village of St.-François the tide rises 6.6m at HHW and 5.5m at mean tides, which is considered to be the maximum range in the St. Lawrence River. Up to this point the tide increases in range; above this point the range begins to decrease as the river is ascended.

The **Rivière Dauphine** (46°58'N., 70°51'W.) flows into the St. Lawrence River about 2 miles SW of St.-François. Good anchorage can be taken off the river mouth, in a depth of 10m, mud.

Saint-Jean-de-l'Île-d'Orléans, a small village with a church, stands on the SE coast of the island, about 3.5 miles SW of the Rivière Dauphine. A St. Lawrence River Reporting Station for upbound and downbound vessels stands on the point.

The Rivière Lafleur and the Rivière Maheu flow into the St. Lawrence River about 1.5 miles and 2.8 miles SW of St.-Jean. Good anchorage can be taken off the mouth of the latter river, in depths of 10 to 12m.

Saint-Laurent-de-l'Île-d'Orleans (46°51'N., 71°00'W.), a small village with a church, stands about 6 miles SW of St.-Jean. A pier in ruins extends from the shore abreast of the village.

10.36 Beaumont (46°50'N., 71°01'W.), a small village on the S shore of the river opposite Saint-Laurent-del'Île-d'Orleans, has a church with a spire standing on the cliff. A waterfall flows over the cliff about 1 mile W of the church.

Trou St.-Patrice, a small inlet, stands at the mouth of Ruisseau St. Patrice, about 1.5 miles W of St. Laurent. Good anchorage can be taken in the inlet, in a depth of about 10m.

Overhead power cables, with a vertical clearance of 52m, span the river 2 miles W of St.-Laurent, although this clearance will be lower under winter icing conditions. Aircraft obstruction lights are displayed on each side of the channel. A conspicuous television tower, 307m high, stands about 3 miles W of St.-Laurent.

The village of L'Ange-Gardien (46°54'N., 71°01'W.) is on the NW shore, 4.5 miles above Chateau-Richer. There is a conspicuous church in the village.

L'Ange-Gardien Range Lights (seasonal), in line bearing 023.5°, are situated on the NW shore above the village. The lights are shown from towers with a fluoresscent orange and black daymark; the lights are visible only when in alignment.

Overhead power cables, with a vertical clearance of 29m, which may be considerably less under severe ice conditions, span the Chenal de l'Île d'Orléans above L'Ange-Gardien. Red lights are shown from towers on each shore.

Pointe a la Martiniere (46°50'N., 71°07'W.), on the S shore of the river about 4.5 miles W of Beaumont, is the base of a small wooded hill. A diamond-shaped beacon stands close E of the point.

The village of Sainte-Petronille (Beaulieu) stands near the SW extremity of Île d'Orléans. A church and a large hotel stand near the point. A pier, with a 69m face, extends from the point.

Chenal de l'Île d'Orleans (Orleans Island Channel) (47°02'N., 70°48'W.) lies between the N side of Île d'Orleans and the shore to the N. This very narrow channel is obstructed by several mid-channel shoals which limits the draft of vessels capable of transiting it to no more than 3.7m. Although buoyed and marked by lighted ranges, passage of this channel should not be attempted without a pilot or local knowledge.

10.37 Pointe aux Prêtres (47°03'N., 70°49'W.), on the N shore of the St. Lawrence River close N of the NE end of Île d'Orléans, lies about 3.8 miles SW of Cap Tourmente. The intervening shore is low with the mountain range rising some distance inland.

The village of Saint-Joachim, which has a church with a spire, stands about 1 mile W of Pointe aux Prêtres.

Dwellings are practically continuous along the shore from here to Quebec City.

The town of Sainte-Anne-de-Beaupre stands at the mouth of the Riveère Ste.-Anne du Nord, about 3 miles W of Pointe aux Pretres. A conspicuous chimney and a water tower stand near a mill on the E side of the river mouth.

Sainte-Anne-de-Beaupre (47°01'N., 70°56'W.) stands about 2 miles SW of the Riviere Ste. Anne du Nord and about 12 miles from the Quebec Harbor limit. A conspicuous church with two high spires stands in the town. A private pier, 375m long, with a depth of 3.4m alongside its outer end, extends from the shore abreast of the town. The outer end was formerly reserved exclusively for tour boats but is now in ruins. The NE and SW sides are bordered by large boulders. Near a large manufacturing plant a large boulder breakwater, in poor condition and drying in places, extends 0.5 mile offshore. Mont Sainte-Anne, with its numerous conspicuous ski slopes, is approximately 3.5 miles inland.

Sainte-Famille de I'lle d'Orleans, a small village, stands on Île d'Orleans, about 3 miles SSW of Sainte-Anne-de-Beaupre. Château-Richer, a similar village fronted by a small pier, stands on the mainland about 2.5 miles W of Sainte-Famille de I'lle d'Orleans.

Overhead power cables, with a vertical clearance of 32m, span the channel about 3.3 miles SW of Château-Richer. The vertical clearance of the power cables may be less during winter icing conditions.

Submarine cables are laid across the channel from the mainland to Île d'Orleans in the vicinity of Pointe Saint-Pierre. Caution not to anchor in this area is advised.

The town of Montmorency stands close SW of the mouth of the river of the same name, about 7.8 miles SW of Château-Richer. The Montmorency Falls, 76m high, stand about 0.5 mile upriver, but are not visible from the E until abreast of the river.

A fixed highway suspension bridge, Pont de l'Île-d'Orleans, with a vertical clearance of 32m, spans the channel about 1.75 miles SW of the mouth of the Riviere Montmorency. A channel, 183m wide, passes under the central part of this bridge.

Submarine cables cross the channel approximately 1 mile above Pont de l'Île-d'Orleans. A prohibited anchorage area is indicated on the chart.

The city of Beauport lies between Riviere Montmorency and Quebec City. A large church, with two conspicuous square spires, stands 2.7 miles WSW of Pont de l'Île-d'Orleans; another large church with two conspicuous spires, stands 3.5

miles WSW of the same bridge.

Port of Quebec (46°49'N., 71°13'W.)

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10.38 Quebec is the farthest inland deep water connection to the Great Lakes, St. Lawrence Seaway, and is also favorably placed for trade with North European ports and provides full intermodal connections to all its terminals. The operations of the Port of Quebec are primarily in the vicinity of the mouth of Riviere Saint-Charles but extend to a broader section of the St. Lawrence River. Therefore, the downstream port limit in Chenal de l'Ie d'Orleans is the SW end of Ile d'Orléans, while in Chenal des Grands Voiliers, the limit is a line drawn between Pointe Saint-Jean and Pointe Saint-Michel. The upstream port limit is in Cap-Rouge, 2 miles above Pont Pierre-Laporte. The limits of the harbor are contained within an area which extends from the SW end of Ile d'Orleans upriver to Cap-Rouge, about 2 miles above the Pierre Laporte Bridge. The distance from the pilot station at Anse aux Basques to Quebec Harbor is 120 miles.

The North Shore area includes the port areas of The Estuary, Anse au Foulon, Beauport, and two cruise liner berths at Pointe-a-Carcy. The South Shore includes a cruise/passenger and fast ferry terminal at Levis and two tanker berths at St. Romuald used for the largest oil refinery in E Canada, owned by Ultramar. The port includes wharves for mineral concentrates, coal, and chemicals, grain elevators, and general purpose berths handling goods ranging from dairy products to newsprint. There are extensive repair and bunkering services and year round navigation.

Quebec City, capital of the province of Quebec, is on the north shore at the junction of the St. Lawrence River and Riviere Saint-Charles. Communaute Urbaine de Quebec (CUQ) comprises 13 municipalities situated on the N shore of Quebec City metropolitan area between Beauport and Saint-Augustin-de-Desmaures.

Quebec City consists of Upper and Lower Town. Upper Town is located on the ridge overlooking the St. Lawrence River and the Port of Quebec. The Citadelle, 103m in elevation, is a fortification occupying the highest part of the town. A conspicuous hotel, Fairmont Le Chateau Frontenac, overshadows the ferry wharf in the Upper Town. Lower Town is built on the low land to the N of Upper Town; there are numerous manufacturing plants, warehouses and commercial centers. The Quebec City area is a service center and an industrial heartland, as well as an agricultural region.

There is a petroleum refinery in the port. It is also a port of call for numerous cruise ships.

Ample modern alongside berthing facilities are available for all classes of vessels at the city of Quebec, on the W side of the river, and at Levis, on the opposite side of the river.

A shipyard is located at Levis (Lauzon residential district), approximately 1.5 miles SW of the W end of Ile d'Orleans. A regular ferry service operates between Quebec City and Levis; the usual track of the ferries is shown on the chart. There is also a seasonal ferry service between Montreal, Quebec City, Matane, Chandler and Capaux-Meules.

Riviere Saint-Charles empties into a roadstead bordered by wharves on which there are several port facilities. On the north shore of Estuaire de la Riviere Saint-Charles, there are several tanks and a plant with two chimneys. Several grain silos are located between Bassin Louise and Riviere Saint-Charles.

On the SE shore and adjacent to a church with spire standing on top of the cliffs, there is the Valero Energy Refinery Petroleum Terminal. The T-shaped terminal extends 600m from the shore; it is made out of big round cribs linked by catwalks supporting the pipelines that lead to the refinery. There are cargoes handling structures, including a crane, on one of the cribs.

Riviere Chaudière empties into the St. Lawrence River from the south shore, 2.2 miles above Pointe à Puiseaux. Overhead power cables, with a vertical clearance of 18m, cross Rivière Chaudiere near its mouth.

The necessity for use of tugs for ship handling in the harbor is dependent upon the size of the vessel, the location of the berth, the state of the tide, the expected current and the weather conditions.

Winds—Weather.—Fogs may occur occasionally on the St. Lawrence River in the early part of the day throughout the normal navigation season, but the lowest visibility, and the most continuous, is usually experienced in September and the first half of October.

Ice.—Ice starts to form around mid-December and disappears around the end of March. The port is open year round, but it is recommended that vessels navigating to Quebec City during that period be ice strengthened.

Tides—Currents.—At Quebec City, the rise of the tide is more rapid than the fall, as in all estuaries. Low water maintains a fairly constant level throughout the year, whereas the height of high water varies more between springs and neaps. As a general rule, the water rises higher with NE winds, and falls lower with SW winds. The level at Quebec City is also affected noticeably by the height of the water in the river, which is highest in the spring around April, and falls gradually to attain its lowest level during winter.

As in all estuaries, the rise of the tide is more rapid than the fall. Low water is not far from the same level throughout the month; whereas, the height of HW varies in the usual way from springs to neaps.

The duration of the low water slack is approximately 35 minutes at Anse au Foulon, during which the flow does not exceed 0.5 knot in either direction. The beginning of the flood current comes up the north side of the main channel, reaching the lower end of the berthing area of Anse au Foulon, approximately 1 hour 20 minutes after low water. Before the turn of the tide occurs in the river, there are reverse streams along the wharves; these are generated from a recirculation effect caused by the shape of the shoreline. The flood current runs an average time of 5 hours and comes to full strength approximately 1 hour before high water. For mean tides, the rate of the flood flow along the edge of the channel is 2.5 knots which holds roughly until 1 hour before high water slack. Toward the end of the flood in midstream an eddy forms in the middle of Anse au Foulon, and above the wharves the flow turns downwards inshore.

From 1 hour before until 1 hour after high water, there are reverse current within the berthing area, the stream setting in mid-channel and turning inward by the upper end of the wharves to join the downward stream along the shoreline.

The duration of the high water slack in the channel is ap-

proximately 35 minutes. At Anse au Foulon, above the wharves, there are reverse streams approximately 1 hour after high water. The ebb stream runs an average time of 7 hours 30 minutes and reaches full strength 3 hours to 3 hours 30 minutes after high water. The rate is about the same as for the flood stream, 2.5 knots and may reach 3 knots with spring tides. For further details concerning tidal streams, consult the Canadian publication Atlas of Tidal Currents—St. Lawrence Estuary, from Cap de Bon-Désir to Trois-Rivières.

The general set of the tidal currents is in the direction of the river, the ebb current being strongest along the SE shore and the flood current along the NW shore. The flood current sets toward Beauport Bank and should be guarded against. The ebb current attains a velocity of 4.5 knots off Pointe Levis; the flood current a velocity of 3.5 knots off the Citadel.

Depths—Limitations.—The least depth in the principal approach channel of the St. Lawrence River between the Gulf of Saint Lawrence and Quebec Harbor is 12.5m. The fairway of the river channel above the harbor limits at Cap Rouge has a least depth of 14.6m. There is no limit to length or breadth. Draft is limited to 14.3m in winter and 15.2m in summer. Berthing information for Quebec is listed in the table titled **Quebec—Berth Information**. For drydock information see the table titled **Québec—Drydock Information**. For overhead clearance limits see the table titled **Quebec—Overhead Clearance Limits**.

Québec—Berth Information

Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Estuary Sector						
18	241m	11.0m	225.5m	10.7m	30.8m	Grain.
26	241m	11.0m	150m	8.0m	23.0m	Cruise vessels and chemicals.
27	293m	12.5m	289.5m	11.5m	32.3m	Ro/ro, cement, and breakbulk.
28	277m	12.0m	229m	10.8m	32.2m	Chemicals, grain, and multipurpose. Continuous berthing length of 519m.
29	305m	11.3m	294.1m	8.6m	32.2m	
30	224m	8.1-10.3m	294m	8.6m	32.2m	Grain, cruise vessels, ro/ro, and breakbulk.
31	224m	6.5m	—	—	—	General cargo.
Pointe-a-Carcy Sector (Ross Gaudreault Cruise Terminal)						
Quay 21	206m	11.7m	251.9m	8.1m	32.2m	Cruise vessels.
Quay 22	325m	10.7m	345m	10.3m	43.0m	Cruise vessels.
Beauport Sector						
Quay 50	300m	12.0m	228.6m	10.1m	40.0m	General cargo, coal, and petroleum products. Continuous berthing length of 1,120m
Quay 51	235m	12.5m	229.1m	9.8m	40.0m	
Quay 52	260m	12.5m	300m	12.3m	50.0m	
Quay 53	325m	15.0m	292m	14.2m	45.0m	
Valero-Jean Gaulin Refinery						
86	117m	10.7m	228.6m	10.5m	32.2m	Petroleum products. Berthing length of 305m (including dolphins).
87	192m	16.7m	300m	15.5m	65m	Petroleum products. Berthing length of 305m (including dolphins).
Anse Au Foulon Sector						
101	198m	11.3m	294m	9.0m	32.2m	General cargo. Continuous berthing length of 332m.
102	134m	11.3m	222.6m	8.1m	26.6m	
103	211m	12.0m	294.1m	10.5m	32.2m	General cargo. Berth length: 332m (continuous).
104	211m	11.3m	285.1m	8.1m	32.2m	General cargo and lumber. Continuous berthing length of 602m.
105	195m	11.3m	225.5m	8.5m	32.2m	
106	195m	11.3m	225.5m	8.3m	30.0m	

Québec—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
107	173m	11.3m	225.5m	9.9m	28.2m	Dry and liquid bulk cargo.
108	180m	11.3m	228.6m	—	32.2m	General cargo.
Bassin Louise						
4	240m	6.5m	—	—	—	Marina and cruise ships.
5	180m	7.5m	—	—	—	Marina and cruise ships.
14	178m	7.1m	—	—	—	Tourism and wintering.
17	210m	7.8m	—	—	—	Minor repairs and wintering.
19	192m	5.5m	—	—	—	Sightseeing excursions. Cruise ships.
20	342m	6.9m	—	—	—	Minor repairs and wintering.
Industries Davie (Lévis)						
70	152m	7.1m	—	—	—	Entrance to Champlain Dry Dock (east side). There is less water at the entrance of the dry dock. Depth not maintained by dredging.
71	122m	7.1m	—	—	—	Entrance to Champlain Dry Dock (west side). Depth not maintained by dredging.
72	107m	3.7m	—	—	—	Outfitting wharf. Depth not maintained by dredging.
73	164m	7.8m	—	—	—	Outfitting wharf. Depth not maintained by dredging.
74	141m	0.5-4.8m	—	—	—	Outfitting wharf. Depth not maintained by dredging.
75	169m	6.0m	—	—	—	Depth not maintained by dredging.
76	183m	4.9-6.0m	—	—	—	Outfitting wharf. Depth not maintained by dredging.
77	170m	5.0m	—	—	—	Entrance to Lorne Dry Dock (east side). Depth not maintained by dredging.
78	95m	5.0m	—	—	—	Entrance to Lorne Dry Dock (west side). There is less water at the entrance of the dry dock. Depth not maintained by dredging.
79	81m	—	—	—	—	Outfitting wharf. For depth, consult the chart.
Société des traversiers due Québec						
82	96m	4.9m	—	—	—	Fast ferries.
92	140m	4.9m	—	—	—	Fast ferries.
Stadacona						
46	210m	6.7m	—	—	—	Forest products. Depth not maintained by dredging.
47	205m	6.7m	—	—	—	Forest products. Depth not maintained by dredging.
Canadian Coast Guard						
93	134m	9.2m	—	—	—	Coast Guard. Depth not maintained by dredging.

Québec—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
94	106m	10.0m	—	—	—	Coast Guard. Depth not maintained by dredging.
95	99m	9.0m	—	—	—	Coast Guard. Depth not maintained by dredging.
96	89m	8.8m	—	—	—	Coast Guard. Depth not maintained by dredging.
97	117m	9.1m	—	—	—	Coast Guard. Depth not maintained by dredging.
98	113m	9.3m	—	—	—	Coast Guard. Depth not maintained by dredging.
Town of Lévis						
81	220m	9.1m	—	—	—	Open space. Depth not maintained by dredging.
Québec City						
91	91m	3.5m	—	—	—	Excursion boats. Depth not maintained by dredging.

Québec—Drydock Information			
Berth	Length	Width	Remarks
Davie Shipyard	—	—	Position 46°49'42.0"N, 71° 09'37.8"W. Two construction berths, operated by and situated at Davie Shipyard, are located in approximate position 46°49.8'N, 71°09.7'W and position 46°49.8'N, 71°09.6'W.
Champlain Drydock	351m	36.57m	Can allow a vessel of loa 194.5m and loa 147m to be docked simultaneously in the inner and outer sections, respectively.
Lorne Drydock	182.9m	18.89m	Has a pumping time of 3 hours and is therefore able to quickly turnaround incoming vessels.

Industries Davie shipyard located at Lévis (Lauzon) has five shipbuilding berths which are also available for repairs of all kinds. Champlain dry dock is 350.5m long, with an entrance gate 36.6m wide; it can be divided into two sections. The depth over the sill is 6.6m at chart datum. Lorne dry dock is 190.2m long, with an entrance width of 18.7m, and a depth over the sill of 7.8m at high water.

Aspect.—The imposing Chateau Frontenac Hotel stands in Upper Town above the ferry wharf. A paper mill, with two chimneys, is situated on the N side of the Riviere Saint Charles. A grain elevator is situated between Bassin Louise and the Riviere Saint Charles.

In Lauzon, there is a church with a high spire situated about 0.2 mile S of Les Chantiers Davie. Situated close to this church is a large convent and college surmounted by a cupola. At Saint David de l'Auberiviere, on the SE shore adjacent to the Ultramar Wharf, is a church with a spire.

At Sillery, on the NW shore, is a monastery with a spire about 0.5 mile N of Pointe a Puiseaux.

Pilotage.—Pilotage is compulsory. Pilots board inbound vessels at Les Escoumins pilot station in position 48°19'N, 69°25'W for the passage to Quebec City. Vessels bound for destinations farther W exchange pilots at Quebec City. The harbor pilots will dock any vessel of 65m or more in length arriving from the downstream limit of the Port of Quebec. They will also handle all ship movements in the port. The following types of departing downbound vessels are required to have a harbor pilot on board:

1. Tankers 40,00 dwt and over departing from Berth No. 86 or Berth No. 87.
2. Any vessel requesting a pilot.

The distance, via the main shipping channel, from the pilot station at Les Escoumins to Québec city is 120 miles.

