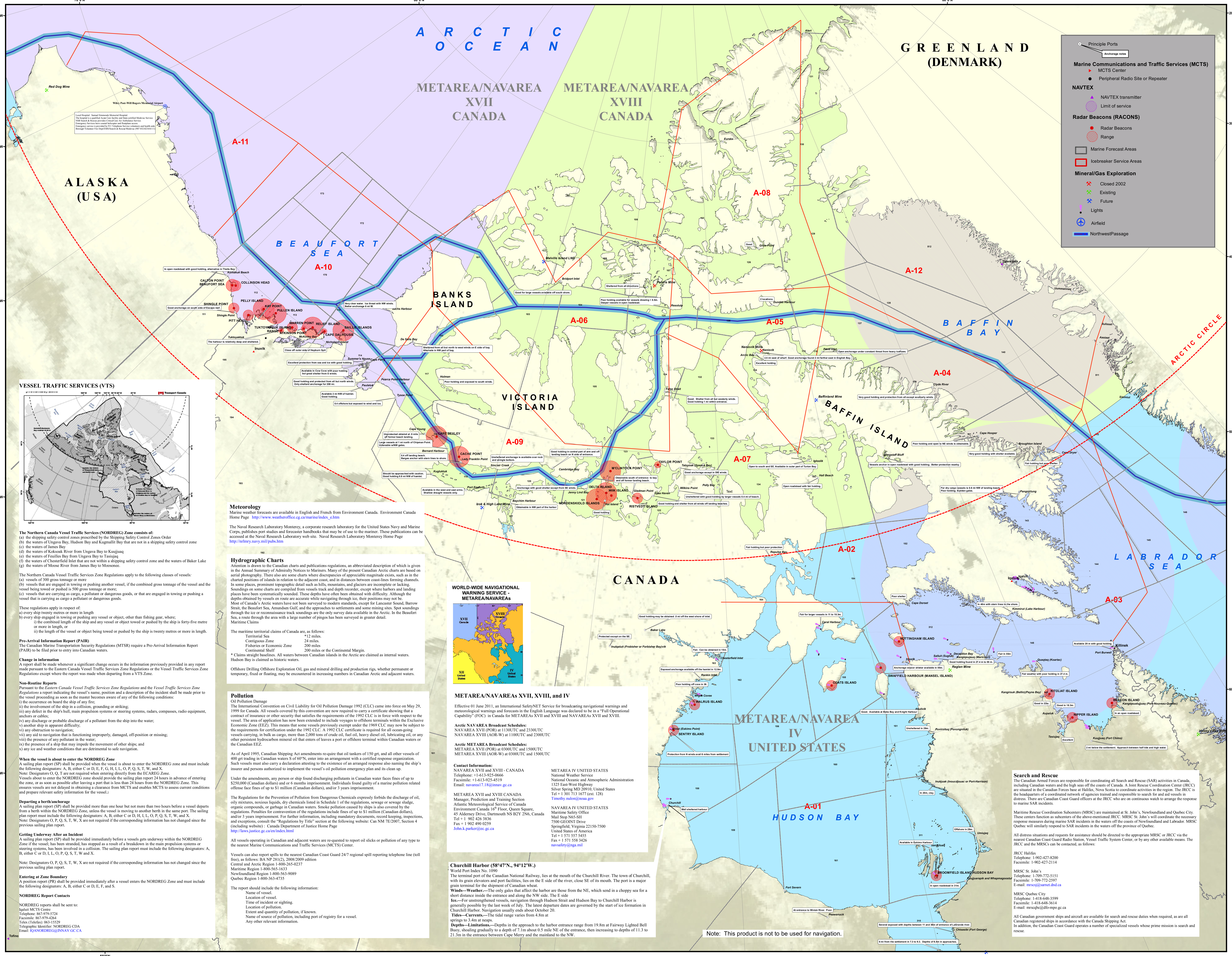
Mariner's Routing Guide
Northwest Passage
Arctic Ocean

Scale 1:4,300,000

Lambert Conformal Conic Projection
Standard Parallels : 62° 30' N, 84° 30' N

DRAFT



VESSEL TRAFFIC SERVICES (VTS)

The Northern Canada Vessel Traffic Services (NORDREG) Zone consists of:
(a) the shipping safety control zones prescribed by the Shipping Safety Control Zones Order
(b) the waters of Ungava Bay, Hudson Bay and Kugmallit Bay that are not in a shipping safety control zone
(c) the waters of James Bay
(d) the waters of Koksoak River from Ungava Bay to Kuujjuaq
(e) the waters of Feuilles Bay from Ungava Bay to Tasiujaq
(f) the waters of Chesterfield Inlet that are not within a shipping safety control zone and the waters of Baker Lake
(g) the waters of Moose River from James Bay to Moosonee.

