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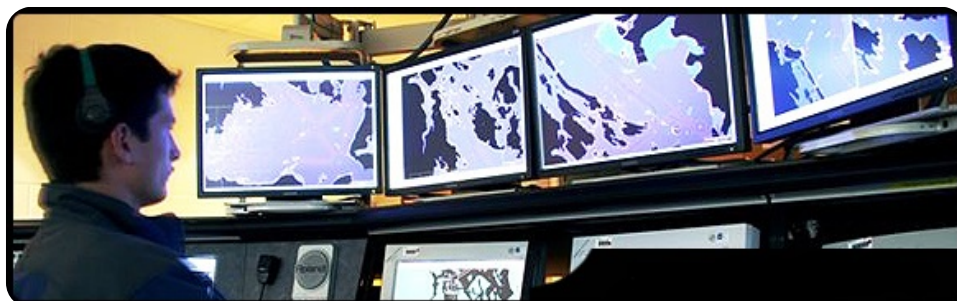
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Radio Aids to Marine Navigation 2016 (Pacific and Arctic)



Safety First, Service Always



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PART 1 FOREWORD

1.1 ADVANCE NOTICES

In order that mariners may have advance knowledge of proposed changes to existing facilities to be provided, additions, deletions and changes to such facilities under the jurisdiction of the Canadian Coast Guard are listed hereunder. Effective dates of changes and dates for the commissioning of new facilities are, however, extremely hard to forecast owing to difficulties in obtaining materials and subject to the provision of necessary funds. Every effort will be made to amend dates as far in advance as possible. In every case of changes to facilities and commissioning new facilities, an appropriate Notice to Mariners will be issued.

1.1.1 Update to Consolidation of Marine Communications and Traffic Services (MCTS) Centres

The Canadian Coast Guard is modernizing and consolidating its Marine Communications and Traffic Services (MCTS) Centres. Clients will continue to receive the high-quality service they have come to expect.

Once complete, there will be a total of 12 MCTS Centres strategically located across the country. Additional information pertaining to this project will be advertised to clients by all available means.

Western Region

Comox MCTS will consolidate to Victoria MCTS in Spring 2016.

The new technology will increase efficiency permitting employees to have a greater ability to focus on the safety services they provide to mariners. Mariners are encouraged to visit the Radio Aids to Marine Navigation (RAMN) and Notices to Mariners (NOTMAR) PART 3 on a monthly basis for updated information and potential changes to contact information and marine broadcast schedules.

1.1.2 Change to Maritime Mobile Service Identity (MMSI) Numbers

Consolidation of MCTS Centres will result in changes to MMSI numbers. As Consolidation dates approach, the Canadian Coast Guard will issue a Notice to Shipping to advertise pertinent changes to information. Mariners using VHF DSC may be required to program new MMSI numbers into their systems. Please refer to the table below.

Consolidating Centres	Discontinued MMSI	Replace with MMSI
Tofino Coast Guard Radio consolidating to Prince Rupert Coast Guard Radio	00 316 0012	00 316 0013
Vancouver Coast Guard Radio consolidating to Victoria Coast Guard Radio	00 316 0010	00 316 0011
Comox Coast Guard Radio consolidating to Victoria Coast Guard Radio	00 316 0014	00 316 0011

The changes to MMSI numbers will only take effect upon Consolidation. Mariners are encouraged to visit the Radio Aids to Marine Navigation (RAMN) and Notices to Mariners (NOTMAR) PART 3 on a monthly basis for updated information.

1.1.3 The Radio Aids to Marine Navigation Annual Publications

Effective April 1, 2013, the Canadian Coast Guard has ceased the printing of its "Radio Aids to Marine Navigation" annual publications which include the "Atlantic, St. Lawrence, Great Lakes, Lake Winnipeg and Arctic" edition as well as the "Pacific and Arctic" edition. The publications will continue to be available online, free of charge, at:

[http://www.ccg-gcc.gc.ca/eng/CCG/Information for Mariners](http://www.ccg-gcc.gc.ca/eng/CCG/Information_for_Mariners)

The "Radio Aids to Marine Navigation" annual publications are updated each April. Amendments will continue to be advertised by radio broadcast (Notices to Shipping) and/or issued on a monthly basis, when required, in "Notices to Mariners", Section 3. The "Notices to Mariners" publication is available online, free of charge, at: <http://www.notmar.gc.ca>.