The master of a ship that is to depart from the Port of Quebec must give a first notice of departure 12 hours before the estimated time of departure (ETD) to a MCTS Centre and a final notice confirming or correcting the ETD at least 6 hours before the ETD. The master of a ship that is to make a move within Port of Quebec must give notice of move 3 hours prior to move.

Masters of vessels bound upriver for ports above Anse aux Basques from any point E of the Strait of Belle Isle, Cabot Strait, or of Canso, must report their ETA at the pilot station at Anse aux Basques 24 hours prior to arrival. They must also

give a second notice 12 hours prior to arrival and a confirming ETA 4 hours prior to arrival.

Any vessels arriving from any point W of the above places are required to give their ETA at the pilot station 12 hours before arrival. They will give a final notice correcting or confirming it 4 hours before hand. The above reports shall be given by calling a coastal marine station or Pilot Dispatch Center, addressed to "A.P.L. Pilot".

Additionally, vessels inbound to ports W of Anse aux Basques must report ETA to Pilots Montréal, via Marine Traffic Control to Seven Islands Radio Station.

Pilot boats at the Les Escoumins station maintain a continuous listening watch on VHF channel 9. Additional information on pilotage may be obtained by contacting the Director of Operations, Laurentian Pilot Authority. Harbour Pilots will dock any westbound vessel and any vessel may request the services of a harbor pilot. Departing tankers of 40,000 dwt or greater are required to have a harbor pilot on board.

Regulations.—Under the Canada Marine Act, vessels maneuvering or otherwise underway in the Port of Quebec, and also while at a berth or at anchor, are subject to the Port Authorities Operations Regulations. Mariners may obtain a copy of the regulations from the Quebec Port Authority.

Any vessel maneuvering or otherwise underway in the port shall at all times be under the orders of the Marine Communications and Traffic Services (MCTS). Quebec Port Authority has full authority over vessels in the port and may order vessels to move, to use tugs, to berth or anchor in locations which it designates. Vessels must inform Quebec Port Authority in advance of their intention to berth in the port. Regulations require that no vessel shall move in the port at a speed that may endanger life or property.

Specific guidelines govern the use of tug services, including maneuvers for docking and departing in restricted visibility or in adverse weather conditions. Other regulations refer to mooring procedures in the Port of Quebec during winter.

Vessels are regulated with respect to cargo-handling operations including the usage of equipment and lighting in these operations. Also included are instructions for reporting in the event of accidents, cargo or gear lost overboard and safety requirements. Specific vessel regulations are to be observed for carriage and handling of explosives and dangerous goods, as well as fire prevention.

Any vessel about to leave any berth, wharf or pier shall, before leaving, sound one long blast on its whistle or siren. Any vessel going astern from any wharf, basin or dock shall sound on its whistle or siren three short blasts in succession. A vessel shall sound on its whistle or siren two long blasts, immediately before entering or leaving the outer Bassin Louise, or Estuaire de la Riviere Saint-Charles; if towing, the vessel shall sound two long blasts followed immediately by one short blast. No vessel shall engage in calibration or compass adjustment except with permission and in the area designated by the harbor master.

A Canadian Coast Guard seasonal Search and Rescue station provides services in the St. Lawrence River. Requests for assistance can be addressed, at any time, to the Marine Rescue Sub-Centre (MRSC Quebec) in Quebec City through VHF channel 16 (156.8 MHz) or on the frequency 2182 kHz via MCTS Centre, or by telephone (1-800-463-4393). When an emergency or distress situation occurs and the request for assistance cannot be transmitted through VHF channel 16 or the frequency 2182 kHz, it is possible for owners of certain cellular telephone models to dial *16 which will put them directly in contact with the nearest MCTS Center. It should be noted that it is not possible for the Canadian Coast Guard to trace the origin of calls for those using their cellular telephone and that some areas do not have cellular coverage.

When a marine oil spill occurs, mariners will immediately inform the Canadian Coast Guard via the MCTS center through VHF channel 12 or 16. The Eastern Canada Response Corporation (ECRC) is a private company, certified by the Canadian Coast Guard, which can provide marine oil spill response services. It has equipment located at various strategic locations along the St. Lawrence River, including the Port of Quebec. The company can be reached by telephone (418-692-8989).

The service of linesmen to tend mooring lines for docking, departing, or for any vessel movement, is performed by a group of local boatmen. A minimum of 3 hours notice is required for this service and should be requested through the ship's local agent. This service is compulsory for oceangoing vessels. Ships' gangways or accommodation ladders may be used in Quebec City. However, gangways are available at all berths, and vessels requiring them should inform their agent well in advance of arrival.

Contact Information.—See the table titled **Quebec—Contact Information**.

Quebec—Contact Information	
Port Authority	
Telephone	1-418-648-3640
Facsimile	1-418-648-4160
E-mail	marketing@portquebec.ca
Web site	http://www.portquebec.ca
Harbormaster	
VHF	VHF channel 77
Telephone	1-418-648-3556
Facsimile	1-418-649-6414
E-mail	capitainerie@portquebec.ca

Anchorage.—Anchoring within the harbor limits is prohibited without permission from the harbormaster and then only at such place as is assigned. Permission to anchor must be obtained from the harbormaster through the Marine Traffic Control Center.

Anchorage is prohibited in the submarine cable and pipeline area N of Anchorage Area A. Anchorage is also prohibited in the approaches to Anse au Foulon terminal.

Anchorage berths A, B, and C are on the east side of the river between Quais de la Reine and Anse au Foulon Terminal; anchorage berth D is in the N part of the port near the entrance to Chenal de l'Île d'Orléans.

The VTS Center will assign anchor berths.

Caution.—Batture de la Pointe de Levy is subject to silting

and the approaches to, and depths alongside Berth 70 to Berth 79 are not maintained by dredging. Depths of 3.2m and 4.9m lie about 183m W and E, respectively, of the approaches to Berth 70 and Berth 71. A depth of 4.9m lies in the approaches to Berth 77 and Berth 78.

Sandy conditions in the area means that depths along the coast and in dredged channels may be subject to change without published notice. The Coast Guard Information Center should be contacted for the latest information.

A water intake pipeline extends 475m from the shore in Anse aux Sauvages. The crib at the end of the pipeline has 2.3m of water over it. Fishing gear is installed on the foreshore of the channel from July to November.. Mariners are requested to navigate with caution in these areas.

Two bridges span the St. Lawrence River close above the mouth of Riviere Chaudière; at this point the St. Lawrence narrows to a width of 0.4 mile. Pont de Quebec, an illuminated road and rail combined cantilever bridge, has a distance between the piers of 549m, with a vertical clearance of 47m. Remains of metallic structures that collapsed during the construction of the bridge are lying entangled on the sea floor. Pont Pierre-Laporte, close upstream of Pont de Quebec, has a distance between the piers of 665m, and a vertical clearance of 49m. At any given time, when ice is present in the St. Lawrence River, vessels are prohibited from meeting or passing under Pont de Quebec. Should vessels meet, the vessel with the current has priority. A green light is shown on each side of Pont de Quebec, close to the center line of the central span. Two white lights and two racons, have been established under each end of the central span, mark the north and south limits of the channel; the two lights are 231m apart. In the middle of the central span, for a width of 175m, the vertical clearance is 47m. Two red lights, 396m apart, are placed under the middle section of the cantilever arms, where the vertical clearance is 27m. A green light is shown on each side of Pont Pierre-Laporte to mark the center of the channel. There are white lights, established on each side of the bridge, 113m north and 117m south of the green lights, to mark the channel limits where the vertical clearance is 49m. There are red lights shown on each side of the bridge, 175m north and 193m south of the green lights; the vertical clearance under the red lights is 48m. The channel under the two bridges is called Le Sault because of the strength of the currents. With an ebb tidal current, the flow at times reaches 5.5 knots; with a flood tidal current, the rate is nearly 5 knots. Tidal eddies are formed 0.7 mile below the bridges at the beginning of the flood tidal current, and close above the bridges at the beginning of the ebb tidal current.

Overhead power cables, with a vertical clearance of 48m or 35m under severe ice conditions, span the St. Lawrence River between the two bridges. Other power cables, close above Pont Pierre-Laporte, have a vertical clearance of 44m or of 35m under severe ice conditions. The town of Sainte-Foy is on the N shore near the two bridges.

A wreck, with a depth of 15.1m, lies 0.2 mile downstream of Pont de Québec. Ruins of former bridge structures which fell during construction lie on the river bed, just downstream of the bridge. The obstruction has depths of 23.3m and 45m. A water intake lies 1.3 miles upstream of Pont Pierre-Laporte.

Anchor Berths

Anchorage Designations	Position	Remarks
Alfa	46°48.2'N, 71°11.6'W	Used by vessels (other than tankers) whose loa does not exceed 180m. To the S of the port area, the N limit of Anchorages A, B, and C are marked on the chart by a line extending ESE from the shore (46°48'34.2"N., 71°12'10.2"W.) between Wharf Area 94 and Wharf Area 95 across to the far shore at Levis.
Bravo	46°47.8'N, 71°11.8'W	Used by vessels (other than tankers) whose loa does not exceed 180m.
Charlie	46°47.7'N, 71°11.7'W	Used by vessels (other than tankers) whose loa does not exceed 180m.
Delta	46°50.8'N, 71°09.4'W	Used by vessels (other than tankers) whose loa does not exceed 225m, with less than 9.0m draft and without exceeding 50,000 dwt.

Quebec—Overhead Clearance Limits

Channel	Type	Position	Overhead Clearance	
			Normal*	With Ice**
Main Shipping Channel				
Beaumont upstream	Cable	46°50.6'N, 71°03.3'W	50m	35m
Pont de Quebec	Bridge	46°44.8'N, 71°17.3'W	46m	—
Pont de Quebec upstream	Cable	46°44.7'N, 71°17.4'W	56m	33m
Pont Pierre Laporte	Bridge	46°44.8'N, 71°17.5'W	49m	—
Pont Pierre Laporte upstream	Cable	46°44.7'N, 71°17.7'W	44m	33m

Quebec—Overhead Clearance Limits				
Channel	Type	Position	Overhead Clearance	
			Normal*	With Ice**
Chenal de l'Île d'Orléans				
Pont de l'Île d'Orléans	Bridge	46°52.8'N, 71°07.9'W	49m	—
L'Ange-Gardien	Cable	46°53.9'N, 71°06.2'W	45m	16m
Fjord du Saguenay				
Cap de la Boule	Cable	48°08.7'N, 69°48.8'W	89m	78m
Cap Sainte-Marguerite	Cable	48°14.0'N, 69°56.2'W	47m	43m
Anse de Tabatière	Cable	48°16.8'N, 70°12.1'W	62m	50m
Pont Sainte-Anne (Chicoutimi)	Cable	48°44.7'N, 71°04.1'W	3.1m	—

* Height of bare cable at the center of the shipping channel with zero wind. ** Environmental conditions will have a negative impact on cable clearance.

Underkeel Clearance—St. Lawrence River, Quebec to Montréal (Container Ships)									
Vessel's speed not exceeding (Knots)									
Vessel beam not exceeding	7	8	9	10	11	12	13	14	15
	Required underkeel clearance (meters, this includes the estimated squat and the maneuverability/safety margin)								
24m	0.79	0.88	0.96	1.04	1.22	1.41	1.63	1.88	2.17
26m	0.83	0.90	0.98	1.07	1.25	1.45	1.68	1.93	2.23
28m	0.84	0.91	1.00	1.09	1.28	1.48	1.72	1.98	2.29
30m	0.86	0.93	1.01	1.11	1.31	1.52	1.76	2.03	2.34
32m	0.87	0.94	1.03	1.14	1.34	1.55	1.80	2.08	2.40
34m	0.88	0.96	1.05	1.16	1.36	1.58	1.84	2.12	2.45
36m	0.89	0.97	1.07	1.18	1.39	1.62	1.88	2.16	2.50
38m	0.90	0.98	1.08	1.20	1.42	1.65	1.92	2.20	2.55
40m	0.91	1.00	1.10	1.22	1.44	1.68	1.96	2.24	2.60
42m	0.92	1.01	1.12	1.24	1.47	1.71	1.99	2.29	2.65
44m	0.93	1.02	1.13	1.26	1.49	1.74	2.03	2.33	2.70
Estimated squat (meters)									
24m	0.21	0.27	0.35	0.43	0.53	0.65	0.79	0.97	1.18
26m	0.22	0.29	0.37	0.46	0.56	0.69	0.84	1.02	1.24
28m	0.23	0.30	0.39	0.48	0.59	0.72	0.88	1.07	1.30
30m	0.25	0.32	0.40	0.50	0.62	0.76	0.92	1.12	1.35
32m	0.26	0.33	0.42	0.53	0.65	0.79	0.96	1.17	1.41
34m	0.27	0.35	0.44	0.55	0.67	0.82	1.00	1.21	1.46
36m	0.28	0.36	0.46	0.57	0.70	0.86	1.04	1.25	1.51
38m	0.29	0.37	0.47	0.59	0.73	0.89	1.08	1.29	1.56
40m	0.30	0.39	0.49	0.61	0.75	0.92	1.12	1.33	1.61
42m	0.31	0.40	0.51	0.63	0.78	0.95	1.15	1.38	1.66
44m	0.32	0.41	0.52	0.65	0.80	0.98	1.19	1.42	1.71

Underkeel Clearance—St. Lawrence River, Quebec to Montréal (Container Ships)									
Vessel's speed not exceeding (Knots)									
Vessel beam not exceeding	7	8	9	10	11	12	13	14	15
	Required underkeel clearance (meters, this includes the estimated squat and the maneuverability/safety margin)								
Maneuverability/safety margin (meters)									
—	0.61	0.61	0.61	0.61	0.69	0.76	0.84	0.91	0.99

Note: * An exception to the margin of safety/maneuverability is allowed for a ship width not exceeding 24m at a speed of 6 to 7 knots. Only in this case, a margin of 0.58m is accepted instead of 0.61m *

** The above parameters are presented on the basis that the vessel's Master or Officer-in charge has given consideration to other specific elements which may have an impact on under-keel clearance; some of which are: the accurate determination of water level (including tides) during vessel's transit, the vessel's speed, the wind and waves effect and the vessel's response to it, the estimation of the vessel's draft (changes in ballast), and additional squat effects due to passing within close proximity to the bank of the channel or when meeting/overtaking another vessel. The vessel's Master or Officer-in Charge has the ultimately responsibility for the vessel's safety at all times**

Quebec Harbor to Trois Rivières Harbor

10.39 Pointe a Puiseaux (46°46'N., 71°15'W.) stands on the NW shore of the St. Lawrence River, about 1 miles above Anse au Foulon. A traffic control reporting station for vessels bound up and downriver stands on the point. The river is about 0.4 mile wide between the point and the opposite shore.

The St. Lawrence River between Quebec Harbor and Trois Rivieres extends irregularly W and SW for about 67 miles. Parts of the river are naturally deep, but those sections of the channel which are obstructed by shoals have been dredged. Vessels are advised to closely follow the alignment of the channel ranges, because lesser depths may be encountered along the sides of the dredged channels.

The channel is dredged to a depth of 11m from Buoy D46 (46°33'N., 72°10'W.), above Deschaillons-sur-Saint-Laurent, to Buoy D77 (46°29'N., 72°14'W.), above Batiscan. Between Buoy D77 and Buoy M177, in Montréal Harbor, the channel is dredged to a depth of 11.3m. However, a 7.5m wide band, with a depth of 10.7m, runs along the inside limits of each side of the channel between Buoy D142 and Buoy PAT (45°39'N., 73°29'W.). Restrictions in place for large commercial vessels between Buoy M163 and Buoy M167.The meeting or passing of two deep-draft vessels, each requiring a depth of 10.7m or more, is forbidden at any time in this stretch of the river. If such a meeting is about to take place, the downbound vessel will have priority.

Tides—Currents.—The range of the tide is reduced at the high stage of the river above Quebec; the tidal differences in time also vary with the season. At Pointe au Platon and above, the effect of neap tides is to cause the LW level to be lower than at spring tides. The height of spring and neap tides vary with the change of the moon's declination. It is very possible for the levels of two neap tides during a month to differ as much as 0.4m.

Because of the narrowness of the river at Le Sault, the ebb has a velocity of up to 5.5 knots and a velocity of nearly 5 knots at flood. Tidal eddies are formed up to 0.75 mile below the Quebec Bridge and the Pierre Laporte Bridge at the beginning of the flood and close above the bridges at the beginning of the ebb.

Underkeel Clearance—St. Lawrence River, Quebec to Montréal, Other Ships (Other than Container Ships)									
Vessel's speed not exceeding (Knots)									
Vessel beam not exceeding	7	8	9	10	11	12	13	14	15
	Required underkeel clearance (meters, this includes the estimated squat and the maneuverability/safety margin)								
24m	0.80	0.90	0.97	1.06	1.24	1.44	1.66	1.92	2.21
26m	0.85	0.92	1.00	1.09	1.29	1.49	1.73	1.99	2.29
28m	0.86	0.94	1.03	1.13	1.33	1.54	1.79	2.06	2.37
30m	0.88	0.96	1.05	1.16	1.37	1.59	1.85	2.13	2.46
32m	0.89	0.98	1.08	1.19	1.41	1.64	1.91	2.19	2.53
34m	0.91	1.00	1.10	1.23	1.45	1.69	1.97	2.26	2.61
36m	0.93	1.02	1.13	1.26	1.49	1.74	2.02	2.32	2.69
38m	0.94	1.04	1.16	1.29	1.53	1.78	2.08	2.39	2.77

Underkeel Clearance—St. Lawrence River, Quebec to Montréal, Other Ships (Other than Container Ships)									
Vessel's speed not exceeding (Knots)									
Vessel beam not exceeding	7	8	9	10	11	12	13	14	15
	Required underkeel clearance (meters, this includes the estimated squat and the maneuverability/safety margin)								
40m	0.96	1.06	1.18	1.32	1.57	1.83	2.13	2.44	2.84
42m	0.97	1.08	1.21	1.36	1.61	1.88	2.18	2.51	2.91
44m	0.99	1.10	1.23	1.39	1.65	1.93	2.24	2.57	2.98
Estimated squat (meters)									
24m	0.22	0.29	0.36	0.45	0.55	0.68	0.82	1.01	1.22
26m	0.24	0.31	0.39	0.48	0.60	0.73	0.89	1.08	1.30
28m	0.25	0.33	0.42	0.52	0.64	0.78	0.95	1.15	1.38
30m	0.27	0.35	0.44	0.55	0.68	0.83	1.01	1.22	1.47
32m	0.28	0.37	0.47	0.58	0.72	0.88	1.07	1.28	1.54
34m	0.30	0.39	0.49	0.62	0.76	0.93	1.93	1.35	1.62
36m	0.32	0.41	0.52	0.65	0.80	0.98	1.18	1.41	1.70
38m	0.33	0.43	0.55	0.68	0.84	1.02	1.24	1.48	1.78
40m	0.35	0.45	0.57	0.71	0.88	1.07	1.29	1.53	1.85
42m	0.36	0.47	0.60	0.75	0.92	1.12	1.34	1.60	1.92
44m	0.38	0.49	0.62	0.78	0.96	1.17	1.40	1.66	1.99
Maneuverability/safety margin (meters)									
—	0.61	0.61	0.61	0.61	0.69	0.76	0.84	0.91	0.99
Note: * An exception to the margin of safety/maneuverability is allowed for a ship width not exceeding 24m at a speed of 6 to 7 knots. Only in this case, a margin of 0.58m is accepted instead of 0.61m *									
** The above parameters are presented on the basis that the vessel's Master or Officer-in charge has given consideration to other specific elements which may have an impact on under-keel clearance; some of which are: the accurate determination of water level (including tides) during vessel's transit, the vessel's speed, the wind and waves effect and the vessel's response to it, the estimation of the vessel's draft (changes in ballast), and additional squat effects due to passing within close proximity to the bank of the channel or when meeting/overtaking another vessel. The vessel's Master or Officer-in Charge has the ultimately responsibility for the vessel's safety at all times**									

Caution.—Vessels are required to have a minimum underkeel clearance, when on passage between Quebec and Montréal, assuming a speed of 7 to 8 knots. The clearance is based on the vessel's beam and varies from 0.84m for a beam less than 25.9m, to 1.52m for a beam greater than 39.6m.