The Northern Canada Vessel Traffic Services Zone Regulations apply to the following classes of vessels:
(a) vessels of 300 gross tonnage or more
(b) vessels that are engaged in towing or pushing another vessel, if the combined gross tonnage of the vessel and the vessel being towed or pushed is 500 gross tonnage or more;
(c) vessels that are carrying as cargo, a pollutant or dangerous goods, or that are engaged in towing or pushing a vessel that is carrying as cargo a pollutant or dangerous goods.

These regulations apply in respect of:
a) every ship twenty metres or more in length
b) every ship engaged in towing or pushing any vessel or object, other than fishing gear, where;
i) the combined length of the ship and any vessel or object towed or pushed by the ship is forty-five metre or more in length, or
ii) the length of the vessel or object being towed or pushed by the ship is twenty metres or more in length.

Pre-Arrival Information Report (PAIR)
The Canadian Marine Transportation Security Regulations (MTSR) require a Pre-Arrival Information Report (PAIR) to be filed prior to entry into Canadian waters.

Change in information
A report shall be made whenever a significant change occurs in the information previously provided in any report made pursuant to the Eastern Canada Vessel Traffic Services Zone Regulations or the Vessel Traffic Services Zone Regulation*s* except where the report was made when departing from a VTS Zone.

Non-Routine Reports
Pursuant to the *Eastern Canada Vessel Traffic Services Zone Regulations* and the *Vessel Traffic Services Zone Regulations* a report indicating the vessel's name, position and a description of the incident shall be made prior to the vessel proceeding as soon as the master becomes aware of any of the following conditions:
i) the occurrence on board the ship of any fire;
ii) the involvement of the ship in a collision, grounding or striking;
iii) any defect in the ship's hull, main propulsion systems or steering systems, radars, compasses, radio equipment, anchors or cables;
iv) any discharge or probable discharge of a pollutant from the ship into the water;
v) another ship in apparent difficulty;
vi) any obstruction to navigation;
vii) any aid to navigation that is functioning improperly, damaged, off-position or missing;
viii) the presence of any pollutant in the water;
ix) the presence of a ship that may impede the movement of other ships; and
x) any ice and weather conditions that are detrimental to safe navigation.

When the vessel is about to enter the NORDREG Zone
A sailing plan report (SP) shall be provided when the vessel is about to enter the NORDREG zone and must include the following designators: A, B, either C or D, E, F, G, H, I, L, O, P, Q, S, T, W, and X.
Note: Designators O, Q, T are not required when entering directly from the ECAREG Zone.
Vessels about to enter the NORDREG zone should provide the sailing plan report 24 hours in advance of entering the zone, or as soon as possible after leaving a port that is less than 24 hours from the NORDREG Zone. This ensures vessels are not delayed in obtaining a clearance from MCTS and enables MCTS to assess current conditions and prepare relevant safety information for the vessel.2

Departing a berth/anchorage
A sailing plan report (SP) shall be provided more than one hour but not more than two hours before a vessel departs from a berth within the NORDREG Zone, unless the vessel is moving to another berth in the same port. The sailing plan report must include the following designators: A, B, either C or D, H, I, L, O, P, Q, S, T, W, and X.
Note: Designators O, P, Q, S, T, W, X are not required if the corresponding information has not changed since the previous sailing plan report.

Getting Underway After an Incident
A sailing plan report (SP) shall be provided immediately before a vessels gets underway within the NORDREG Zone if the vessel; has been stranded, has stopped as a result of a breakdown in the main propulsion systems or steering systems, has been involved in a collision. The sailing plan report must include the following designators: A, B, either C or D, I, L, O, P, Q, S, T, W and X.

Note: Designators O, P, Q, S, T, W, X are not required if the corresponding information has not changed since the previous sailing plan report.

Entering at Zone Boundary
A position report (PR) shall be provided immediately after a vessel enters the NORDREG Zone and must include the following designators: A, B, either C or D, E, F, and S.