Every ship station fitted on a Canadian ship or on a non-Canadian ship engaged in the coasting trade of Canada, pursuant to the *Ship Station (Radio) Regulations 1999*, and all ships in waters under Canadian jurisdiction, pursuant to the *Charts and Nautical Publications Regulations, 1995*, are required to carry the most recent applicable edition of "Radio Aids to Marine Navigation".

1.1.4 Ship Radio Inspections

Owners and masters of Canadian vessels are advised that Transport Canada has delegated the authority to issue radio inspection certificates to Recognized Organizations under the Delegation Statutory Inspection Program. Vessels enrolled in the Delegation Statutory Inspection Program, as well as classed ships, are encouraged to contact a Recognized Organization for their radio inspection required by regulations under the *Canada Shipping Act, 2001*. Currently, the Recognized Organizations are: the American Bureau of Shipping; Bureau Veritas; Det Norske Veritas; Germanischer Lloyd; and, Lloyd's Register. This is in addition to the Canadian Coast Guard, who continues to also have delegated authority for this function.

1.1.5 The Canadian Forces Fleet MetOc Broadcast Service

The Canadian Forces Fleet MetOc Broadcast service (radioteletype and radiofacsimile) was placed in abeyance effective September 2, 2010. The Canadian Forces Fleet MetOc Broadcast may be reinstated and ceased without warning as necessitated by military operational requirements. When notified, Marine Communications and Traffic Services will issue a Notice to Shipping concerning reinstatement or cessation of this service.

1.1.6 Prince Rupert MCTS – Changes to Navtex and MF Broadcast Content

Prince Rupert MCTS will amend the NAVTEX broadcast from Digby Island (Identifier D) and Amphitrite (Identifier H) to become compliant with the International NAVTEX Service standards for broadcast content. The MF radiotelephony broadcast from Digby Island, Hunter Point and Amphitrite Point will also be amended to meet these same broadcast standards.

Effective April 1st, 2016 at 0800 UTC (0000 PDT), the broadcast content for both services will contain only offshore weather and Notice to Shipping information for areas beyond VHF coverage or 40 nm offshore.

The North Coast broadcast content on both NAVTEX and MF Radiotelephony will include the following:

- marine forecast areas 2, 3, and 4;
- ODAS buoys: North Nomad (46184), Middle Nomad (46004), West Dixon Entrance (46205), West Moresby (46208) and South Moresby (46147);
- Notice to Shipping for offshore waters only.

The South Coast broadcast content on both NAVTEX and MF Radiotelephony will include the following:

- marine forecast areas 1, 5, 6, and 7;
- ODAS buoys: South Nomad (46036), South Brooks (46132), La Perouse Bank (46206) and East Dellwood (46207);
- Notice to Shipping for offshore waters only.

1.2 CANADIAN MARITIME MOBILE SAFETY AND PUBLIC CORRESPONDENCE COMMUNICATION FREQUENCIES

The frequencies listed on the following pages are those in general use by ships in Canadian waters for inter-ship communications and for ship/shore communications with Marine Communications and Traffic Services Centres operated by the Canadian Coast Guard.

See Table 1-1 and 1-2 in the remarks column for channels and frequencies that are continuously monitored.

PART 2 of this publication contains individual listings for Marine Communications and Traffic Services centres operated by the Canadian Coast Guard, giving details of the communication and special services provided to ships.