During the winter, the lighted buoys are removed; some of these are replaced by spar buoys.

10.40 The N shore of the St. Lawrence River between Pointe a Puiseaux and the Quebec Bridge, and the Pierre Laporte Bridge, about 2.5 miles SW, is bordered by the installation of the Irving Oil Company. The village of New Liverpool stands on the opposite shore. The Rivière Chaudiere discharges into the St. Lawrence River on the same shore, about 0.8 mile to the W.

The Quebec Bridge (Pont de Quebec), with a distance between the piers of 549m, has a vertical clearance of 35m on the E side and 37m on the W side. Remains of metallic The Pierre Laporte Bridge, close upstream of the Quebec Bridge, has a distance of 665m between the piers and a vertical clearance of 49m.

Overhead power cables, with a vertical clearance of 48m, span the river between the two bridges. Other power cables, with a clearance of 45m, lie close upstream of the Pierre Laporte Bridge. The vertical clearances off the overhead cables may be reduced to 32m during severe winter icing conditions.

The channel under the two bridges is called LeSault because of the strength of the ebb current and because it also is the narrowest part of the St. Lawrence River between Quebec and Trois Rivières.

The **Rivière du Cap Rouge** (46°45'N., 71°20'W.), with the village of Cap Rouge at its mouth, stands 2 miles W of the Pierre Laporte Bridge. The land in the vicinity consists of steep brown colored cliffs about 53 to 61m high. About 0.6 mile W of the Rivière du Cap Rouge mouth, a water intake extends 440m S from the coast. A crib, with a depth of 5m, is posi-

tioned near the end of the extension. A second crib, with a depth of 3.5m lies about 275m S of the coast.

Pointe Deschambault stands about 1.5 miles upriver from the Rivière du Cap Rouge. An anchorage area, with depths of 12 to 20m, lies S of Pointe Deschambault on both sides of the main ship channel. The N anchorage area is for the use of vessels with explosives.

10.41 Saint Nicolas (46°42'N., 71°24'W.), a small village with a church, stands on the S shore of the river about 2.3 miles SW of Pointe Deschambault. Several conspicuous white buildings stand on the N shore opposite Saint Nicolas. A water tower, 107m in height, stands SSE of the church.

Pointe St.-Nicolas, which consists of high cliffs, stands 2 miles W of Saint Nicolas. A traffic reporting station for upbound and downbound vessels is abreast the point.

Haut-Fond St.-Augustin, an extensive shoal which obstructs the river between Pointe St.-Nicolas and the N shore, has a 10.6m deep, 244m wide, channel dredged through it. The ebb sets through this channel at a rate of 3 knots and the flood at a rate of 2.75 knots.

The S shore in the vicinity of **Pointe Aubin** (Pointe aux Pins) (46°41'N., 71°30'W.), about 2.5 miles above Pointe St.-Nicolas, consists of slate cliffs about 30.5m high. Anchorage can be taken N of the ship channel opposite Pointe aux Pins, in depths of 11 to 18m.

Saint-Antoine-de-Tilly (46°40'N., 71°34'W.), a small village with a church, stands about 3 miles WSW of Pointe aux Pins. The intervening shore is cliffy. Pointe de St.-Antoine stands close W of the village.

The village of Neuville, with a church, stands on the N shore opposite Pointe de St. Antoine. A pier, with shallow depths alongside its outer face, extends from the shore at Pointe aux Trembles close E of Neuville. On the SW side of the pier, a berthing length of 60m exists, with depths from 0.3 to 0.8m alongside. The pier head is protected by boulders and exhibits a light. A racon transmits from the light structure on Pointe aux Trembles.

A marina is situated between the pier and the breakwater. Private range lights are situated 183m NW of Pointe aux Trembles Pier Light and lead 321.5° to the marina basin.

Les Fonds (46°39'N., 71°36'W.), a small village fronted by a pier, stands about 1 mile above Pointe de St. Antoine. The village of Ste.-Croix Est stands on the same shore, about 1.8 miles farther upriver. The shore in this area is cliffy.

10.42 Sainte-Croix (46°37'N., 71°44'W.), a village with a church with two spires, stands on the S shore about 4 miles above Ste.-Croix Est. An illuminated cross is located about 1 mile WNW of the church. An extensive drying rocky flat strewn with boulders lies off both shores of the river in this area.

In the river off Ste.-Croix, the duration of the ebb is 8 hours and that of the flood is 4 hours 30 minutes. The ebb sets at a rate of 3 knots and the flood at a rate of 2 knots.

A river traffic reporting station for upbound and downbound vessels is situated abreast the Ste.-Croix Range Lights.

Les Ecureuils (46°40'N., 71°43'W.), a small village with a church, stands on the N shore about 3.3 miles NNE of Ste.-Croix. A pier, with a depth of 3.4m alongside its outer end at HW, extends from the shore at Les Ecureuils.

The town of Donnacona stands E of the mouth of the Riviere Jacques-Cartier, about 1.5 miles W of Les Ecureuils. There is a church with a spire in the town. A large conspicuous white water tank marked "Donnacona" is situated about 0.7 mile NE of the church. A microwave tower lies 0.9 mile NW of the church.

Caution.—Fishing gear is located in the vicinity of position 46°41'N, 71°49'W. Mariners are requested to exercise caution in this area.

Pointe au Platon (46°40'N., 71°51'W.), a flat narrow peninsula which rises to a height of 46m a short distance inland, stands on the S shore of the river, about 2.5 miles W of Cap-Sante. Ruins of a drying wharf lie at the end of the point.

Caution.—A sewer outfall extends about 0.8 mile in a SSW direction from a position on shore about 0.3 mile ESE of the entrance to the Riviere Jacques-Cartier.

A pier extends from the shore abreast of Cap-Sante, about 1.8 miles W of Donnacona.

10.43 Portneuf (46°41'N., 71°53'W.) stands on the N side of the St. Lawrence at the mouth of the Rivière Portneuf, about 1.8 miles NW of Pointe au Platon. A T-shaped wharf extends over 0.5 mile from the shore close W of the Rivière Portneuf. The T-shaped public wharf is in ruins and berthing is prohibited. Vessels must keep a distance of 20m off the wharf.

The mean rate of the ebb off Pointe au Platon is about 2.3 knots; the rate of the flood is 1.25 knots. The ebb is reported to set diagonally across the channel to the N shore abreast the pier at Portneuf, and is then deflected SE across the channel abreast of Pointe au Platon.

Contact Information.—See the table titled **Portneuf—Contact Information**.

Portneuf—Contact Information	
Harbormaster	
Telephone	418-286-4923
Facsimile	418-286-6456

Île Richelieu (46°38'N., 71°55'W.), a V-shaped island, lies alongside the main ship channel about 2.8 miles SSW of Portneuf Pier. Rapides Richelieu is the name of the section of the river NW of the island. The width of the channel is 305m in this vicinity. An extensive drying shale bank, covered with mud and strewn with boulders and rocky patches, extends from both shores in the vicinity of this river.

Range lights are shown from Vieille Eglise, 2.5 miles above Ile Richelieu. These lights, in line bearing 222°, lead through Rapides Richelieu. A racon is located at Ile Richelieu Light.

In the vicinity of Rapides Richelieu, the ebb flows for about 10 hours, with a maximum rate of 8 knots under certain conditions. The flood lasts for 2 hours at springs, with a maximum rate of 1.5 knots. At neaps, there is no perceptible flood.

In the dredged channel, the ebb has a maximum rate of 5.5 knots while the flood has a maximum rate of 2 knots.

Deschambault, a small village on some 21.3m high cliffs, stands on the NW shore abreast of Ile Richelieu.

10.44 La Vieille-Eglise (46°37'N., 71°57'W.) is a small village fronted by an unusable pier and surrounded by large boulders. The hamlet of La Vieille-Eglise has been annexed to the municipality of Lotbiniere, is located on the south shore; there is a ramp protected by two piers encased with stone. Another small wharf, close NE, dries at LW and has a ramp. This wharf was formerly used by a ferry crossing to the NW shore. The shore between this village and Pointe Langlois, about 2.5 miles farther SW, is bordered by cliffs about 24m high.

The Grondines Anchorage lies on both sides of the main ship channel to the NW of Pointe Langlois.

Leclercville, a small village with a church, stands on the S side of the mouth of the Riviere du Chene close S of Pointe Langlois. A pier stands near the church. The pier dries.

The village of St.-Charles des Grondines, fronted by a pier with shallow depths, stands on the N shore of the St. Lawrence River opposite Leclercville. **Pointe des Grondines** (46°35'N., 72°04'W.), an irregular, low projection, stands about 1.5 miles WSW of the above pier. Cap Charles, 31m high, stands on the S shore, about 1 mile S of Pointe des Grondines.

A traffic reporting station for upbound and downbound vessels is situated abreast of St.-Charles des Grondines. Deschaillons-sur-St.-Laurent, a village fronted by a pier with depths of 3.7 to 3.9m alongside its outer face, stands about 1.8 miles W of Cap Charles. At certain stages of the tide, considerable eddies are encountered off the pier.

A marina is situated close W of the public pier. It is protected from the W by a breakwater, from the E by the pier, and by pontoons on the N side. Depths in the marina are about 0.8 to 1.8m. During the boating season, all vessels must reduce their speed off the marina in order to prevent damage to the facilities and small craft.

In the channel off Deschaillons-Sur-St.-Laurent (46°34'01.8"N, 72°06'31.8"W) a 5-knot current occurs during ebb spring tides.

10.45 Cap Levrard (46°32'N., 72°10'W.), 29m high, stands on the SE shore, 2.25 miles WSW of Deschaillons-sur-St.-Laurent.

The main shipping channel is dredged to a depth of 11m from Buoy D42 (46°33'N., 72°09'W.), above Deschaillon-sur-Saint-Laurent, to Buoy Ile Sainte Helene (45°32'N., 73°32'W.), moored in Montreal Harbor; however, a 7.5m wide band, which has a depth of 10.7m, runs along the inside boundaries of each side of the channel between Buoy D42 and Buoy PAT (45°39'N., 73°29'W.).

The village of Sainte-Anne-de-la-Perade stands on both banks of the Riviere Sainte-Anne, about 1 mile above the entrance, on the N bank of the St. Lawrence River opposite Cap Levrard. A church with two square towers stands in the village. A chimney, prominent from the river, is situated about 0.5 mile SW of the church. There is a ramp on the E side of the river, a short distance from the first bridge which is a fixed highway bridge with a vertical clearance of 3.3m. Further upstream, there is a second bridge which is a fixed railway bridge with a vertical clearance of 4.9m.

Saint-Pierre-les-Becquets, a village fronted by a pier, stands on the SE shore 2.5 miles above Cap Levrard. A narrow channel leads from the river to the pier, but is available only to small craft.

The **Riviere Batiscan** (46°31'N., 72°14'W.) discharges into the St. Lawrence River on the NW shore, about 0.7 mile N of the Batiscan Range Lights. A narrow channel passes between grassy foreshores bordering the entrance to the river. Private buoys mark the channel that leads to a marina. The river is spanned by two bridges with vertical clearances of 5.5m, 0.5 mile within the entrance, and 6.4m, 0.4 mile farther upstream.

The marina is situated on the N shore, 0.4 mile from the mouth of the river, below the downstream bridge.

A dolphin lies S of the marina pontoons. Numerous submerged dolphins are situated above the bridge.

The village of Batiscan, fronted by a 75m long pier, stands about 1.3 miles S of the Riviere Batiscan. The wharf is approached from the NE through a channel, no longer dredged, with depths, in 1992, of between 3.1m and 3.8m. The approach to the channel has a least depth of 2m.

The depth alongside the wharf varies between 3.7m and 4m, with 0.6m on its S face. A light is exhibited at the wharf and a boat slip is on the N side. Batiscan Range Lights are shown approximately 0.8 mile downstream from the village.

An anchorage area, dredged to 10.7m, lies on the W side of the main ship channel abreast of Batiscan.

A traffic reporting station for upbound and downbound vessels is situated abreast of Batiscan.

During spring tides, the duration of the flood off Batiscan is about 1 hours 30 minutes. At neaps, the set is always downstream. The set with the ebb gradually increases in strength from Batiscan to the Rapides Richelieu, except in the vicinity of the Groundines Anchorage.

Pointe à la Citrouille (46°12'N., 72°16'W.), a low projection, stands on the NW shore about 3 miles S of Batiscan. Frequent dredging is necessary in the main ship channel SW of the point because of heavy silting.

Champlain, a small village fronted by a pier with a depth of 2.3m alongside its outer face, stands on the N shore 3 miles above Pointe à la Citrouille. A shoal, with a depth of 1.1m, lies close E of the SW end of the wharf. A radar reflector is located on the wharf.

Becancour (46°21'N., 72°26'W.), a small town, stands 1.5 miles above the mouth of the Riviere Becancour, about 5.8 miles SW of Champlain.

10.46 Port de Bécancour (46°24'N., 72°23'W.) is situated on the S side of the St. Lawrence River, about 3 miles ENE of the mouth of the Riviere Becancour. The port and its approaches have been dredged; the outer approach area to a depth of 10.3m and the S area to a depth of 10.7m. The area is subject to silting and lesser depths should be expected. Vessels up to 244m long, with a maximum draft of 10.67m, can be accommodated.

The port is owned by the Government of Québec and managed by the Société du Parc Industriel et Portuaire de Bécancour (telephone: 1-819-294-6656); it is accessible year-round. The port is equipped for handling bulk, general, and containerized cargo, and operates all year round. Imports are alumina, bauxite, chrome ore, coal, coke, magnesite, quartz, salt calcium, sodium chloride, and steel coils. Exports are aluminum, bricks, caustic liquids, lumber, and magnesium.

Tides—Currents.—The tidal influence in Becancour is very small; the maximum rise and fall of the tide is about 0.8

m. However, during the year, the monthly mean water level varies between 0.4 and 2.6m above chart datum. The current rate increases from 2 knots to 3.5 knots when navigating from the main shipping channel to the wharf approaches.

Aspect.—An "optical guidance system" is used as range lights for the basin approach; they are in line bearing 167.5°. This system, situated near the shore SE of Berth 5, consists of a guidance panel showing illuminated directional arrows which become vertical lines when the ship is on the indicated course. The "optical guidance system" is operational only for vessels approaching the wharf and allowed to use the harbor installations

Pilotage.—Pilotage is compulsory. The river pilots will dock and undock vessels upon arrival and departure. For departure, a first notice shall be given 12 hours before the estimated time of departure (ETD) and a final notice confirming or correcting the ETD at least 4 hours before the ETD. Communications should be made to the Pilot Dispatch Centre either by telephone at 1-800-361-0747 or to a MCTS Centre.

Vessels must use the services of a pilot at Les Escoumins. The pilot is embarked off Les Escoumins and changed at Quebec. Twenty four hours advance notice must be given to the Montréal pilot station of their ETA at Les Escousmins if their point of origin is E of the Strait of Belle-Isle or the Cabot Strait. A second notice must be given 12 hours before ETA and final confirmation 6 hours before arrival. In case of vessels arriving from points W of the Strait of Belle-Isle, the Cabot Strait or the Canso Strait, only 12 hours and 6 hours notice are required. The pilot boat service maintains a 24 hour listening watch on VHF channel 9.

Bécancour—Contact Information	
Port Authority	
Telephone	819-294-6656 (office hours)
	819-372-6966 (evening hours)
Facsimile	819-294-9020
E-mail	spipb@spipb.com
Web site	http://www.spipb.com

Contact Information.—See the table titled **Bécancour—Contact Information**.

Anchorage.—Anchorage is available in the dredged area off the berths.

The Trois Rivieres downstream harbor limit lies between Pointe de Bécancour, the E entrance point to the Riviere Becancour, and Pointe Lottinville, on the opposite shore of the St. Lawrence River. An emergency anchorage area is positioned opposite of the Port of Becancour near position 46°24'N, 72°23'W.

Trois Rivieres Harbor (46°21'N., 72°32'W.)

World Port Index No. 2210

10.47 Trois Rivieres Harbor, a commercially important port stands on the N bank of the St. Lawrence River, about 67 miles above Quebec and 71 miles below Montreal. The downstream harbor limit is a line drawn between Pointe Lottinville, on the north shore, and the vicinity of Pointe de Becancour, on the south shore. The upstream harbor limit is drawn from a position on the north shore, 0.7 mile SW of Pointe aux Ormes pilot station in a 154º direction to the south shore. The harbor limits are shown on the chart.

The city of Trois Rivieres stands on the W side of the mouth of the Riviere Saint Maurice, and the city of Cap-de-la-Madeleine stands on the E side. Most of the river berths lie adjacent to the city of Trois Rivieres. Trois Rivieres is a port of entry.

The port handles approximately 2.5 million tonnes of cargo annually. The main imports are: grain, sodium sulphate (salt cake), clay, aluminum, coke, alumina, bauxite, salt and petroleum products. The main exports are pulp and paper, grain, steel, asbestos and ore.

Ice.—The port is open year-round, however, from January to March inclusive, vessels navigating to Trois-Rivières need to be reinforced for ice. In winter, vessels should not attempt to navigate at night without having detailed information on ice conditions.

Tides—Currents.—The tidal influence at Trois Rivieres is very small. The maximum rise and fall of the tide is only about 0.3m.

Becancour—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Terminaux Portuaires du Quebec, Inc.						
B-2	150m	10.6m	193m	—	26.0m	General cargo.
B-3	219m	10.6m	225.5m	—	23.7m	General cargo.
B-4	214m	10.6m	225.5m	—	32.2m	General cargo.
Aluminerie de Becancour, Inc.						
B-5	292m	10.6m	225.5m	—	32.2m	Alumina, petcoke, and breakbulk.
Servitank						
B-1	244m	10.6m	161.6m	10.3m	23.0m	Chemicals.

Trois Rivieres—Berth Information					
Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
General Cargo and Container Terminal					
No. 9	175m	11.0m	—	10.7m	Breakbulk.
No. 10	200m	10.7m	226.1m	10.4m	Containers and breakbulk.
No. 11	200m	10.7m	225.5m	10.4m	Vegetable oil.
Elevators Terminal					
No. 16	178m	10.7m	230m	10.4m	Grain.
No. 17	221m	10.7m	228m	10.4m	Grain, alumina, and calcined coke.
Solid and Liquid Bulk Terminal					
No. 13	220m	11.0m	225.5m	10.7m	Breakbulk, liquid bulk, and passengers.
No. 14	166m	10.7m	200m	10.4m	Breakbulk and liquid bulk.
No. 15	121m	10.7m	120m	10.4m	Breakbulk and liquid bulk.
No. 19	221m	10.7m	226.1m	10.4m	Caustic soda, liquid bulk, and dry bulk.
No. 20	221m	10.7m	230m	10.4m	Dry bulk, clay, liquid bulk, and coal tar.

Near the downstream limit of Trois Rivieres Harbor, NE of Pointe de Becancour, the current sets to the E at a rate of 1.5 knots. This current must be allowed for when altering course in this position. The average rate of the current is 2.8 knots, between the wharf at Cap-de-la-Madeleine and Ile de la Potherie. The average rate is 1.5 knots near the upriver limit of the harbor.

Depths—Limitations.—The main shipping channel through the port has a least width of 244m and a least depth of 11.3m and is well marked by buoys. Under Pont Laviolette, the channel width is reduced to 225m due to the protective fill surrounding the bridge piers. The various channel courses are shown on the chart.