NORDREG Report Contacts

NORDREG reports shall be sent to:
Iqaluit MCTS Centre
Telephone: 867-979-5724
Facsimile: 867-979-4264
Telex (Telefax): 063-15529
Telegraphic Identifier: NORDREG CDA
Email: IQANORDREG@INNAV.GC.CA

Meteorology
Marine weather forecasts are available in English and French from Environment Canada. Environment Canada Home Page http://www.weatheroffice.cg.ca/marine/index_e.htm

The Naval Research Laboratory Monterey, a corporate research laboratory for the United States Navy and Marine Corps, publishes port studies and forecaster handbooks that may be of use to the mariner. These publications can be accessed at the Naval Research Laboratory web site. Naval Research Laboratory Monterey Home Page http://nrlmry.navy.mil/pubs.htm

Hydrographic Charts
Attention is drawn to the Canadian charts and publications regulations, an abbreviated description of which is given in the Annual Summary of Admiralty Notices to Mariners. Many of the present Canadian Arctic charts are based on aerial photography. There also are some charts where discrepancies of appreciable magnitude exists, such as in the charted positions of islands in relation to the adjacent coast, and in distances between coast-lines forming channels. In some places, prominent topographic detail such as hills, mountains, and glaciers are incomplete or lacking. Soundings on some charts are compiled from vessels track and depth recorder, except where harbors and landing places have been systematically sounded. These depths have often been obtained with difficulty. Although the depths obtained by vessels en route are accurate while navigating through ice, their positions may not be.
Most of Canada's Arctic waters have not been surveyed to modern standards, except for Lancaster Sound, Barrow Strait, the Beaufort Sea, Amundsen Gulf, and the approaches to settlements and some mining sites. Spot soundings through the ice or reconnaissance track soundings are the only survey data available in the Arctic. In the Beaufort Sea, a route through the area with a large number of pingos has been surveyed in greater detail.
Maritime Claims

The maritime territorial claims of Canada are, as follows:

Territorial Sea	*12 miles.
Contiguous Zone	24 miles.
Fisheries or Economic Zone	200 miles
Continental Shelf	200 miles or the Continental Margin.

* Claims straight baselines. All waters between Canadian islands in the Arctic are claimed as internal waters. Hudson Bay is claimed as historic waters.

Offshore Drilling Offshore Exploration Oil, gas and mineral drilling and production rigs, whether permanent or temporary, fixed or floating, may be encountered in increasing numbers in Canadian Arctic and adjacent waters.

Pollution
Oil Pollution Damage
The International Convention on Civil Liability for Oil Pollution Damage 1992 (CLC) came into force on May 29, 1999 for Canada. All vessels covered by this convention are now required to carry a certificate showing that a contract of insurance or other security that satisfies the requirements of the 1992 CLC is in force with respect to the vessel. The area of application has now been extended to include voyages to offshore terminals within the Exclusive Economic Zone (EEZ). This means that some vessels previously exempt under the 1969 CLC may now be subject to the requirements for certification under the 1992 CLC. A 1992 CLC certificate is required for all ocean-going vessels carrying, in bulk as cargo, more than 2,000 tons of crude oil, fuel oil, heavy diesel oil, lubricating oil, or any other persistent hydrocarbon mineral oil that enters of leaves a port or offshore terminal within Canadian waters or the Canadian EEZ.

As of April 1995, Canadian Shipping Act amendments re-quire that oil tankers of 150 grt, and all other vessels of 400 grt trading in Canadian waters S of 60°N, enter into an arrangement with a certified response organization. Such vessels must also carry a declaration attesting to the existence of an arranged response also naming the ship's insurer and persons authorized to implement the vessel's oil pollution emergency plan and its clean up.

Under the amendments, any person or ship found discharging pollutants in Canadian water faces fines of up to $250,000 (Canadian dollars) and or 6 months imprisonment. Individuals found guilty of a marine pollution related offense face fines of up to $1 million (Canadian dollars), and/or 3 years imprisonment.

The Regulations for the Prevention of Pollution from Dangerous Chemicals expressly forbids the discharge of oil, oily mixtures, noxious liquids, dry chemicals listed in Schedule 1 of the regulations, sewage or sewage sludge, organic compounds, or garbage in Canadian waters. Smoke pollution caused by ships is also covered by the regulations. Penalties for contravention of the regulations include fines of up to $1 million (Canadian dollars), and/or 3 years imprisonment. For further information, including mandatory documents, record keeping, inspections, and exceptions, consult the "Regulations by Title" section at the following website: Can NM 7E/2007, Section 4 (including website) : Canada Department of Justice Home Page
http://laws.justice.gc.ca/en/index.html

All vessels operating in Canadian and adjacent waters are re-quested to report oil slicks or pollution of any type to the nearest Marine Communications and Traffic Services (MCTS) Center.