From Pointe Lottinville to Cap-de-la-Madeleine,the NW shore of the river is steep, 9.1m in elevation. A flat extends nearly 0.5 mile from the south shore close to Pointe de Bécancour narrowing gradually to the wharf at Sainte-Angele-de-Laval. This flat dries at low water levels and is composed of mud, sand and clay, strewn with boulders and rocks. Dumping grounds have been established close upstream and downstream of the wharf. The limits are shown on the charts.

Between Cap-de-la-Madeleine and Trois-Rivieres, the mouth of Riviere Saint-Maurice is 1.2 miles wide and contains a group of islands, the two nearest to the St. Lawrence River being Ile La Poterie and Ile Saint-Quentin. Two miles upstream between Sainte-Angele-de-Laval and Riviere Godefroy an extensive flat stretches off the shore for about 0.5 mile. This flat, of which a section in proximity of the wharf was formerly used as a dumping ground, dries from 1.2 to 0.3m in places. The NW shore of the St. Lawrence River is low-lying from Riviere Saint-Maurice to Pointe aux Ormes, 3.2 miles upstream.

A set of power transmission lines, with a vertical clearance of 38m span the St. Lawrence River above the main berthing area. During severe icing conditions the vertical clearance from these power transmission lines is reduced to 26m. A bridge with a vertical clearance under the main span of 50m crosses the harbor farther up the river.

Owing to continual silting, the depths alongside the wharves are constantly changing, but are reported to be maintained by dredging to the depths indicated.

Aspect.—Three radio towers of the Canadian Coast Guard radio relay station are situated close west of **Pointe Lottinville** (46°24'N., 72°27'W.); one tower is taller than the others.

The imposing Basilica of Notre-Dame-du-Cap stands close N of the Ports Canada Wharf at Cap-de-la-Madeleine.

Large paper mills are situated on Île de la Potherie in the mouth of the Riviere Saint-Maurice and at Trois Rivieres, near the SW entrance point to the Rivière Saint-Maurice. Kruger has a large plant near the SW limit of the city of Trois-Rivieres.

Pilotage.—Pilotage is compulsory. Vessels inbound from E of Les Escoumins are boarded by pilots from Les Escoumins pilot station and exchange pilots in Quebec City. The river pilots will dock and undock vessels upon arrival and departure. For departure, a first notice shall be given 12 hours before the estimated time of departure (ETD) and a final notice confirming or correcting the ETD at least 4 hours before the ETD.

Vessels bound for destinations farther W exchange pilots in Trois-Rivieres. The pilot station is located at Pointe aux Ormes (46°18'N., 72°35'W.) on the N shore of the river, about 0.6 mile upstream of Pont Laviolette. Masters of vessels must communicate their request for the exchange of pilots at an MCTS Centre 4 hours before arrival.

Regulations.—Vessels maneuvering or otherwise underway in the Port of Trois-Rivieres and also while at a berth or at anchor are subject to the Port Authorities Operations Regulations. A copy of these regulations may be obtained from the port authority. Regulations require that no vessel shall move in the port at a speed that may endanger life or property. The Trois-Rivieres Port Authority has authority over vessels in the port and may order vessels to move, to use tugs, to berth or anchor in locations which it designates. Certain restrictions on berthing and anchoring are set forth, along with the require-

Trois Rivieres Harbor

ment for vessels to inform the port authorities in advance of their intention to berth in the port.

Vessels are regulated with respect to cargo-handling operations including the usage of equipment and lighting in these operations. Also included are instructions for reporting in the event of accidents, cargo or gear lost overboard and safety requirements. Specific vessel regulations govern the carriage and handling of explosives and dangerous goods, as well as fire prevention. No vessel carrying explosives shall tie-up or anchor within the limits of the Port of Trois-Rivieres.

Vessels should send their ETA on departure from last port. Further ETAs should be sent via the agent 5 days, 48 hours, and 24 hours in advance.

Contact Information.—See the table titled **Trois Rivieres—Contact Information**.

Trois Rivieres—Contact Information	
Port Authority	
Telephone	819-378-2887
Facsimile	819-378-2487
E-mail	adm_gen@porttr.com
Web site	http://www.porttr.com

Anchorage.—No vessel, except in an emergency, shall anchor within the limits of the harbor without prior permission of the Port Manager, and then only at such place as is assigned. The anchorage area for the port is situated between the pilot station at Pointe des Ormes and the upriver harbor limit. The positions of the six anchorage berths are charted. No vessels shall anchor in these berths during the winter season.

Anchorage is prohibited in the vicinity of the submarine cable areas which lie NE and SW of the bridge crossing the St. Lawrence River, close NE of Pointe des Ormes.

Vessels carrying explosives are not permitted to berth or anchor within the port limits of Trois Rivieres.

Caution.—Considerable silting is experienced at Trois Rivieres; therefore, the natural depths alongside the wharves are constantly changing and dredging is necessary to maintain the charted depths.

There may be less water than shown on the chart. A particularly vulnerable area lies between Trois Rivieres and Lie Saint Quentin, at the mouth of the Rivière Saint Maurice.

Trois Rivières Harbor to Sorel Harbor

10.48 The main ship channel in the river from Trois Rivières to Lac Saint-Pierre is at least 305m wide. An anchorage area is situated on the N side of the channel to the N of Port-Saint-François.

Pont Laviolette, a high-level bridge with a vertical clearance of 50m over the main shipping channel, crosses the St. Lawrence River about 0.5 mile NE of Pointe des Ormes. An overhead power cable, with a vertical clearance of 50m (37m under sever icing conditions), spans the St. Lawrence River about 0.8 mile NE of the bridge. Two racons transmit from the bridge.

Regulations.—In recent winters, a speed limit has been imposed on vessels navigating the St. Lawrence River between Trois Rivières and Montréal. In the past, some vessels have traveled at excessive speeds during the winter, creating large waves which

Pont Laviolette (225m horizontal center span with a vertical clearance of 50m)

have broken large sheets of ice from the shoals and banks, thereby blocking the channel with large ice jams. As a result, shipping had to be stopped until the channel could be cleared. Winter speed regulations and other information regarding winter navigation on the river are promulgated in Canadian Notices to Mariners.

Caution.—The speed of the current speed in the main shipping channel under Pont Laviolette increases due to the narrowing caused by protective fill surrounding the bridge piers. The current can reach speeds of up to 3.5 knots at low water. It is reported that eddies form downstream near the piers. The Canadian Coast Guard Hovercraft Base is located on the N shore, downstream of Point Laviolette.

Port-Saint-François (46°16'N., 72°37'W.) stands on the S side of the river, about 3.3 miles SW of Port Laviolette. The pier in the port is in ruins. A traffic control reporting station for vessels bound down river only stands abreast the port.

The Rivière Nicolet discharges into the St. Lawrence River at the E end of Lac Saint-Pierre. The town of Nicolet stands on the E bank of the river, about 2 miles above the mouth.

The river current in the main ship channel between the mouth of the Rivière Nicolet and Port-Saint-François sets to the E at a rate of about 2 knots, but not in the direction of the channel. The town of Nicolet is situated about 2 miles from the mouth of Rivière Nicolet.

It is prohibited to land on Île Lozeau and Île Moras, situated on the west side of the mouth of Rivière Nicolet. The shoreline of the lake between Île Moras and Longue Pointe, inclusively, is the property of the Department of National Defence. The wharf located on the west side of Île du Domaine is owned by the same Department and is strictly reserved for military use and firing exercises. There is also Nicolet Migratory Bird Sanctuary (Environment Canada) in this area and access is regulated.

Note.—In order to avoid interference with navigation in the main ship channel, it is recommended that small craft follow the small craft channel which commences off **Lanoraie** (45°57'N., 73°13'W.) and ends at Montréal. The channel has a least depth of 1.7m, a least width of 61m, and is marked by buoys and range lights.

10.49 Lac Saint-Pierre (46°13'N., 72°49'W.), which is naturally shallow, is about 16 miles long and 6 miles wide. The main ship channel through the lake is at least 229m wide and dredged to a depth of 11.3m. An anchorage area, dredged to a depth of 10.7m, stands near the middle of the lake. A traffic control reporting station for upbound and downbound vessels is situated abreast of this anchorage area.

The current in Lac Saint-Pierre sets in the direction of the main ship channel, except in the extreme NE part of the lake. The velocity of the current in the lake ranges from 1 to 2 knots.

Four artificial islands have been constructed, four ice booms anchored, and three piers installed on the N side of the main ship channel to assist in ice control on the lake during the winter months; the W pier dries. Five similar islands have been constructed on the S side of the channel. The positions of these aids can best be seen on the chart.

From November to April, there is an ice boom anchored SE of Pointe de Yamachiche. Buoys are moored to indicate submerged cables and anchors established throughout the year. Anchorage is prohibited in this area.

Several racons transmit from this area. One racon transmits from Yamachiche Curve West Range, one from the rear light structure of Lac Sainte Pierre Upstream Range, and one from Ile aux Raisins.

The village of Yamachiche stands about 1 mile above the mouth of the Petite Rivière Yamachiche, 6.5 miles W of **Pointe du Lac** (46°17'N., 72°40'W.). A church with a conspicuous dome stands in the village. A shallow channel leads from the lake to the village. The town of Louiseville stands 2.75 miles above the mouth of the Rivière du Loup, about 4.5 miles W of the mouth of the Petite Rivière Yamachiche. A church with two prominent spires stands in the town. A shallow buoyed channel leads from the lake to the town.

The **Rivière Saint François** (46°07'N., 72°55'W.) empties into the S shore at the W end of the lake directly opposite the Rivière du Loup. A shallow channel leads upriver to the village of Notre-Dame-de-Pierreville. Excellent shelter is provided in the river for small craft.

Caution.—A Department of National Defense military firing practice area is established on the SE side of the main shipping channel in Lac Saint-Pierre; it is marked with several buoys. Consult the chart for the limits of the area. For additional information mariners should contact the firing range controller at the Nicolet Military Base (telephone: 819-293-2004).

Sorel Harbor (46°03'N., 73°07'W.)

World Port Index No. 2220

10.50 Port of Sorel comprises a section of the St. Lawrence River near the mouth of Rivière Richelieu and includes a 5.2 mile upstream portion of Rivière Richelieu. The port is bound on the east by a line drawn from Îlets Percés in a 318° direction. These limits are shown on the chart.

Port of Sorel is a public port, administered by the Department of Transport. The port is open year-round; however, due to the likely ice conditions during the months of December through

March, it is recommended that vessels navigating upbound to Sorel-Tracy be strengthened for ice. The principal imports are grain, steel, ilmenite and anthracite. The main exports are grain, titanium oxide and scrap metal.

The town of Sorel stands on the E side of the mouth of the Rivière Richelieu and the towns of Tracy and Saint-Joseph-de-Sorel stand on the W side. Cargoes are landed at Sorel for transshipment up the Rivière Richelieu to Lake Champlain and the New York barge canal system. From Sorel-Tracy the distance to the downstream entrance of the St. Lawrence Seaway in Montréal via the main shipping channel is 37 miles, and the distance to Trois-Rivières is 31 miles.

Sorel is a port of entry.

Tides—Currents.—There is no tidal influence at Sorel.

The river current in the channel between Ile des Barques and Ile Lapierre attains a rate of 2.8 knots. Elsewhere in Sorel Harbor, the rate ranges from 1 to 1.6 knots.

Depths—Limitations.—The main ship channel through Sorel Harbor has a dredged depth of 11.3m, with a least width of 244m. The channel is marked by navigational aids. The two-way track under the bridge SW of Sorel-Tracy can be best seen on the chart.

Small craft are required to favor the N and S shores of the river when proceeding upriver through Sorel Harbor in order to avoid deep-draft vessels using the main ship channel.

The largest vessel accommodated had a draft of 11.5m.

On Richelieu River, Pont Turcotte, a highway bascule bridge with a closed vertical clearance of 16m, spans the river about 0.4 mile above its mouth. A railroad swing bridge, with a closed vertical clearance of 9.2m, lies about 0.2 mile upstream of the highway bridge. It was reported that the swing span of this bridge was permanently open.

Another highway bridge, with a vertical clearance of 22m, spans the river about 0.8 mile above the railway bridge. Vessels proceeding upstream are to use the W channel between piers, while vessels proceeding downstream are to use the E channel.

Close N of the railway bridge, an overhead power cable, with a vertical clearance of 40m, spans the river.

Tugs can be obtained if needed for maneuvering within the harbor area.

Sorel Wharf—Berths 14 and 15

Aspect.—Île aux Foins, a low island 1 mile in length, is situated on the W side of the main shipping channel 2 miles W of the mouth of Riviere Richelieu. Île des Barques range lights, in line bearing 218½°, mark Route de l'Île-des-Barques (Course Île-des-Barques). The front light is situated on the NE side of Île des Barques. The rear light is shown from a tower on Île des Barques. The range lights are visible only when in alignment. Sainte-Anne-de-Sorel range lights, in line bearing 232°, mark Route de Sainte- Anne-de-Sorel (Course Sainte-Anne-de-Sorel). The front light is located about 0.5 mile E of the public wharf. The rear light is located S of the church. The lights are visible in line of range. A second light, fitted on the front light structure, is visible from all points of marine approach. Île du Moine range lights, in line bearing 082½°, mark Route de l'Île-du-Moine (Course Île-du-Moine). The front light is located on the W end of the island. The lights are visible only when in alignment. Course de l'Île Dupas range lights, in line bearing 015°, mark Route de l'Île-Dupas (Course Île-Dupas). The front light is situated on the E shore of Île aux Cochons. The rear light is near the S end of Île Dupas. The lights are visible only when in alignment.

Sorel Harbor—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
City of Sorel-Tracy Berths			
No. 5	190m	7.6m	Breakbulk and storage.
No. 6	107m	5.5m	Breakbulk and storage.
No. 7N	100m	7.3m	Breakbulk and storage.
No. 7S Ro-Ro (Ferry)	62m	7.3m	Ferry docking area S end. Vehicles and foot passengers. Ramp 6.0m wide. Breakbulk.
No. 8	160m	6.1m	Coast Guard and service vessels.
No. 9	61m	3.1-6.1m	Coast Guard and service vessels.
No. 10	160m	3.1-6.1m	Coast Guard and service vessels.
Richardson International			
No. 11	152m	7.3m	Small vessels (Bassin Lanctot).

Sorel Harbor—Berth Information			
Berth	**Length**	**Depth**	**Remarks**
No. 12	106m	7.3m	Barges and small vessels (Bassin Lanctot).
No. 13	76m	7.3m	Small vessels (Bassin Lanctot entrance).
No. 14	187m	8.2m	Grain discharging (Trans-shipment).
No. 15	225m	11.0m	Grain loading (Trans-shipment).
Richelieu Quay			
No. 16	110m	4.5-5.0m	Vessel layup. Breakbulk.
No. 17	246m	4.5-5.0m	Vessel layup. Breakbulk.
Richelieu Quay			
No. 18	167m	4.7m	Breakbulk. Maximum loa of 220m.
Terminal Maritime Sorel-Tracy—QSL			
No. 19N	160m	11.0m	Breakbulk and steel.
No. 19S	160m	11.0m	Breakbulk and steel.
Rio Tinto fer et Titane			
No. 20E	215m	10.4m	Ore and coal.
No. 20W	168m	9.1m	Ore and coal.
No. 21	168m	9.2m	Ore and coal.
Kildair Terminal			
T-jetty	100m	11.0m	Crude and dirty products (including diluted bitumen). Vessels up to 85,000 mt, with a maximum loa of 260m and a maximum draft of 10.7m, can be accommodated.

Pilotage.—Pilotage is compulsory. Upbound vessels are boarded by pilots at Les Escoumins Pilot Station for the passage up to Sorel-Tracy. Pilots are exchanged in Québec City and Trois-Rivières. The river pilots will dock and undock vessels upon arrival and departure. For departure from the Port of Sorel, the ship's master shall give a first notice 12 hours before the estimated time of departure (ETD) and a final notice confirming or correcting the ETD at least 4 hours before the ETD. This information must be communicated to the Pilot Dispatch Centre either by telephone (1-800-361-0747) or to an MCTS Centre.

Regulations.—The Port of Sorel is subject to the Public Ports and Public Port Facilities Regulations. In addition, a maximum speed limit of 10 knots upbound and 14 knots downbound is imposed on all vessels in the Port of Sorel, making a wake effect of an average speed over the ground of 12 knots. Notwithstanding the provisions of the Collision Regulations, every power-driven vessel entering or leaving Rivière Richelieu at Sorel-Tracy shall keep to the E side of Rivière Richelieu. The mouth of Rivière Richelieu and the approaches to Bassin Lanctôt are very busy during the summer; mariners should use caution when sailing in these areas. Small craft proceeding upstream from Sorel-Tracy are required to hug the N and W shores of the river so as not to interfere with deep-draft vessels in the main shipping channel.

Except during the winter navigational season, during which speed limits are advertised by the Canadian Coast Guard, a voluntary measure of speed reduction applies to the marine industry and its commercial vessels in certain areas sensitive to wave action from passing vessels. Therefore, upbound vessels must reduce their speed to a maximum of 10 knots over the ground in an area 5.4 miles in length, starting from abeam of Îlets Percés and as far as Sainte-Anne-de-Sorel wharf; the downbound vessels must reduce their speed to a maximum of 14 knots over the ground. This measure is designed to specifically minimize the wave action from passing vessels and to protect the river banks. Mariners shall proceed with caution and at a safe speed before and in front of the private dock at Tracy as to minimize the interaction with the ship docked. See the document Practices and Procedures–May 2016 available on the Montréal Port Authority web site.

Vessels of less than 38,000 dwt may use the wharf at Tracey without the assistance of a tug; the approach speed must not exceed 0.3 knot. Vessels between 38,000 and 75,000 dwt must use a tug; the approach speed must not exceed 0.215 knot.

Contact Information.—See the table titled **Sorel—Contact Information**.

Sorel—Contact Information	
Port Authority	
Telephone	514-746-4316
	450-742-9919
Facsimile	418-746-4332

Anchorage.—Anchorage can be taken, in a depth of 10.7m, off **Île Lapierre** (46°05'N., 73°01'W.), N of the main ship channel. Safe anchorage can be taken in the St. Lawrence River off Sorel, and upriver from the city, in depths of 9.1 to 14.6m. There are also five anchor berths, T3 and T4, located within 275m of Saint-Joseph de-Sorel caution buoy close N of mid-channel, anchor berth P1, close S of mid-channel, and anchor berths S5 and S6, located close S of the main ship channel NE of Sorel Tracy.

Anchorage is prohibited in the area adjacent to the wharves at Sorel S of the main ship channel.

Caution.—Two overhead power cables cross the St. Lawrence River about 1 mile W of Sorel. The cables have a minimum clearance of 52m, although this clearance may be as little as 38m under severe icing conditions.

A wreck has been reported (2009) to lie in mid-channel of the St. Lawrence River about 0.25 mile SSE of Pointe des Peres near Courbe de Sorel Buoy S150.

Sorel Harbor to Montréal

10.51 The W limit of Sorel Harbor is also the N limit of Montréal Harbor. For administrative purposes, the N limit of Montréal Harbor extends from the W shore of the St. Lawrence River, about 1 mile S of the S point of Île aux Foins in a 105° direction to the E shore. Montréal Harbor is under the administration of the Montréal Port Corporation.

Tides—Currents.—The current between Sorel Harbor and Montréal is always outgoing, and has an average velocity of 1.8 to 2 knots.

Depths—Limitations.—The main ship channel, from the Upper Sorel Harbor limit, has a dredged depth of 11.3m and a least width of 244m for a distance of 27 miles to a position abeam of **Pointe-aux-Trembles** (45°38'N., 73°29'W.).

A small craft channel, which all vessels drawing less than 2.7m are required to use, commences S of the wharf at Lanorie and extends S along the W shore of the St. Lawrence River. The main ship channel extends S from abeam of Lanorie along the E bank of the river and has a least depth of 10.7m within its limits.

The main ship channel between Île aux Foins and Lanoraie, about 4.8 miles to the S, is about 0.5 mile wide between the fringing shoals.

A dolphin berth, about 101m long across the face, with a depth of 10.6m alongside, stands on the E bank of the river abreast of a steam generating plant about 2 miles S of Ile aux Foins. The berth can accommodate vessels up to 43,000 dwt; the maximum approach speed to the wharf is 0.5 knot. Four high chimneys stand in the plant. Overhead power cables, with a vertical clearance of 51.8m, cross the river adjacent to the power plant.

A traffic control reporting station for upbound and downbound vessels is situated abreast of the plant.

Anchorage—Several anchorages are located between Sorel and the Port of Montréal. All anchorages have depths from 10m to 14m and lie between Sorel and Lanoraie.

Caution.—In Varennes Traverse, a 2.5-knot current sets a little on the starboard bow of inbound vessels and must be guarded against.

10.52 Lanoraie (45°57'N., 73°13'W.), a small village on the W bank of the river, is fronted by a pier, the upstream side and outer end of which are protected by rocks.

The village of Lavaltrie, which has a church with two conspicuous spires in it, stands on the W bank of the river about 5 miles above Lanoraie.

Depths—Limitations.—A T-head pier extends from the shore abreast of the village. The outer end of the pier is 15m long and the upstream side is protected by rocks; there are two ramps. Ile de Lavaltrie lies about 0.5 mile off the village.

Île Saint-Ours, standing with its N end about 2 miles S of Lanoraie, is the N island of a group known as the Îles de Contrecoeur. This group extends about 5.5 miles SSW to Île du Dragon. This group of islands is a National Wildlife Area and access Regulations apply. In May, Îles de Contrecoeur are partly covered due to spring freshet and present a different appearance to that of the later summer months.

A pier with shallow depths alongside extends from the shore abreast of the village of Contrecoeur, about 2 miles SE of Lavaltrie.

The municipality of Contrecoeur is situated on the east shore of the river, about 2 miles SE of Lavaltrie. There is a public wharf encased with stone, with a landing pier and ramps. The lower section of the NW extremity may be submerged during runoff periods.

A traffic control reporting station for upbound and downbound vessels is situated abreast of these wharves.

A pier protected by a breakwater extends from the shore abreast of Vercheres. Only small craft can be accommodated. A statue stands near the pier. A submarine intake pipeline extends NW from the shore, about 0.2 mile SW of the pier.

Contact Information.—See the table titled **Contrecoeur—Contact Information**

Contrecoeur Terminal Wharves—Berth Information

Berth	Length	Depth	Maximum Vessel		Remarks
			LOA	Draft	
No. 1	229m	10.8m	248m	10.4m	General cargo. Berthing length of 306.6m (including dolphins).
No. 2	148m	5.7m	145m	—	General cargo.

Anchorage.—Good anchorage can be taken, clear of the main ship channel, between Sorel Harbor Limit and Lanoraie, except in the vicinity of a submarine cable about 1.5 miles downstream from Lanoraie.

Contrecoeur—Contact Information	
Port Authority	
Telephone	450-587-2073
E-mail	info@logistec.com
Web site	https://www.logistecterminals.com/network/contrecoeur.-qc/

10.53 The **Îles de Verchères** (45°48'N., 73°21'W.), a group of several islands which stand off this section of the river, is bordered by the small craft channel on its W side and the main ship channel on its E side.

Caution.—No vessel carrying bulk petroleum products or other bulk inflammable cargo, with a flash point below 23°C, may anchor anywhere above Lanoraie. Any vessel desiring to anchor for a short period of time must obtain permission from the Montréal harbormaster.

When ships are passing in the main ship channel there may be a vertical water movement of 1.2m in Vercheres, with strong surges in the entrance. It may be hazardous to approach or be berthed at the pier head during these conditions.

Except during the winter navigational season, during which speed limits are advertised by the Canadian Coast Guard, a voluntary measure of speed reduction applies to the marine industry and its commercial vessels in certain areas sensitive to wave action from passing vessels. Therefore, upbound vessels must reduce their speed to a maximum of 10 knots over the ground in an area 8.3 miles in length starting from abeam the downstream part of Île Saint-Ours (45°56'N, 73°13'W) to abeam the downstream part of **Île aux Boeufs** (45°49'N, 73°19'W); downbound vessels must reduce their speed to a maximum of 14 knots over the ground. This measure is designed to specifically minimize the wave action from passing vessels and to protect the banks.

10.54 **Cap Sainte-Michel** (45°43'N., 73°2'W.), the site of an oil-discharge mooring berth, stands on the E side of the river, about 5 miles SW of Vercheres. Ile Deslauriers lies about 0.2 mile W of Cap Sainte-Michel; the main shipping channel, in line bearing 201½°, runs between the two features. Several industrial plants are located in the vicinity of the cape.

The river current between Vercheres and Cap St.-Michel has an average rate of 1.9 to 2.4 knots.

A traffic reporting station is close N of Cap St.-Michel.

The town of Repentingy stands on the NW shore of the river, about 1.5 miles NW of Cap St.-Michel. A church with a conspicuous spire stands in the town. Multiple intake pipes are located close E of the main shipping channel of the river off Cap St.-Michel. Mariners are advised not anchor in this vicinity.

Varennes, a small village fronted by a pier, stands on the E shore of the river about 2 miles S of Cap St.-Michel. The pier is 25m long and has a depth of 1.8m. There is also a ramp. A church with two conspicuous spires stands in the village.

Ile Sainte-Therese (45°41'N., 73°28'W.) is the largest of a group of islands which lie in the river between Îles de Varennes and the N part of Ile de Montréal to the W. Overhead power cables, with a minimum vertical clearance of 53.3m, or 48m under severe ice conditions, span the St. Lawrence River between Ile de Montréal and the E shore near the S end of Ile Sainte-Therese.

In the main shipping channel, between Ile Sainte-Therese and Varennes, the river current runs in line with the channel at a rate of 2.5 knots.

Aspect.—Ile Sainte-Therese Lower Range Lights, in line bearing 213°, mark Chenal de Varennes and are situated on the E side of Ile Sainte-Therese. The lights are shown from skeleton towers; the front light is visible from all points of marine approach. Îles de Varennes Range Lights, in line bearing 186°, mark Traverse de Varennes and are situated on the N part of La Grande Ile (45°40'N, 73°27'W). The lights are shown from masts and are visible only when in alignment. Varennes (Traverse de l'Ile aux Vaches) Range Lights, in line bearing 032½°, mark Traverse de l'Ie-aux-Vaches. The front light is shown from a mast. A second light is also shown from the rear light structure and is visible from all points of marine approach. Ile Sainte-Therese Upper Range Lights, in line bearing 025°, mark Chenal de Pointeaux-Trembles. The front light, shown from a circular tower, is situated on the NE side of Île aux Vaches. The rear light is shown from a tower and situated on the SE side of Ile Sainte-Therese. The lights are visible when in alignment. A second light is also shown from each tower and is visible from all points of marine approach.

Caution.—Depths shallower than those charted may exist in the areas adjacent to the ship channel between Varennes and Longue-Pointe, about 6.5 miles further SSW.

Montreal Harbor (45°31'N., 73°33'W.)

World Port Index No. 2235

10.55 The Port of Montreal handles about 25 millions tons of cargo annually, comprised mainly of general cargo in containers, as well as grain, petroleum products, pulp, paper products, dry and liquid bulk cargo. The port provides two petroleum product refineries. In addition, man cruise ships make Montreal their port of call.

Montreal is the most populated urban center and the main economic area in the province of Quebec. The Quebec metropolis of Montreal is the city of one hundred church steeples and has a population of nearly 3.5 million. This cosmopolitan city is located on the SE side of Île de Montreal which makes up the W shore of the St. Lawrence River. The city hosts many Consulate Generals, trade delegations and international organizations. Founded in 1642, it is built on a series of natural terraces at the foot of and on the SE slopes of Mont Royal which is located 1.7 miles from the St. Lawrence River, rising to an elevation of 232m. The city of Longueuil is the most populated city on the E shore of the St. Lawrence River.

The Port of Montreal Harbor northern limit coincides with the upstream limit of the Port of Sorel.The south limit of the port is marked by Pont Victoria, where it crosses the St. Lawrence Seaway, and on the St. Lawrence River by a line extending from a position close upstream of Pont Victoria.

The Port of Montreal is also the junction of the St. Lawrence

main shipping channel and the St. Lawrence Seaway. On average, for 9 months of each year, vessels may proceed from Montreal to Duluth on the western extremity of Lake Superior; this is a distance of 1,167 miles through rivers, the Great Lakes, their locks and their connecting navigational channels. Small craft may proceed upbound as Canal de Lachine has re-opened. Therefore, the dangerous passage of Rapides de Lachine can be avoided. The area of the St. Lawrence River called Rapides de Lachine, a stretch of about 1.6 miles in length, is shallow, dangerous, strewn with reefs and rocky ledges, and a strong current exists.

Montréal has ample modern alongside berthing facilities for all classes of vessels. The necessity for tug use in maneuvering vessels in the port is dependent on the size of the vessel, the location of the berth, the strength of current expected in the vicinity of the berth and wind conditions. Except by the order of the Harbor Master or one of his or her representatives, the decision for using a tug or not is left to the master of the vessel, with advice from the pilot. The company Ocean Group operates a fleet of tugs ranging up to 4,400 HP. This company also provides diving, pumping, barges, transportation, icebreaking, salvage, and firefighting services. The company can be contacted by telephone a(514-849-5511).

The Montréal Port Authority operates a network of railways serving the wharves, the grain elevator, the sheds and industries involved in merchandise handling. This network connects with other railways which in turn connect to all marine terminals in Canada and the United States. Road transportation also link Montréal with other regions of Canada and the United States.

The St. Lawrence Seaway links intermediate Canadian and United States ports between Montréal and the upper part of the Great Lakes. Coastal shipping services are maintained from Montréal to the Gulf of St. Lawrence and to the Atlantic Provinces. A seasonal ferry service plies between Montreal, Quebec City, Matane, Chandler andf Cap-aux-Meules.

Montreal—Berth Information

Berth No.	Length	Depth	Maximum Vessel		Remarks
			LOA	Beam	
Mackay Wharf					
M1	91m	7.0m	—	—	Closed.
M2	157m	7.6m	148.9m	25.9m	Bunkers. Continuous berthing length of 847m.
M3	157m	7.6m	91.4m	15.2m	
M4	157m	7.6m	147.5m	22.4m	
M5	157m	7.6m	123.7m	17.7m	
M6	218m	4.6m	—	—	
Windmill Point (Farine Quay)					
05W	142m	8.2m	—	—	Closed. Bunkers. Continuous berthing length of 831m.
06W	152m	8.2m	—	—	
07W	164m	8.2m	—	—	
09W	183m	8.2m	—	—	
10W	180m	8.2m	—	—	
Bickerdike Pier					
B1	183m	7.6-8.8m	139.9m	23.0m	Ro-ro, breakbulk, and bunkers. Continuous berthing length of 567m.
B2	187m	8.8m	200m	25.9m	
B3	197m	8.8m	210m	29.6m	
B4	200m	8.8m	143m	21.5m	General cargo, heavy lift cargo ro-ro, and containers. Continuous berthing length of 943m.
B5	187m	8.8m	210m	29.6m	
B6	199m	8.8m	148.9m	25.9m	
B7	167m	8.8m	210m	29.6m	
B8	183m	8.8m	148.9m	25.9m	

Montreal—Berth Information					
Berth No.	Length	Depth	Maximum Vessel		Remarks
			LOA	Beam	
12N	152m	8.8-10.7m	148.9m	25.9m	General and heavy lift cargo. There is a depth of 10.7m if fenders of 4.6m are used, which are available upon request from port authorities.
Windmill Point (Farine Quay)					
5W	142m	8.2m	—	—	Closed. Continuous berthing length of 831m.
6W	152m	8.2m	—	—	
7W	164m	8.2m	—	—	
9W	183m	8.2m	—	—	
10W	180m	8.2m	—	—	
Canal Lachine					
11NE	91m	3.5m	—	—	Closed. Bunkers.
11NW	41m	3.5m	—	—	Closed. Bunkers.
12	250m	8.8m	—	—	Closed. Bunkers.
Quai Alexandra					
3	180m	10.2m	238m	32.2m	Cruise vessels and general cargo. Continuous berthing length of 360m.
5	180m	10.2m	251.9m	32.2m	
4	186m	9.7m	—	—	Closed. Cruise vessels and general cargo. Continuous berthing length of 372m.
6	186m	9.7m	222.5m	26m	
14E	107m	8.2m	51.8m	21.3m	Closed. Bunkers.
Quai des Convoyeurs					
15S	203m	9.7m	—	—	Closed. Bunkers.
15N	203m	9.7m	—	—	Closed. Bunkers.
Quai King-Edward					
7	193m	9.7m	—	—	Closed. Continuous berthing length of 386m.
9	193m	9.7m	—	—	
8	195m	9.7m	—	—	Closed. Continuous berthing length of 390m.
10	195m	9.7m	—	—	
16E	108m	8.2m	—	—	Closed.
Bassin de l'Horloge (Le Vieux-Port of Montréal)					
25	225m	9.1m	225.4m	31.0m	Breakbulk and bunkers. Continuous berthing length of 477m.
27	252m	9.1m	225.5m	23.7m	
28	245m	9.1m	226.1m	24.2m	Breakbulk and bunkers. Continuous berthing length of 497m.
29	252m	9.1m	226.1m	25.9m	
30	150m	9.1m	—	—	Closed.
31	154m	6.0m	148.8m	23.7m	Cruise and bunkers.
32	154m	9.1m	149.9m	23.7m	Container and breakbulk.
33	151m	9.1m	149.9m	23.5m	Breakbulk and bunkers.

Montreal—Berth Information					
Berth No.	Length	Depth	Maximum Vessel		Remarks
			LOA	Beam	
34	143m	9.1m	138m	21.0m	Cruise vessels. Continuous berthing length of 312m.
35	169m	9.1m	228.6m	32.2m	
36	161.2m	9.1m	225.5m	23.7m	Cruise vessels, bereakbulk, and containers. Continuous berthing length of 325m.
37	164m	9.1m	265.1m	32.2m	
Laurier Terminal					
39	183m	9.1m	225.4m	23.7m	Cruise vessels, passengers, ro-ro, and breakbulk. Continuous berthing length of 756m.
40	186m	9.4-10.7m	225.4m	23.7m	
41	200m	10.7m	148.3m	22.8m	
42	187m	10.7m	200m	30.0m	
43	266m	10.2m	225.5m	32.2m	Breakbulk.
Quai Tarte					
44S	255m	9.1m	—	—	Closed. Bunkers.
44E	95m	6.1m	—	—	Closed. Bunkers.
44N	263m	9.4m	200m	32.2m	Cement and bunkers.
45	162m	6.1m	—	—	Closed. Bunkers.
Pius IX Terminal (Quai Sutherland)					
46	151m	10.7m	—	—	Berth 46 is closed. Sugar and bulk cargo. Continuous berthing length of 302m.
46SE	151m	10.7m	190m	32.2m	
46E	69m	6.1m	—	—	Closed. Bunkers.
47	70m	—	—	—	Closed.
Viau Container Terminal (Hochelaga)					
48 (S Berth)	350m	11.3m	294.1m	32.2m	Containers and breakbulk. Continuous berthing length of 1,400m.
49 (S Berth)	350m	11.3m	294.1m	32.2m	
51 (Middle Berth)	350m	11.3m	303.9m	40.0m	
52 (N Berth)	350m	11.3m	243.3m	32.2m	
Viterra Glencore Grain Terminal					
54	198m	10.7m	229m	32.2m	Grain. Continuous berthing length of 396m.
55	198m	10.7m	190m	28.5m	
56	245m	8.2m	225.5m	23.7m	Grain.
Hochelaga Terminal					
56E	155m	8.2m	140m	23.5m	Breakbulk and bunkers.
56N	231m	5.5m	225.5m	31.0m	Breakbulk and bunkers. Continuous berthing length of 462m.
56S	231m	5.5m	226.1m	31.0m	

Montreal—Berth Information					
Berth No.	Length	Depth	Maximum Vessel		Remarks
			LOA	Beam	
Racine Terminal					
57S	165m	8.2m	—	—	Berth 57S is closed. Containers. Continuous berthing length of 1,087m.
57N	200m	9.8m	182.9m	32.2m	
58	163m	10.7m	184.2m	32.2m	
59	152m	10.7m	294.5m	37.3m	
60	152m	10.7m	281m	32.2m	
61	255m	10.7m	294.5m	37.3m	
62	245m	10.7m	198.6m	32.2m	Containers.
64	283m	9.1m	145.9m	28.3m	Containers.
Maisonneuve Terminal					
66	200m	10.7m	—	—	Closed. Containers and bunkers. Continuous berthing length of 618m.
67	223m	10.7m	299.9m	37.1m	
68	195m	10.7m	299.9m	40.0m	
70	200m	10.7m	294.1m	32.2m	Containers and bunkers. Continuous berthing length of 598m.
71	198m	10.7m	281m	32.2m	
Terminal Norcan Inc					
74	193m	10.7m	251.5m	43.8m	Aviation fuel. Berth length: 386m (continuous).
Cast Terminal					
72	200m	10.7m	249.8m	44.0m	Containers and bunkers.
73	193m	10.7m	80m	13.8m	Breakbulk and bunkers.
76	—	10.7m	243m	35.2m	Containers. Continuous berthing length of 249m.
77	—	10.7m	243m	35.2m	
78	163m	10.7m	210.4m	32.2m	General cargo and containers. Continuous berthing length of 489m.
79	163m	10.7m	294m	32.2m	
80	163m	10.7m	294m	37.3m	
Terminal Montréal-Est					
95	143m	9.1m	195.1m	32.2m	Petroleum products.
96	143m	9.1m	222.5m	22.8m	Petroleum products.
97	143m	9.1m	250m	44.0m	Petroleum products.
Logistec Arrimage Inc.					
98	250m	10.7m	250m	44.0m	General cargo.
99	250m	10.7m	250m	44.0m	General cargo.
100	190m	9.1m	248.9m	44.0m	General cargo.
Vopak					
94	238m	10.6m	250m	44.0m	Petroleum products. Maximum draft of 9.8m.

Montreal—Berth Information					
Berth No.	Length	Depth	Maximum Vessel		Remarks
			LOA	Beam	
Liquid Bulk Terminal					
102E/101	148m	10.7m	228.6m	40.0m	Petroleum products. Maximum draft of 10.07m. Berthing length of 175m (including dolphins).
Shell Montréal-East Terminal (MET)					
103N	164m	8.7m	144m	23.5m	Petroleum products.
103S	183m	10.7m	186.4m	40.0m	Petroleum products.
Sunoco					
104	33m	6.1m	—	—	Closed. Petroleum products. Maximum loa of 137m
Valero Terminal Marin de Mtl-Est					
105	—	10.7m	229.1m	32.2m	Petroleum products. Continuous berthing length of 223m.
106	—	10.7m	229.1m	32.2m	
Suncor Montréal Refinery					
109	—	10.7m	258m	40.1m	Petroleum products. Berth length: 345m (continuous).
110E	—	10.7m	251.5m	44.0m	
110W	164m	4.6m	—	—	Closed. Not in use.

Winds—Weather.—Over a period of 30 years, fog occurred an average of 18 days per year on the St. Lawrence River between Quebec and Montréal.

The prevailing winds are W and SW, though in the lower part of the river strong NE winds prevail from March to June.

Ice.—The port is open year round, but due to likely conditions from December to March, inclusive, it is recommended that vessels navigating to Montreal be strengthened for ice.

Although the port is open year round, night navigation may not be possible from mid-December to early April when the summer buoys are removed.

Tides—Currents.—The port of Montreal is free of any tidal effects.