Vessels can also report spills to the nearest Canadian Coast Guard 24/7 regional spill reporting telephone line (toll free), as follows: BA NP 281(2), 2008/2009 edition
Central and Arctic Region 1-800-265-0237
Maritime Region 1-800-565-1633
Newfoundland Region 1-800-563-9089
Quebec Region 1-800-363-4735

The report should include the following information:
Name of vessel.
Location of vessel.
Time of incident or sighting.
Location of pollution.
Extent and quantity of pollution, if known.
Name of source of pollution, including port of registry for a vessel.
Any other relevant information.

WORLD-WIDE NAVIGATIONAL WARNING SERVICE - METAREA/NAVAREAs

METAREA/NAVAREAs XVII, XVIII, and IV

Effective 01 June 2011, an International SafetyNET Service for broadcasting navigational warnings and meteorological warnings and forecasts in the English Language was declared to be in a "Full Operational Capability" (FOC) in Canada for METAREAs XVII and XVIII and NAVAREAs XVII and XVIII.

Arctic NAVAREA Broadcast Schedules:
NAVAREA XVII (POR) at 1130UTC and 2330UTC
NAVAREA XVIII (AOR-W) at 1100UTC and 2300UTC

Arctic METAREA Broadcast Schedules:
METAREA XVII (POR) at 0300UTC and 1500UTC
METAREA XVIII (AOR-W) at 0300UTC and 1500UTC

Contact Information:
NAVAREA XVII and XVIII - CANADA
Telephone: +1-613-925-0666
Facsimile: +1-613-925-4519
Email: navarea17.18@innav.gc.ca

METAREA XVII and XVIII CANADA
Manager, Prediction and Training Section
Atlantic Meteorological Service of Canada
Environment Canada 16th Floor, Queen Square,
45 Alderney Drive, Dartmouth NS B2Y 2N6, Canada
Tel + 1 902 426 3836
Fax + 1 902 490 0259
John.k.parker@ec.gc.ca

METAREA IV UNITED STATES
National Weather Service
National Oceanic and Atmospheric Administration
1325 East-West Highway
Silver Spring MD 20910, United States
Tel + 1 301 713 1677 (ext. 128)
Timothy.nulon@noaa.gov

NAVAREA IV UNITED STATES
Maritime Safety Office
Mail Stop N65-SH
7500 GEOINT Drive
Springfield, Virginia 22150-7500
United States of America
Tel + 1 571 557 5455
Fax + 1 571 558 3426
navsafety@nga.mil

Churchill Harbor (58°47'N., 94°12'W.)
World Port Index No. 1090
The terminal port of the Canadian National Railway, lies at the mouth of the Churchill River. The town of Churchill, with its grain elevators and port facilities, lies on the E side of the river, close SE of its mouth. The port is a major grain terminal for the shipment of Canadian wheat.
Winds—Weather.—The only gales that affect the harbor are those from the NE, which send in a choppy sea for a short distance inside the entrance and along the NW side. The E side
Ice.—For unstrengthened vessels, navigation through Hudson Strait and Hudson Bay to Churchill Harbor is generally possible by the last week of July. The latest departure dates are governed by the start of ice formation in Churchill Harbor. Navigation usually ends about October 20.
Tides—Currents.—The tidal range varies from 4.8m at springs to 3.4m at neaps.
Depths—Limitations.—Depths in the approach to the harbor entrance range from 19.8m at Fairway Lighted Bell Buoy, shoaling gradually to a depth of 7.1m about 0.5 mile NE of the entrance, then increasing to depths of 11.3 to 21.3m in the entrance between Cape Merry and the mainland to the NW.

Search and Rescue
The Canadian Armed Forces are responsible for coordinating all Search and Rescue (SAR) activities in Canada, including Canadian waters and the high seas off the coasts of Canada. A Joint Rescue Coordination Center (JRCC) are situated in the Canadian Forces base at Halifax, Nova Scotia to coordinate activities in the region. The JRCC is the headquarters of a coordinated network of agencies trained and responsible to search for and aid vessels in distress. There are Canadian Coast Guard officers at the JRCC who are on continuous watch to arrange the response to marine SAR incidents.

Maritime Rescue Coordination Subcenters (MRSC) are maintained at St. John's, Newfoundland and Quebec City. These centers function as subcenters of the above-mentioned JRCC. MRSC St. John's will coordinate the necessary response measures during marine SAR incidents in the waters off the coasts of Newfoundland and Labrador. MRSC Quebec will similarly respond to SAR incidents in the waters off the province of Quebec.