Bickerdike Pier

Within the harbor limits of Montreal the current is constantly outgoing with a velocity in the main ship channel of 1.7 to 6.3 knots depending on the part of the harbor and the influencing circumstances. Generally, the current follows the reaches of the channel, but at turns or bends in the river it sweeps obliquely across the channel, in most instances, and should be guarded against.

Courant Sainte-Marie is the name given to the passage N between the N end of Ile Ste. Helene and Montréal, through which passes the bulk of the St. Lawrence River water. The ordinary velocity of the current in this section of the river is 4 to 6 knots.

The current through Ile aux Vaches Traverse sets N at a rate of about 2 knots across the channel and should be allowed for.

The current at the lower end of Longue Pointe Curve sets N at a rate of about 2 knots across the channel and should be allowed for. Dikes protecting the E end of a vehicular tunnel crossing the channel from Longue Pointe may affect both direction and speed of the current in this area.

Depths—Limitations.—The main shipping channel in the Port of Montréal has a depth of 11.3m over a width of 245m up to the Lighted Buoy M177. Upstream of this buoy to the Lighted Buoy ISH the channel is dredged to a depth of 11m. Upstream of this buoy to the Alexandra Wharf area the channel is dredged to a depth of 10.7m, with a least width of 168m under Pont Jacques-Cartier (bridge). The channel is well marked with buoys and range lights.

Between Buoy M163 and Buoy M173 there are restrictions in place for large commercial vessels. The meeting or passing of two deep draft vessels, requiring a depth of 10.7m or more, is forbidden at any time in this stretch of the river. If such a meeting is about to take place, the downbound vessel will have priority. A shoal with a depth of 10.6m lies east of Berth 32.

Canal de la Rive Sud, the downstream entrance of the St. Lawrence Seaway, has a least depth of 9m and a maximum usable width of 61m under Pont Jacques-Cartier. This channel branches off from the main shipping channel close NE of Île Sainte-Helene. Southeast of a line joining Lighted Buoy M187 and Lighted Buoy ISH, the maintained depth is only 9m. Due to submerged obstructions berthing is prohibited at Berth No. 11NE and Berth No. 11NW.

Montréal, being the largest commercially-important port in Canada, is equipped with modern wharves, piers, and basins to handle practically any cargo that can be transported by water. These include facilities for handling container and ro/ro vessels, ore and bulk cargo vessels, tankers, and passenger vessels, together with numerous berths for handling general cargo vessels.

The berths stand along the W side of the St. Lawrence River abreast of the city of Montréal and lie between Montréal East Wharf, 0.5 mile S of Pointe-aux-Trembles, and Windmill Point Basin, about 8.5 miles to the S.

There are more than 95 berths available, with a combined berthing length of about 21,304m, with depths of 3.7 to 10.7m alongside. Pier information is listed in the table titled **Montréal—Berth Limitations**.

The **Jacques-Cartier Bridge** (45°31'N., 73°33'W.) spans the St. Lawrence River abreast of Ile Sainte-Helene and extends from the city of Montreal to the E shore. The bridge has a vertical clearance of 52m over the dredged section alongside the wharves, and of 51m over the ship channel. The same bridge has a vertical clearance of 43m over the Canal de la Rive Sud, with a usable width of 61m.

Lights exhibited from under the main span indicate the limits of the channel under the bridge; lights on the bridge also indicate the centerline of the channel.

The Victoria Bridge, a combined road and railway bridge, spans the St. Lawrence River from Montreal to the town of Saint-Lambert. Both bridges have vertical lift sections with a minimum vertical clearance of 37m and a usable horizontal clearance of 24m. Overhead power cables, with a minimum vertical clearance of 14m on the W side and 25m on the E side, span the river close N of the Victoria Bridge. This same power line crosses the Canal de la Rive Sud, with a vertical clearance of 64m.

Another power transmission line crosses the river 0.3 mile S of the Victoria Bridge, with a vertical clearance over the Canal de la Rive Sud of 46m.

Another overhead power cable crosses the main ship channel from Longue-Pointe to Ile Charrom. The cable has a clearance of 53.6m over the main channel.

A dredged area of 10.7m exists at Berth 12N. Vessels may anchor with permission of the port authority; fenders will be provided if required.

Aspect.—Tetreaultville range lights, in line bearing 205°, are the reciprocal of Île Sainte-Therese Upper Range Lghts. The front light is shown from a white tower located on Île de Montréal downstream of Louis-Hippolyte-La Fontaine tunnel-bridge. The front and rear lights are visible only when in alignment. Traverse de Longue-Pointe Range Lights, in line bearing 170°, mark Traverse de Longue-Pointe and are located on the SE side of the river upstream of the Louis-Hippolyte-La Fontaine tunnel-bridge. The range lights are shown from circular towers. Course de Longue-Pointe range lights, in line bearing 022½°, mark Route de Maisonneuve-Longue-Pointe (Course Maisonneuve Longue-Pointe). The lights are located on the drying flats SW of Îles de Boucherville close downstream of the Louis-Hippolyte-La Fontaine tunnel-bridge. The green lights shown under Pont Jacques-Cartier fixed bridge indicate the center line of the main shipping channel in an upstream and downstream direction. Fixed white lights, visible upstream and downstream, shown from the under side of the main span of the bridge define the limits of the channel under the bridge.

The towers marked by red lights supporting the overhead power cables crossing the main shipping channel between Longue-Pointe and Île Charron. The church spire of Longueuil. A tower, 87m in height and marked by red lights, located on the north part of Île Sainte-Hélène.

The Sailors Memorial Clock Tower is situated on the N end of Victoria Pier (Quai Jacques Cartier), about 0.6 mile upstream of the Jacques-Cartier Bridge.

Cite du Havre (45°30'N., 73°32'W.), formerly MacKay Pier, extends N almost 1.3 miles from the Montréal end of the Victoria Bridge. Pont de la Concorde joins the lower end of Cite du Havre to Ile Sainte Helene. A breakwater extends W from Cite-du-Have opposite Quai Alexandria in Courant Sainte-Marie.

Pilotage.—Pilotage is compulsory. Upbound vessels are boarded by pilots at Les Escoumins Pilot Station for the passage up to Montréal. Pilots are exchanged in Québec City and Trois-Rivières. The river pilots dock and undock vessels upon arrival and departure to/from downstream. However, any subsequent move within the Port of Montréal limits, that is between Île Sainte-Thérèse and Écluse Saint-Lambert (Saint-Lambert Lock) inclusively, will be performed by harbor pilots. They will also perform docking of vessels coming from the Saint-Lambert Lock.

For departure from the Port of Montréal, the ship's master shall give a first notice 12 hours before the estimated time of departure (ETD) and a final notice confirming or correcting the ETD at least 4 hours before the ETD. The master of a ship that is to make a move within the Port of Montréal shall give notice of such move 3 hours before the move. This information must be communicated to the Pilot Dispatch Centre either by telephone (1-800-361-0747), e-mail (pilote.mtl@apl.gc.ca), or to an MCTS Center.

Pilot stations for westbound vessels to Montréal are the same as for inbound vessels forQuebec. Saint Lawrence River pilots ensure the berthage and departure of vessels; Montréal Harbor pilots provide all subsequent harbor movements within the limits of the Port of Montreal. Due to the above-mentioned pilotage system, pilot stations for westbound vessels to Montreal are the same as for vessels inbound to Quebec. The master of a vessel leaving the port must send a first departure notice to the Laurentian Pilotage Authority 12 hours before the estimated time of departure (ETD) and a final notice 4 hours prior to departure, either confirming or amending the ETD.

Compulsory winter double pilotage will now apply from January 1st to March 15th inclusively. During the pre- and post-winter period, two pilots may be dispatched depending on prevailing conditions. However, pilotage charges will be for one pilot only. Vessels subject to year-round double pilotage according to the provisions of Section 35 of the Laurentian Pi-

lotage Authority Regulations will remain unchanged.

Regulations.—Montréal is a customs port of entry and a quarantine station. In accordance with the International Health Regulations, Deratting Certificates, and Deratting Exemption Certificates can be issued in Montréal.The fumigation of vessels is within the jurisdiction of the Department of Agriculture and Agri-Food. The Canadian Food Inspection Agency will inspect a vessel if the transported agricultural product requires an inspection. The inspection shall take place before loading and if an anti-parasite treatment is necessary, it will be done under the supervision of the Agency. Government controls require the inspection of foreign vessels entering Canadian ports in order to verify if they comply with the provisions contained in the main international maritime conventions. This task is performed by Transport Canada. Canada ratified the Paris Memorandum of Understanding signed by 18 countries. Under this protocol, at least 25% of foreign vessels entering Canadian ports must be inspected. Judicious targeting has made it possible to inspect only those vessels most likely not to conform to the standards.

In the event of an incident occurring in the St. Lawrence Seaway (for example damage to a lock, shortage of pilots, etc.), the MCTS Centre prepares and maintains an order of transit roster for vessels proceeding into the St. Lawrence Seaway. Vessels shall establish their turn by calling *"Quebec Traffic"* on VHF channel 10 (156.5 MHz), and/or by phone at 418-648-7375. In this case, and in order to comply with the order of transit roster, the MCTS Centre will notify the pilotage office of pilot requirement. In order not to miss their turn, vessels, whether berthed or anchored, are required to maintain radio watch on the sector frequency they are in.

Vessels transiting the Seaway for the first time during the season shall be inspected by Canadian and American St. Lawrence Seaway agents, either during their stay at anchor off Pointe-aux-Trembles or at a berth designated by the Harbour Master. Their winches, fenders, mooring facilities and other equipment required by the regulations will be inspected. Foreign vessels transiting for the first time during the season shall also be inspected by the Canadian Coast Guard to verify the radio certificate necessary for the Great Lakes region.

Vessels intending to transit the St. Lawrence Seaway must be in possession of the Seaway Handbook which provides the necessary information such as the Seaway traffic control system. Pleasure craft using the Seaway shall obtain the publication Pleasure Craft Guide. These publications are available on the following web site (http://www.grandslacsvoiemaritime.com) or on request from The St. Lawrence Seaway Management Corporation, 202 Pitt, Cornwall, Ontario, K6J 3P7; telephone: 613-932-5170.

Vessels at berth or at anchor, maneuvering or otherwise underway in the Port of Montreal, are subject to the Port Authorities Operations Regulations under the Canada Marine Act. A copy of these regulations may be obtained from the Montréal Port Authority.

No commercial vessel bound for the Port of Montreal, including Contrecoeur and Tracy wharves, or anchoring within the Port of Montréal limits, can proceed upstream of Lanoraie anchorage area without the permission of the Harbormaster's Office or one of its authorized representative. The master of a vessel or its agent is required to inform the Harbormaster's Office of his or her intentions 24 hours prior to entry into the Port of Montréal. The Harbormaster's Office can be reached any time by telephone (514-283-7022). The harbormaster has wide powers over vessels in the port and may order vessels to move, to use tugs, to berth or anchor in locations which he/she designates. Certain restrictions on berthage and anchorage are set forth.

Vessels are regulated with respect to cargo-handling operations including the equipment and lighting employed in these operations. These regulations also include instructions for signaling, action to be taken in the event of accidents, cargo or gear lost overboard and safety requirements.

The Port Authorities Operations Regulations require that no vessel shall move in a port at a speed that may endanger life or property. Every vessel proceeding downstream in the St. Lawrence River main shipping channel shall have the right of way over any vessel entering or leaving the Seaway. Two vessels cannot meet in Courant Sainte-Marie; the upbound vessel must stop and allow the downbound vessel to pass. Every vessel about to leave its berth, wharf or pier shall, before leaving, sound one prolonged blast on its whistle or siren. Every vessel backing out of any wharf, basin or dock shall sound three short successive blasts on its whistle or siren. Mariners shall proceed with caution and at a safe speed before and in front of the Berth 46SE, Berths 73 to 80, Berths 94 to 110, and Berth 115 (seasonal) as to minimize the interaction with the ship docked. See the document Practices and Procedures-May 2016 available on the Montréal Port Authority web site.

The speed limit over the bottom is 4 knots for any vessel or small craft navigating in Vickers' Basin. The basin has a SW orientation from a line drawn between the north ends of Berths 57N and 56N. The speed limit over the bottom for any vessel or small craft navigating upstream of a line drawn between the northern extremity of Berth 19 and Pointe du Havre is 8 knots. In the Port of Montréal, the maximum speed for small craft operators, at any time, is 5.4 knots (10 km/h) within 50 meters of the shore of the Island of Montréal. Outside the area referred above, the maximum speed between 9:00 pm and 7:00 am, in any water body around the Island of Montreal, is 13.5 knots (25 km/h).

When a marine oil spill occurs, mariners will immediately inform the Canadian Coast Guard via the MCTS Centre through VHF channel 10 or 16. Various companies in Montreal are equipped to carry out recovery operations for spilled oil.

The Eastern Canada Response Corporation (ECRC) is a private company, certified by the Canadian Coast Guard, which can provide marine oil spill response services. It has equipment at various strategic locations along the St. Lawrence River including the Port of Montreal. The company can be reached by telephone (418-692-8989).

The company Urgence Marine provides the following services: oil clean up and recovery, pumping, boom installation, water supply, barges and garbage removal. In addition, the company provides linesmen services for docking vessels that are not governed by the long-shoring collective agreement adopted by the Maritime Employers Association. The company can be reached by telephone (514-640-3138).

Contact Information.—A Canadian Coast Guard seasonal Search and Rescue station operating from Longueuil provides services in the area. Requests for assistance can be addressed,

at any time, to the Marine Rescue Sub-Centre (MRSC Québec) via a Coast Guard Radio Station through VHF Channel 16 (156.8 MHz), Digital Selective Calling (DSC), or by telephone 1-800-463-4393. Owners of certain cellular telephone models may also dial *16 which will put them in direct contact with a MCTS Centre. It should be noted that it is not possible for the Canadian Coast Guard to trace the origin of calls for those using their cellular telephone and that certain areas do not have cellular coverage.

Montreal—Contact Information	
Port Authority	
Telephone	514-283-7011
Facsimile	514-283-0829
E-mail	info@port-montreal.com
Web site	http://www.port-montreal.com
Harbormaster	
Telephone	514-283-7022
Facsimile	514-496-1657
E-mail	captainerie@port-montreal.com

Anchorage.—No vessel shall anchor within the Port of Montréal limits without first obtaining the permission of the Harbour Master. Anchorage berths will be allocated by the Harbor Master or his or her duly authorized representative through the MCTS Centre. No vessel, while under way, shall drag its anchor except in case of an emergency.

Lonaire Anchorage is located between Sorel and Tracy; this anchorage is intended for vessels awaiting orders and for vessels waiting to dock at the Contrecoeur Terminal. This anchorage can accommodate more than a dozen vessels. The depth is 13.0m. It has no time limit and is the only anchorage available to vessels anchoring more than 120 hours; restrictions apply.

There are several other anchorage areas in addition to the previously mentioned at Lanoraie:

1. At Pointe-aux-Trembles—Four anchorage berths. The maximum time limit at this anchorage is 120 hours for all vessels except tankers, for whom the time frame is limited to 72 hours; some restrictions apply.
2. At Montréal-Est—Located opposite to Berths 94 to 98. Anchorage may be used by one vessel at a time, less than loa 150m, waiting for bunkering, or for orders. The maximum time limit at this anchorage is 120 hours for all vessels except tankers, for whom the time frame is limited to 48 hours. Vessels should preferably not be in ballast when using this anchorage.
3. Longueuil Anchorage (Vickers)—Opposite to the grain elevator No. 4. This anchorage is normally used by vessels awaiting a berth at the Viterra Glencore Grain Terminal berths (54-56), or their turn to enter the St. Lawrence Seaway. The maximum time limit at this anchorage is 72 hours for all vessels except tankers, for whom the time frame is limited to 48 hours, and depends on the vessels characteristics and actual predicted weather.

These anchorage areas are shown on the chart.

There is a prohibited anchorage area due to submarine pipelines located upstream of Pointe-aux-Trembles. The position of this area is shown on the chart. No vessel shall anchor in an area extending 61m on each side of the center line of the Louis-Hippolyte-La Fontaine tunnel-bridge due to the possibility of causing damage. Many submarine cables extend across the St. Lawrence River and the various channels. Mariners should not anchor in the vicinity of these cables. In addition, several outfall and intake pipes extend from both shores. Refer to the chart for their position.

Anchor Berths		
Anchorage Positions	**Position**	**Depth**
Pointe-aux-Trembles	45°38.27'N, 73°28.84'W	11.0-11.3m
Montréal- Est	45°36.81'N, 73°29.82'W	9.14m
Longueuil (Vickers)	45°33.44'N, 73°30.77'W	9.1m

Directions.—Montréal is approached and entered from NE through the main Saint Lawrence ship channel or through the small craft channel depending on the size of the vessel. There are no locks between the mouth of the Saint Lawrence and Montréal. The channel, open all year round, is dredged to a depth of 11.3m at chart datum.

Caution.—Shallower depths than charted may exist outside the commercial channel, the small craft channel, and the maintained area.

A floating breakwater has been positioned S of Point Jacques Cartier Bridge and SE of Sainte Helene Island and can best be seen on the chart.

An overhead power cable with a vertical clearance of 52m spans the main shipping channel between Longue-Pointe and Île Charron. Other overhead power cables, with vertical clearances of 64m over Canal de la Rive Sud, span close downstream of Pont Victoria. Louis-Hippolyte-La Fontaine tunnel-bridge allows the Trans-Canada Highway to cross the river by means of a tunnel which passes under the main shipping channel. A system of piers protects the east end of this tunnel which is on Île Charron. Pont Jacques-Cartier, a fixed highway bridge, crosses the river abeam of Île Sainte-Hélène. It has a vertical clearance of 49m over the 9.1m dredged section alongside the wharves and 51m over the main shipping channel. This same bridge has a vertical clearance of 43m over Canal de la Rive Sud. Two seaplane landing areas (day use only) are located on either side of Pont Jacques-Cartier, on the west side of Île Sainte-Hélène, off the main shipping channel. Pont de la Concorde, a fixed highway bridge, joins the downstream end of the residential sector of Cité-du-Havre to Île Sainte-Hélène and extends to Île Notre-Dame by means of Pont des îles fixed highway bridge. The Cité-du-Havre (formerly Mackay Pier), built to protect the harbor piers and wharves upstream of Montréal, extends 1.2 miles north of the SW end of Pont Victoria. Several fixed bridges cross Chenal Le Moyne, east of Île Sainte-Hélène. The bridges in this shallow channel have a vertical clearance of 8.1m. Pont Victoria, a combined highway and railway bridge, spans the St. Lawrence River from Montréal to the

The St. Lawrence Seaway—Iroquois Lock

city of Saint-Lambert. The main span crosses at the downstream end of Saint-Lambert Lock, and a diversionary road and rail bridge span the upstream end of the lock. Both bridges have vertical lift sections with a vertical clearance of 37m.

Mariners are requested to proceed with caution when maneuvering near wharves equipped with gantry cranes. In fact, any part of a vessel extending outward the wharf could hit the cranes whose bases are close to the dock wall. In addition, certain parts of the gantry crane overhang the dock wall, even in their raised position. Therefore, the available vertical clearance is restricted under these structures and mariners must be watchful of the equipment and structures overhanging their vessel, such as derrick cranes and antennae.

Mariners must comply with a safety zone of 25m in the vicinity of Berths 103S and 103N whether or not there is a vessel alongside the berths. No vessel or small craft can enter this zone without the permission of the Harbour Master's Office. Moreover, anchoring is forbidden in the basin situated between Berths 56S and 57S.

Shallow water extends offshore and mariners are requested to proceed with caution when navigating in the approaches of Port Sainte-Hélène.

The St. Lawrence Seaway—General Information

10.56 The St. Lawrence Seaway System provides a navigable channel for vessels between Montreal Harbor and the head of the Great Lakes. The E section under the jurisdiction of the Saint Lawrence Seaway Authority of Canada leads from Montreal Harbor (South Shore Canal entrance) to the Cornwall-Massena International Bridge (about 1.5 miles E of Snell Lock). The navigable distance from the entrance of the Seaway to the downstream gate of Snell Lock is 72 miles (83 statute miles).