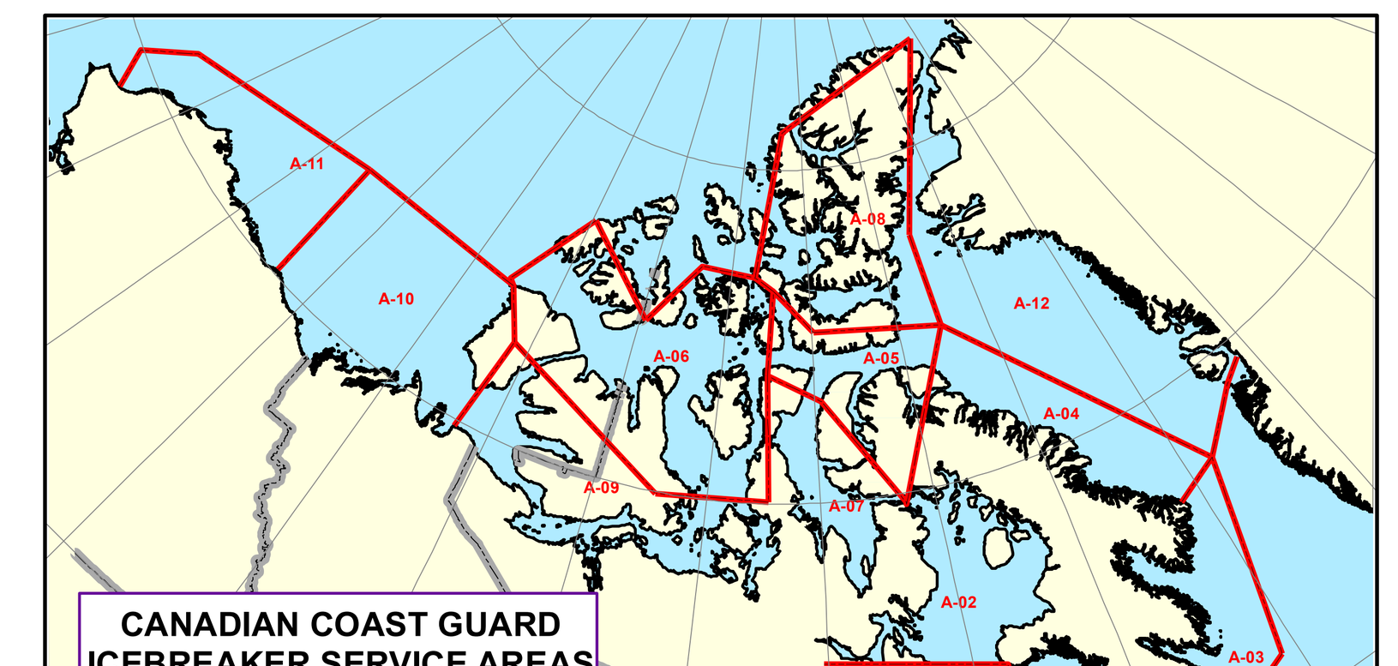
All distress situations and requests for assistance should be directed to the appropriate MRSC or JRCC via the nearest Canadian Coast Guard Radio Station, Vessel Traffic System Center, or by any other available means. The JRCC and the MRSCs can be contacted, as follows:

JRCC Halifax
Telephone: 1-902-427-8200
Facsimile: 1-902-427-2114

MRSC St. John's
Telephone: 1-709-772-5151
Facsimile: 1-709-772-2597
E-mail: mrscsj@sarnet.dnd.ca

MRSC Quebec City
Telephone: 1-418-648-3599
Facsimile: 1-418-648-3614
E-mail: mrscqbc@dfo-mpo.gc.ca

All Canadian government ships and aircraft are available for search and rescue duties when required, as are all Canadian registered ships in accordance with the Canada Shipping Act.
In addition, the Canadian Coast Guard operates a number of specialized vessels whose prime mission is search and rescue.



Canadian Coast Guard icebreaker Service Areas

	Area Name	Period (dd/mm)
A01	Hudson Bay	03/07 - 24/10
A02	Foxe Basin	20/08 - 15/09
A03	Hudson Strait	03/07 - 24/10
A04	East Baffin	14/08 - 18/09
A05	Parry Channel East	10/08 - 15/10
A06	Parry Channel West	10/08 - 15/10
A07	Pelly	12/08 - 13/10
A08	Elesmere	24/08 - 05/09
A09	Victoria	12/08 - 13/10
A10	Beaufort	25/07 - 25/09
A11	Barrow	25/07 - 25/09
A12	West Greenland	05/07 - 15/08