The continuation of the St. Lawrence Seaway W to the head of the Great Lakes is described in the United States Coast Pilot, Volume 6, published by the National Ocean Service. The St. Lawrence Seaway was opened to commercial traffic on April 25, 1959.

The distances shown on the charts and on the Seaway mileage signs, measured from the origin of Seaway mileage in Montréal Harbor, are in nautical miles.

That part of the Seaway described in this sector is normally open to navigation on April 1 and closes on December 15; however, the actual dates will depend on weather and ice conditions.

The Seaway Handbook contains the St. Lawrence Seaway Regulations and certain other information relating to the use of the Seaway. A copy of this publication must be carried on every vessel in transit through the Seaway. It may be purchased from the Information Canada book stores. The publication can also be ordered through the St. Lawrence Seaway Management Corporation or downloaded from its web site.

Ice.—The Upper St. Lawrence Seaway usually freezes over from shore to shore for varying periods during the late winter months, except in the rapids section. The opening dates of navigation of the various portions of the Seaway system will be published in Notices to Mariners. In order to keep shippers using the Seaway informed of ice conditions which may affect the closing date, bulletins are published periodically during the of November by the St. Lawrence Seaway Management Corporation.

Tides—Currents.—Between Montréal and Lake Ontario the rate of the current varies directly with the width of the river channel. In the canals the rate is generally slight, with the exception of the Canal de Beauharnois, where the rate, although moderate, will vary with the volume of water used at the power dam. In lakes and open reaches, currents vary between 0.25

and 1 knot, and in the narrower sections of the river between 2 and 3.5 knots. The swiftest currents are to be found in the channel between Cornwall Island and the United States shore, where a current of up to 6 knots may be encountered. The currents, in general, set fair with the channel. Depending of the number and position of sluice gates open on the Iroquois Control Dam, the currents in the E approaches to the Iroquois Lock may, under certain conditions, set across the channel.

Depths—Limitations.—In general, the Seaway accommodates vessels up to 225.5m in length and 23.8m in beam. Vessels with an overall length greater than 222.5m must also meet the following requirements:

1. Vessels must have a rounded stem bar.
2. Vessels must be equipped with adequately powered self-tensioning and rendering winches and fairleads at an approved location.
3. Prior review and approval of ship plans will be necessary before actual construction or modifications are undertaken.
4. Adding to the overall length of a vessel will somewhat decrease existing margins with respect to distances to and from ship arresters. Locking of these larger vessels will require special operating procedures. These will increase the lockage time by 2 to 3 minutes.
5. Mariners must comply with special mooring instructions and procedures when proceeding through the locks.

The Seaway entities will allow vessels with an overall length of 225.5m to transit Seaway locks, subject to the above-noted requirements.

Vessels with masts that extend more than 35.5m above the water level will not be permitted to transit the Seaway. Vessels in excess of the maximum permissible draft of 7.92m will be delayed and only permitted to transit when the overdraft has been corrected.

Deep-draft vessels in transit between Montréal and Lake Superior pass through the following canals: South Shore, Beauharnois Canal, Wiley-Dondero Canal, Welland Ship Canal, and the Sault Ste. Marie Canal. There are 16 locks in the passage, overcoming a total difference in elevation of 177.7m. In the canal sections where it is flanked by two embankments there is a minimum width of 55m between bridge abutments and 68m in canals flanked by two embankments, to 182m in improved channels.

Between Montréal and Lake Ontario all Seaway locks are 233.5m in length and 24.4m in width. There is a minimum depth of 9.1m over the sills. The minimum vertical clearance of Seaway bridges in this section is 36.6m

Order of Transit.—The Montréal Marine Traffic Regulating Center prepares and maintains an order of transit roster for vessels proceeding into the St. Lawrence Seaway. Vessels shall establish their turn by calling "Channel Montréal" on VHF channel 10 when in all respects ready for a transit stating their name, length, present location, and draft forward and aft. The regulating center will notify the ship in sufficient time to make ready to proceed. In order not to miss their turn, vessels are required to maintain a radio guard on the sector frequency they are in, whether berthed or anchored.

Vessels intending to transit the St. Lawrence Seaway without calling at Montréal are examined by Customs and National Health and Welfare officials at the Longue Pointe anchorage. Inspection by officials of the Department of Agriculture will normally take place at the port of destination.

Vessels intending to transit the St. Lawrence Seaway for the first time without calling at Montréal may have their winches, fenders, mooring facilities, and other equipment required by the regulations inspected by Seaway Authority officials while at anchor off Longue Pointe.

Bascule Bridges.—In the Seaway, the upper ends of bascule bridges in the fully opened position encroach to varying degrees over the vessel channels beyond the vertical face of the lock walls. The minimum vertical clearance between the water surface and the under side of these bridges in the opened position is 25m at the face of the lock wall. Masters of vessels with high stern counters, superstructures, and flared bows that can overhang the top of the lock wall when the vessel is not parallel to the wall must exercise extreme care in navigating through these bridge draws.

Pilotage.—Pilotage is compulsory for vessels in transit through the St. Lawrence Seaway from Montréal to Lake Ontario. Upbound and downbound vessels passing through Montréal Harbor normally change pilots at St.-Lambert Lock. Pilots are also changed at Snell Lock. Downbound vessels from Lake Ontario will be boarded by pilots off Alexandria Point.

Contact Information.—See the table titled **St. Lawrence Seaway Management Corporation**.

St. Lawrence Seaway Management Corporation	
Telephone	613-932-5170
Facsimile	613-932-7268
E-mail	marketing@seaway.ca
	publications@seaway.com
Web site	http://www.greatlakes-seaway.com
	http://www.grandslacs-voiemaritime.com

Regulations.—The "International Regulations for Preventing Collisions at Sea" are modified in waters under Canadian jurisdiction by various special rules. These rules are included in the Canadian "Collision Regulations".

In the Seaway, specific speed restrictions are in force for all vessels in excess of 12m in overall length. Speed limits are applicable to both normal and HW levels in the St. Lawrence Seaway Regulations. The speed limits given in this sector of Sailing Directions are for normal water levels. Mariners are cautioned that a lower speed limit may be in effect depending upon the existing water level.

The St. Lawrence Seaway—Montréal Harbor to Canal de Beauharnois

10.57 The Canal de la Rive Sud, 18.5 statute miles long, is entered at the S end of Montréal Harbor and follows the E and S shore of the St. Lawrence River, bypassing the Rapides de Lachine, to enter Lac Saint-Louis about 2 miles W of Caughnawaga. The canal has a least width of 68m except under the Jacques Cartier Bridge, where the is a minimum usable width of 61m. The canal contains the St.-Lambert Lock and the Cote Ste.-Catherine Lock, which together overcome the differ-

ence in elevation between Montréal Harbor and Lac Saint-Louis. The canal embankments are illuminated at night to assist vessels navigating the canal.

There is a speed limit of 6 knots over the bottom in Canal de la Rive Sud.

St.-Lambert Lock crosses the canal in the vicinity of Victoria Bridge. The downstream approach wall on the W side of the canal has a berthing length of 653m. The canal is 152.4m wide abreast this approach wall. The upstream approach wall has a berthing length of 458m.

Both spans of the Victoria Bridge have a minimum vertical clearance of 36.6m. An overhead power cable, with a minimum clearance of 36.6m, crosses the canal close upstream of the St.-Lambert Lock.

It has been reported that water discharged from the regulating channel, E of St.-Lambert Lock, sets NW on to the lower approach wall and a reverse flow sets along the wall toward the lower lock entrance in a S direction.

From St.-Lambert Lock to Cote Ste.-Catherine Lock, about 8 statute miles distant, the canal has a width of 91m. The W and N bank is illuminated for night navigation.

10.58 The **Champlain Bridge** (45°28'N., 73°30'W.) spans the canal about 2 statute miles above St.-Lambert Lock and has a vertical clearance of 36.6m.

An ice control structure, consisting of a number of piers joined by a service bridge from which an ice boom is laid, extends from Ile des Soeurs to the Seaway embankment, close upstream from the Champlain Bridge.

Turning Basin No. 1 lies about 2 statute miles S of the Champlain Bridge; Turning Basin No. 2 lies about 3 statute miles farther upstream. Both basins have a dredged depth of 8.2m.

Côte Sainte-Catherine Lock (45°24'N., 73°34'W.) stands close W of Turning Basin No. 2. The lower approach wall has a berthing length of 319m and is situated on the N side of the canal. The upper approach wall has a berthing length of 318m. The canal has been widened abreast both approach walls to a width of 137m.

Côte Sainte-Catherine—Berthing Information		
Berth	**Length**	**Remarks**
East Berth	604m	Dry bulk, containers, and general cargo.
West Berth	590m	Containers. Maximum draft of 10.5m (HW).

Above Côte Sainte-Catherine Lock the canal extends in a general W direction for 8 statute miles to Lac Saint-Louis. This section of the canal has a least width of 76m. From Saint-Lambert Lock to Côte Sainte-Catherine Lock, a distance of 7 miles, the canal has a least width of 91m. The canal is flanked to the west and north by an illuminated embankment, and to the east and south by short sections of rubble embankment and islets.

Côte Sainte-Catherine Lock has a lift of 10 to 11m. The lower approach wall has a berthing length of 319m; it is on the N side of the canal. Above the lock, the upper approach wall, also on the N side, has a berthing length of 318m. Abreast of the approach walls the canal has been widened to 137m. A bascule bridge spans the lock at its upstream end.

The Port de Côte Sainte-Catherine wharf lies along the S side of the canal 0.8 mile west of the lock; it is 1,219m long with a depth of 8.2m. There are bulk storage facilities at the wharf; many warehouses and factories are a short distance inland.

Caution.—An overhead power cable with a clearance of 45m crosses the canal 0.2 mile upstream of Saint-Lambert Lock. Pont Champlain, a highway bridge 1.6 miles upstream of Saint-Lambert Lock, spans the St. Lawrence as a viaduct from Montréal to Île des Soeurs and becomes a high-level bridge over the Canal de la Rive Sud to the east shore. This bridge has a vertical clearance of 37m. An ice control structure, consisting of a number of piers joined by a service bridge, extends from Île des Soeurs to the Seaway embankment, close upstream of Pont Champlain.

Three sets of overhead cables, with a vertical clearance of 36.6m, cross the canal between 2.25 and 2.5 miles above Côte Sainte-Catherine Lock. Several submerged cables and pipelines cross the canal between Sainte-Lambert and Côte Sainte-Catherine Locks. A hydroelectric power plant is upstream of the lock, south of the canal. Booms, marked by yellow lights, surround the area upstream of the power plant; berthing is prohibited. Pleasure craft are advised to keep well clear of the power plant.

A shoal area on the N side of the canal, starting 0.5 mile W of the overhead cables, is marked by buoys and lighted buoys. Large vessels should avoid meeting in this buoyed section.

10.59 Kahnawake (Caughnawaga) (45°25'N., 73°41'W.), a village on Kahnawake Indian Reserve 14, stands adjacent to the canal at the lower end of Lac Saint Louis and abreast the head of the Rapides de Lachine. Canal de la Rive Sude enters Lac Saint-Louis 1.5 miles W of Kahnawake.

Pont Honoré-Mercier, a high-level highway bridge with a clearance of 39m, and two railway bridges cross the canal and the river at Kahnawake. Each railway bridge has a lift-bridge section across the canal, with a vertical clearance of 14m when lowered and 39m when raised. White lights are shown from the piers of the bridges on each side of the channel.

Île Tekakwitha lies S of the canal and W of Kahnawake.

Tekakwitha Island Light is shown from a mast on the W end of the island. Kahnawake Dyke Light is shown from a mast on the W end of the N embankment of Canal de la Rive Sud, at the entrance to Lac Saint-Louis.

Caution.—A vessel's approach to the lift bridges is governed by light signals controlled by the bridge operator, or if necessary, by VHF radio on Channel 14. Whistle signs are installed, for upbound vessels, 0.7 mile downstream of the bridges. For downbound vessels, the whistle sign is 0.8 mile upstream of the bridges. Unless a vessel's approach to the lift bridges has been acknowledged by flashing amber lights on the triangular, yellow and black checkerboard caution sign, the master shall notify the bridge operator by VHF radio when the vessel comes abreast of the whistle sign. For more details, refer to the General Transit Information section of Vessel Transit and Equipment Requirements in the Seaway Handbook.

Emergency berthing facilities are provided on the N side of the canal, 0.2 mile above the railway bridge. Pontoons moored

alongside ensure a depth of 8.2m in the berth, which is 143m long.

10.60 Lac Saint-Louis (45°24'N., 73°49'W.) is an expansion of the St. Lawrence River at its junction with the W mouth of the Ottawa River. Île Perrot stands in the W part of the lake and is bordered by narrow, shallow passages on the N and S sides which lead into that part of the Ottawa River known as Lac des Deux Montagnes.

The Seaway channel between the upper end of Canal de la Rive Sud and Beauharnois Lock, about 11.5 statute miles distant, is 182m wide, with a least depth 8.6m.

A traffic reporting station for upbound vessels only stands on Pointe du Moulin at the E end of Île Perrot.

Île Saint-Nicolas, a privately owned island, lies on the N side of the channel 1 mile W of Kahnawake Dyke light.

Tides—Currents.—A current sets fair with the channel through the seaway channel in Lac Saint-Louis at a rate of 1 to 1.5 knots, except for the section between Buoy A18, NW of Î1e Saint-Bernard, and the W end of Canal de la Rive Sud embankment. In this section, the current sets NE across the channel and increases to about 2 knots because of the constriction of the lake at this point and the extensive shallows in the area of Île Saint-Nicolas.

Aspect.—On the SE shore of Lac Saint-Louis, the Rivière Chateauguay empties into the lake in the vicinity of **Île Saint-Bernard** (45°23'N., 73°46'W.). A small conspicuous green hill, marked by a cross, stands on the SW end of the island. A chimney, situated close SE of this hill, is conspicuous from the S and SW.

The city of Beauharnois stands 7 statute miles SW of Île Saint-Bernard and the S shore of the lake. The shore between these two places is bordered by an extensive group of low islands known as the Iles de la Paix. A large dam stands between the city of Beauharnois and Beauharnois Lock. The village of Melocheville stands close W of the lock.

The city of Lachine stands on the N shore of Lac Saint-Louis at the entrance to Canal de Lachine, now closed to navigation. From the lake, the dome of the old convent and the two-spired church are conspicuous. A channel, with a least depth of 4.3m, leads from the Seaway channel to the wharf at Lachine. A second buoyed channel leads NW from close S of Île Dorval and then along the shore of Ile de Montréal to the Ottawa River.

Regulations.—In Lac Saint-Louis, the maximum speed for small craft operators, at any time, is 5.4 knots within 50 meters of the shore of the Island of Montréal, except at René-Lévesque Park, at the entrance to Canal de Lachine, where the distance extends to 300 meters from shore. Outside the area referred above, the maximum speed between 2100 and 0700, in any water body around the Island of Montréal, is 13.5 knots.

Anchorage.—Anchorage can be taken on both sides of the channel close N of Beauharnois Lock by vessels awaiting transit through the lock. Depths in these areas range from 11 to 27.4m. Anchorage is prohibited in the channel leading to the lock.

Caution.—Owing to changing conditions, buoys in Lac Saint-Louis may be moved to mark the best small craft channels. Also, owing to the background illumination of the communities situated on Ile de Montréal, aids to navigation may be difficult to identify at night. Mainers are advised to exercise caution when entering small craft channels.

10.61 Dorval (45°26'N., 73°45'W.), a small village, stands close W of Lachine. A church spire in the village is conspicuous from the lake.

Pointe-Claire (45°26'N., 73°49'W.), the site of a small city, stands W of Dorval and is fronted by a shallow pier.

Beaconsfield, a similar city, stands W of Pointe-Claire and is fronted by a shallow basin enclosed by breakwaters.

Île Dowker (45°24'N., 73°54'W.) lies SW of Beaconsfield and N of Île Perrot. Lynch Channel, the main passage to the Ottawa River, passes N of this island.

The town of Ste.-Anne-de-Bellevue stands at the SW end of Île de Montréal at the entrance to the Ottawa River. Two bridges span the passage between Île de Montréal and Ile Perrot. The vertical clearance is 13m at the lock and 9.4m at Rapides de Sainte-Anne. Saint-Anne Lock leads from Lac Saint-Louis into Lac Des Deux Montagnes, close along the SW end of Île de Montréal.

The St. Lawrence Seaway—Canal de Beauharnois to Cornwall

10.62 Canal de Beauharnois (45°19'N., 73°55'W.), 12.5 miles long, is the sole means of transit from Lac Saint-Louis to Lac Saint-François. The channel has a least depth of 8.2m, with a width of 182m, except in the short channel between Upper Beauharnois Lock and Lower Beauharnois Lock, which has a least width of 91m. The two Beauharnois locks are at the Lac Saint-Louis end of the canal; these locks together handle the 24m difference in elevation between the two lakes.

Lower Beauharnois Lock, west of the Beauharnois power dam, has a lift of 12 to 13m. The downstream approach wall, on the east side of the channel, has a berthing length of 379m. A tunnel under the lock carries traffic between Beauharnois and Melocheville. The upper approach wall is on the east side of the channel above the lock. The lock and approach walls are illuminated at night.

The channel between the Lower and Upper Beauharnois Locks is 0.5 mile long, with a least width of 91m. Between the two locks there are four sets of overhead power lines, with a vertical clearance of 45m or of 43m under vigorous icing conditions. The lock approach walls are on the east side, at both ends of the channel. Between the approach walls there is a berthing face, 503m long, parallel to the channel.

Upper Beauharnois Lock has a lift of 11 to 12m. Above Upper Beauharnois Lock, the approach wall has a berthing length of 575m, also on the east side of the channel. A rock dyke, 457m long, extends southwards from the end of this approach wall. There is a small-craft berthing wall on the west side of the channel above the Upper Beauharnois Lock. A least depth of 7.6m was found off this wall in 1998. Pont Penn Central, a railway swing bridge, crosses at the upper end of Upper Beauharnois Lock. A highway bridge spans the canal upstream of the railway bridge. Upper Beauharnois South Wall Approach light is shown from a mast on the south end of the above-mentioned rock dyke.

There is a speed limit of 9 knots upbound and 10.5 knots downbound, over the bottom in Canal de Beauharnois, from the upper entrance to the lock to Lighted Buoy D3 in Lac

Saint-François.

The downstream approach wall has a berthing length of 379m. The upstream approach wall has a berthing length of 503m.

Pilotage.—The master of a vessel downbound that is to arrive in the compulsory pilotage area of the Laurentian Pilotage Authority shall give notice of the immediate and ultimate destinations of the vessel by calling the St. Lawrence Seaway radio control when passing Beauharnois Lock.

The channel between the two sets of locks is only about 936m long, with a least width of about 91m. Between the two locks, four sets of overhead transmission lines, with a least vertical clearance of 45.1m, span the channel, although during severe icing conditions, this vertical clearance may be reduced to as little as 43.6m.

Upper Beauharnois Lock has a lift of 11 to 12m. Lower Beauharnois Lock has a lift of 12 to 13m.

Anchorage.—An anchorage area, with depths of 8.2 to 11m, lies adjacent to the Seaway channel close SW of Upper Beauharnois Lock. Care should be taken not to anchor over the submerged pipelines and cables which cross the anchorage area.

Caution.—When approaching the downstream approach wall at the lock, vessels have reported strong currents setting across the approach course on occasion. The strength of the crosscurrent varies considerably, depending on the amount of water being released at the power dam.

Strong cross currents have been reported in the downstream approach to Lower Beauharnois Lock. The strength of the cross current varies considerably, depending on the flow from the power dam.

10.63 Pont Saint-Louis (45°14'N., 74°00'W.), a combined road and railway bridge, spans the canal about 5.3 statue miles above Upper Beauharnois Lock. The bridge section spanning the canal is 54.9m wide, with a vertical clearance of 36.5m when open. The vertical clearance is 4.3m when closed. Unless a vessel's approach to the lift bridge has been recognized by a flashing amber signal light, the vessel shall signal the bridgemaster by VHF radio when the vessel is abreast of the bridge whistle signs, which are about 1,850m below and 2,990m above the span.

Two sets of overhead power cables, with a minimum vertical clearance of 44m, cross the Canal de Beauharnois, about 0.9 mile NE of Pont St.-Louis.

An emergency anchorage area lies adjacent to and S of the channel close upstream of Pont St.-Louis. A least depth of 8.2m exists in this anchorage.

Caution.—A vessel's approach to the lift bridge is governed by light signals controlled by the bridge operator, or if necessary, by VHF radio on Channel 14. Whistle signs are installed, for upbound vessels, 1 mile downstream of the bridge. For downbound vessels, the whistle sign is 1.6 miles upstream of the bridge. Unless a vessel's approach to the lift bridge has been acknowledged by flashing amber lights on the caution sign, the master shall notify the bridge operator by VHF radio when the vessel comes abreast of the whistle sign.

10.64 Port de Valleyfield (45°13'N., 74°06'W.), a small basin used for handling cargo, stands on the N side of the channel about 4 miles above Pont St.-Louis. The basin is 76m wide and has a least reported depth of 7m. A depth of 7m was also found off the SE corner of the N wall.

Pont de Valleyfield, a road and railway bridge, with a channel width of 55m and a vertical clearance of 36.6m when open and 3.5 when closed, crosses the ship channel about 1 mile upstream from Port de Valleyfield. Unless a vessel's approach to the lift bridge has been recognized by the flashing amber lights on the caution sign, the vessel shall contact the bridgemaster when abeam of the bridge whistle signs.

An emergency anchorage area, with depths of 8.2 to 13.4m, lies adjacent to and S of the channel close upstream of Pont de Valleyfield.

A ship reporting station, for vessels bound downstream only, stands at the upstream entrance to Canal de Beauharnois.

Salaberry de Valleyfield, a small city, stands at the NE end of Lac Saint-François. Several church spires and tall factory chimneys in the city are conspicuous from the lake.

On entering Lac Saint-François from Canal de Beauharnois, the Seaway channel has a least width of 137m for the first 2 miles. The depths in the channel in Lac Saint-François are nowhere less than 8.2m and considerably more in the greater part of the channel.

There is a speed limit of 12 knots upbound and 13.5 knots downbound over the bottom between Buoy D3, near the upper entrance to Canal de Beauharnois, and Buoy D49, N of **Butternut Island** (45°03'N., 74°29'W.).

Port de Valleyfield—Contact Information	
Port Authority	
Telephone	450-373-4021
Facsimile	450-373-2026
E-mail	info@portvalleyfield.com
Web site	http://www.portvalleyfield.com

Port de Valleyfield—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
Southern Wharf						
No. 1	232m	8.2m	200m	—	23.7m	Aggregates.
Eastern Wharf						
No. 5	114m	8.2m	225.5m	—	23.7m	Dry bulk and general cargo.

Port de Valleyfield—Berth Information						
Berth	Length	Depth	Maximum Vessel			Remarks
			LOA	Draft	Beam	
No. 6	109m	8.2m	193.5m	—	23.6m	Dry bulk and general cargo.
No. 7	109m	8.2m	225.5m	—	23.7m	Dry bulk and general cargo. Ro-ro berth fore and aft.
Northern Wharf (Valley Tank)						
No. 2	110m	8.2m	164.3m	8.0m	23.7m	Sulphuric acid and petroleum products.
No. 4	482m	8.2m	225.5m	—	23.7m	Dry bulk cargo and liquid asphalt.

Three irregularly-shaped anchorage areas, one to the N and two to the S of the Seaway channel, lie between Buoy D5 and Buoy D17.

The current sets diagonally across the Seaway channel on the 209° course, but the rate is slight. Over most of the lake area the rate rarely exceeds 0.5 knot.

A traffic reporting station for upbound and downbound traffic stands in the vicinity of the light at **Ste. Anicent Shoal** (45°09'N., 74°22'W.).

10.65 Coteau-Landing (45°15'N., 74°13'W.), a small village fronted by a pier with a depth of 2.4m alongside its face, stands in the NE part of Lac Saint-Francis.

Pointe Beaudette (45°12'N., 74°19'W.), about 6 miles SW of Coteau-Landing, has a disused lighthouse and a rear range beacon on it. From a distance, the point appears as an island.

The NE and SE shores of the lake are generally low and wooded. **Ile des Francs-Tireurs** (45°11'N., 74°15'W.), a small island with a private pier extending from its NE end, stands close N of Pointe Biron, about 4.5 miles SW of the W entrance to Canal de Beauharnois.

A small pier extends from Port Lewis, about 1.5 miles to the W of Pointe Biron.

An ornate church with a very conspicuous white dome stands in the small village of Saint-Anicet, about 5.5 miles WSW of Pointe Biron. A conspicuous cross, about 23m high, stands to the E of the village. A small pier, 18m long with a depth of 2.1m alongside, extends from the shore abreast of the village.

10.66 Pointe au Cèdre (45°05'N., 74°26'W.), about 4 miles SW of Saint-Anicet, is fronted by an L-shaped pier with shallow depths alongside.

The Seaway channel through the W part of Lac Saint-Francois has a least width of 137m and a least depth of 8.6m. Lancaster Bar, an area of very shallow water with a deep channel through it, lies NW of Pointe au Cèdre. The current across Lancaster Bar is reported to set fair with the channel at a rate of 1 knot or less.

Between Buoy D49 N of Butternut Island and Snell Lock, there is a speed limit of 8.5 knots upbound and 10.5 knots downbound, at normal water levels.

Between **Clark Island** (45°03'N., 74°34'W.) and Ile Saint-Regis, the current is reported to set fair with the Seaway channel at a rate of 1.5 knots.

Four irregularly-shaped anchorage areas, two on the N side and two on the S side of the Seaway channel, are situated between Clark Island and Ile Saint-Regis.

The village of South Lancaster stands on the N side of the mouth of the Raisin River, about 3.3 miles NW of Pointe au Cedre. An islet, called The Cairn, which has a conspicuous conical stone cairn, stands close S of South Lancaster.

From a position about 2.8 miles W of Pointe au Cedres, the Seaway channel is bordered on its W side by Squaw Island, St.-Francis Island, Hamilton Island, Renshaw Island, and Clark Island, and on its E side by Butternut Island, Camerons Island, Little Hog Island, Stanley Island, Jacobs Island, Dodens Island, Canal Island, and Dickerson Island. Abeam of Clark Island the channel trends W for about 1 mile and then SW, passing close along the NW side of Ile Saint-Regis. Between the W end of Ile Saint-Regis and the two Colquhoun Islands to the N, the channel turns and passes between Cornwall Island and Ile Saint-Regis, and then extends W between the S shore of Cornwall Island and the mainland shore of the United States to the S. The channel in this area has a least width of 129m S of Cornwall Island.

South of the Colquhoun Islands, allowance should be made for an E current of up to 2 knots. Between Cornwall Island and Ile Saint-Regis, a rate of 3 knots has been reported setting with the channel. At the turn in the SE of Cornwall Island, the current has been reported to set to the E. In addition, a perceptible NE set across the channel, with consequent eddies along the shore from the waters of the Raquette River, has been experienced at high stages of water in the river. To the E of Raquette Point, the current sets with the channel at a rate of 2.5 knots.

10.67 Cornwall (45°01'N., 74°43'W.) (World Port Index No. 2620) stands on the N shore of the St. Lawrence River N of Cornwall Island.

Cornwall is a port of entry. Vessels bound for this harbor from foreign ports may request pratique from the Quarantine Station, Montréal. The St. Lawrence Seaway Management Corporation has its operating headquarters in Cornwall. The seaway channel distance from Montréal is 69 miles. The navigation season is from mid-April to December 15.

The Cornwall Channel branches to the W from the Seaway Channel S of the Colquhoun Islands and has a least width of 129m. Pilon Island lies north of the Cornwall Channel west of the Colquhoun Islands.

Facilities are also available for discharging oils and industrial chemicals using the government wharf and a tank farm.

Depths—Limitations.—Cornwall Wharf is 175m long, with a width of 10 to 15m and a depth of 8.2m alongside.

The government wharf has a turning area extending 274m S

of the wharf. Although towage services are not usually required, tugs are available for emergency use with sufficient notice.

Pilotage.—Pilotage is compulsory on the St Lawrence River and for all St. Lawrence ports.

Contact Information.—The Cornwall Port Authority can be contacted by telephone (416-952-1054).

Caution.—Overhead power-lines, with a clearance of 20m, cross the channel 0.4 mil W of the bridge, near the abutments of the former Roosevelt Bridge.

How to use the Index—Gazetteer

Geographic names of navigational features are generally those used by the nation having sovereignty and are listed alphabetically. Diacritical marks, such as accents, cedillas, and circumflexes, which are related to specific letters in certain foreign languages, are not used in the interest of typographical simplicity.

Geographic names or their spellings do not necessarily reflect recognition of the political status of an area by the United States Government. Positions are approximate and are intended merely as locators to facilitate reference to the charts.

To use as a Gazetteer note the position and Sector number of the feature and refer to the Chart Information diagram for the Sector. Plot the approximate position of the feature on this diagram and note the approximate chart number.

To use as an Index of features described in the text note the paragraph number at the right. To locate this feature on the best scale chart use the Gazetteer procedure above.

Index—Gazetteer

	Position °	'	°	'	Sec. Para
LA POCATIERE	47	22 N	70	02 W	10.32
LAC SAINT-LOUIS	45	24 N	73	49 W	10.60
LAC SAINT-PIERRE	46	13 N	72	49 W	10.49
LANORAIE	45	57 N	73	13 W	10.52
LE CORPS MORT	47	16 N	62	12 W	6.3
LE GROS CACOUNA	47	56 N	69	30 W	10.19
LE GROS CAP	47	21 N	61	53 W	6.9
LE PILIER DE PIERRE	47	12 N	70	22 W	10.32
LEANDER SHOAL	48	24 N	64	18 W	7.32
LES ECUREUILS	46	40 N	71	43 W	10.42
LES FONDS	46	39 N	71	36 W	10.41
LES ILETS	48	59 N	67	01 W	9.33
LES PELERINS	47	43 N	69	44 W	10.21
LESSER HOPE ROCK	43	47 N	64	53 W	2.21
LETANG HARBOR	45	04 N	66	49 W	1.35
LETANG HEAD	45	03 N	66	49 W	1.36
LEWIS HEAD	45	54 N	63	44 W	6.70
LIBERTY POINT	44	50 N	66	56 W	1.18
LIGHTHOUSE COVE	44	15 N	66	24 W	1.84
LIGHTHOUSE POINT	45	07 N	66	21 W	1.41
LISCOMB HARBOR	45	00 N	62	01 W	3.38
LISCOMB POINT	44	59 N	61	59 W	3.36
LITTLE DOVER ISLAND	45	16 N	60	59 W	3.56
LITTLE GULLY	46	51 N	64	55 W	6.84
LITTLE HARBOUR HEAD	44	42 N	62	52 W	3.12
LITTLE LISCOMB HARBOR	45	01 N	61	58 W	3.39
LITTLE NARROWS LIGHT	46	00 N	60	59 W	5.34
LITTLE RIVER ISLAND	44	39 N	67	12 W	1.15
LITTLE ROCK	44	41 N	62	43 W	3.14
LIVERPOOL	44	02 N	64	43 W	2.27
LIVERPOOL BAY	44	02 N	64	39 W	2.26
LOBSTER BAY	43	37 N	65	55 W	1.67
LOCKEPORT HARBOUR	43	42 N	65	07 W	2.18
LOCKWOOD ROCK	44	52 N	62	04 W	3.33
LOIUSBOURG	44	55 N	59	58 W	5.21
LONG ISLAND	44	41 N	62	54 W	3.10
LONG ISLAND	44	43 N	66	43 W	1.11
LONG ISLAND	46	11 N	60	25 W	5.30
LONG POINT	44	37 N	66	43 W	1.9
LONG SHOAL	43	38 N	65	07 W	2.36
LONGSPELL POINT	45	10 N	64	21 W	1.100
LONGUE POINTE	51	25 N	57	12 W	8.2
LORNEVILLE HARBOR	45	12 N	66	09 W	1.42
LORRAINE HEAD	45	55 N	59	55 W	5.20
LOUISBURG	44	55 N	59	58 W	5.21
LOW POINT	45	43 N	61	28 W	4.23
LOW POINT	46	16 N	60	08 W	5.11
LUBEC	44	52 N	66	59 W	1.19
LUKE ISLAND	44	35 N	63	56 W	2.50
LUNENBURG BAY ENTRANCE	44	20 N	64	14 W	2.35
LUNENBURG HARBOUR	44	22 N	64	18 W	2.37
LURCHER SHOAL	43	51 N	66	29 W	1.74

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MABOU HARBOUR	46	05 N	61	28 W	4.31
MACCALLUMS POINT	46	23 N	63	49 W	6.53
MACHIAS SEAL ISLAND	44	30 N	67	06 W	1.4
MACINTOSH COVE	43	44 N	61	02 W	5.45
MACINTOSH POINT	45	42 N	61	07 W	5.44
MACIVERS POINT	46	02 N	60	56 W	5.34
MACKAY POINT	46	04 N	60	44 W	5.31
MACKENZIE HEAD	45	41 N	62	38 W	6.61
MACKENZIE POINT	46	07 N	60	39 W	5.28
MACRAE POINT	45	45 N	60	51 W	5.45
MAGPIE BAY	50	18 N	64	26 W	9.2
MAHONE BAY	44	27 N	64	23 W	2.44
MAIN-A-DIEU HARBOR	46	00 N	59	51 W	5.19
MAIN-A-DIEU PASSAGE	46	00 N	59	48 W	5.18
MAISONNETTE LEDGE	47	50 N	64	56 W	7.18
MALAGAWATCH HARBOR	45	52 N	60	57 W	5.41
MALPEQUE	46	32 N	63	41 W	6.28
MALPEQUE BAY	46	34 N	63	42 W	6.27
MAN OF WAR POINT	46	11 N	60	33 W	5.27
MANITOU RIVER	50	18 N	65	14 W	9.4
MAPLE HILL	44	40 N	66	50 W	1.8
MAQUEREAU POINT	48	12 N	64	47 W	7.26
MARACHE POINT	45	29 N	61	02 W	4.8
MARBLE POINT	45	56 N	60	32 W	5.49
MARGAREE HARBOUR	46	26 N	61	07 W	4.33
MARGAREE ISLAND	46	21 N	61	16 W	4.32
MARIE JOSEPH HARBOR	44	58 N	62	05 W	3.32
MARS HEAD	44	26 N	63	43 W	2.63
MARSH POINT	46	18 N	61	16 W	4.32
MARSOUI	49	13 N	66	04 W	9.15
MARTIN HEAD	45	29 N	65	11 W	1.50
MARYS POINT	45	43 N	64	39 W	1.53
MASCABINS POINT	45	02 N	66	54 W	1.26
MASKELLS HARBOUR	46	01 N	60	47 W	5.36
MATANE	48	51 N	67	32 W	9.34
MATTHEWS HEAD	45	34 N	64	58 W	1.52
MCCANN HEAD	45	07 N	67	02 W	1.27
MCCOY HEAD	45	15 N	65	44 W	1.48
MCDORMAND PATCH	44	05 N	66	29 W	1.77
MCKINNONS HARBOUR	45	55 N	60	56 W	5.41
MCLEAN COVE	45	58 N	62	39 W	6.42
MCMAHON POINT	45	04 N	66	55 W	1.27
MCMASTER ISLAND	45	03 N	66	56 W	1.25
MCNABS ISLAND	44	36 N	63	31 W	3.6
MCNUTTS ISLAND	43	38 N	65	17 W	2.13
MCPHEE ISLAND	45	56 N	60	33 W	5.47
MEDWAY HARBOUR ENTRANCE	44	06 N	64	32 W	2.29
MEISNER ISLAND	44	32 N	64	14 W	2.45
MERIGOMISH HARBOUR	45	39 N	62	27 W	6.60
MERLIN ROCK	44	25 N	63	36 W	3.2
MERSEY POINT	44	02 N	64	41 W	2.26
METEGHAN	44	12 N	66	10 W	1.78
METIS-SUR-MER	48	41 N	67	59 W	9.35
MICHAUD POINT	45	34 N	60	41 W	4.13
MIDDLE ISLAND	47	03 N	65	27 W	7.9
MIDDLE POINT	51	26 N	57	29 W	8.3
MIDJIK BLUFF	45	07 N	66	55 W	1.27
MIGUASHA POINT	48	04 N	66	18 W	7.23
MILL COVE	44	56 N	66	54 W	2.55
MILLSTONE ISLAND	45	12 N	61	07 W	3.55
MILNE POINT	50	13 N	60	19 W	8.19
MIMINEGASH POND	46	53 N	64	14 W	6.58
MINGAN HARBOR	50	17 N	4	01 W	8.31
MINGAN HARBOR	50	17 N	64	010 W	8.31
MIRAMICHI (NEWCASTLE)	47	00 N	65	34 W	7.11
MIRAMICHI BAR	47	08 N	64	59 W	7.7
MIRAMICHI BAY	47	09 N	65	01 W	7.6
MIRAMICHI RIVER	47	05 N	65	19 W	7.9
MISCOU BANKS	48	07 N	64	10 W	7.13
MISCOU FLAT	47	57 N	64	37 W	7.14
MISCOU GULLY	47	55 N	64	30 W	7.12
MISCOU HARBOUR	47	53 N	64	33 W	7.15
MISPIC POINT	45	12 N	65	59 W	1.45
MOISIE BAY	50	15 N	65	56 W	9.5
MOLASSES HARBOUR	45	15 N	61	13 W	3.51
MONCTON	46	05 N	64	46 W	1.55
MONEY POINT	47	02 N	60	23 W	5.5
MONK HEAD	45	40 N	61	50 W	4.27
MONT DU BIC	48	20 N	68	49 W	9.38
MONTAGUE	46	10 N	62	38 W	6.38
MONTREAL HARBOR	45	31 N	73	33 W	10.55
MOOSE BAY	45	25 N	61	25 E	4.6
MOOSE ISLAND	44	55 N	67	00 W	1.22
MOOSE ISLAND	45	23 N	64	05 W	1.99
MOQUE HEAD	46	00 N	59	49 W	5.18
MORDEN	45	06 N	64	57 W	1.90
MOSHER ISLAND	44	14 N	64	19 W	2.33
MOUNT MISERY	45	11 N	61	43 W	3.44
MOUNT ST-JEAN	50	28 N	64	17 W	8.27
MOUTON HEAD	43	52 N	64	47 W	2.22
MUD ISLAND	43	29 N	65	59 W	1.64
MUNRO POINT	46	10 N	60	34 W	5.26
MURR LEDGES	44	31 N	66	52 W	1.6
MURRAY BAY	47	38 N	70	08 W	10.26
MURRAY HARBOUR	46	01 N	62	30 W	6.39
MUSHABOOM HARBOUR	44	50 N	62	33 W	3.25
MUSQUASH HARBOR	45	09 N	66	15 W	1.42
MUSQUODOBOIT HARBOR	44	47 N	63	09 W	3.9
MUSQUODOBOIT INLET	44	40 N	63	04 W	3.9

N

NATASHQUAN POINT	50	05 N	61	44 W	8.23
NAVY ISLAND	45	04 N	67	03 W	1.29
NECUM TEUCH HARBOR	44	57 N	62	13 W	3.29
NEGRO HARBOUR	43	33 N	65	25 W	2.11
NEGRO HARBOUR WHISTLE BUOY	43	31 N	65	19 W	2.11

	Position °	'	°	'	Sec. Para
YARMOUTH HARBOR	43	50 N	66	07 W	1.73