On the following pages are frequency lists, including the geographical areas of use:

- Pacific Coast;
- Arctic; and
- Athabasca and Mackenzie Inland Waterways

Table 1-1 - Maritime Mobile Safety and Communication Frequencies MF/HF

Frequencies		Channel	Class of Emission	Areas Used	Remarks
kHz (ship)	kHz (coast)				
	490		F1B	b	NAVTEX Service (French).
	518		F1B	a, b	International NAVTEX Service (English).
2040			J3E		Inter-ship (vessels other than fishing and towing).
2054	2054		J3E	a	Public correspondence; MSI broadcasts. Continuously monitored – Prince Rupert and Tofino MCTS only.
2118	2514		J3E	b	Public correspondence; MSI broadcasts.
2142	2558		J3E	b, c	Public correspondence.
2182	2182		J3E	a, b	International distress and safety communications. Continuously monitored.
2187.5	2187.5		G2B		International distress and safety calls (DSC).
2206	2582		J3E	b	Public correspondence; MSI broadcasts.
2318			J3E		Inter-ship (fishing vessels).
2340	2458		J3E		Public correspondence.
2366			J3E		Inter-ship (other than fishing vessels).

Frequencies		Channel	Class of Emission	Areas Used	Remarks
kHz (ship)	kHz (coast)				
2638			J3E	b	Inter-ship (shared with U.S. vessels).
2738			J3E	b	Inter-ship (shared with U.S. vessels).
3023	3023		J3E	a, b, c	International SAR coordination communication, including aircraft.
	3253		J3C	b	Radiofacsimile
4071	4363	403	J3E	b, c	Public correspondence; MSI broadcasts. Continuously monitored – Iqaluit MCTS (except Hay River) only.
4083	4375	407	J3E	b	Public correspondence.
4125	4125		J3E	a, b	International distress and safety communications, including SAR aircraft. Continuously monitored – Prince Rupert MCTS.
4177.5	4177.5		F1B	b	International distress and safety communications (NBDP).
4207.5	4207.5		F1B	b	International distress and safety calls (DSC).
	4292		J3C	b	Radiofacsimile
5680	5680		J3E	a, b, c	International SAR coordination communications, including SAR aircraft.
5803	5803		J3E	c	International distress and safety communications; Public correspondence; MSI broadcasts. Continuously monitored – Iqaluit MCTS (except Cambridge Bay) only.
6200	6501	601	J3E	b, c	Public correspondence.
6206	6507	603	J3E	b	Public correspondence; MSI broadcasts
6212	6513	605	J3E	b	Public correspondence.
6215	6215		J3E	b	International distress and safety communications.
6218.6	6218.6		J3E	b, c	Public correspondence; MSI broadcasts.
6268	6268		F1B	b	International distress and safety communications (NBDP).
6312	6312		F1B	b	International distress and safety calls (DSC).
	7710		J3C	b	Radiofacsimile
8228	8752	812	J3E	b	Public correspondence.
8267	8791	825	J3E	b	Public correspondence.
8270	8794	826	J3E	b, c	Public correspondence.
8291	8291		J3E	b	International distress and safety communications.
8376.5	8376.5		F1B	b	International distress and safety communications (NBDP).
8414.5	8414.5		F1B	b	International distress and safety calls (DSC).

Frequencies		Channel	Class of Emission	Areas Used	Remarks
kHz (ship)	kHz (coast)				
	8416.5		F1B	b	NAVAREAs XVII and XVIII MSI broadcasts (NBDP).
	8456		J3C	b, c	Radiofacsimile
12230	13077	1201	J3E	b, c	Public correspondence.
12290	12290		J3E	b	International distress and safety communications.
12520	12520		F1B	b	International distress and safety communications (NBDP).
12577	12577		F1B	b	International distress and safety calls (DSC).
16420	16420		J3E	b	International distress and safety communications.
16695	16695		F1B	b	International distress and safety communications (NBDP).
16804.5	16804.5		F1B	b	International distress and safety calls (DSC).

Table 1-2 - Maritime Mobile Safety and Communication Frequencies VHF

Frequencies		Channel	Class of Emission	Areas Used	Remarks
Ship MHz	Coast MHz				
156.250	156.250	05A	F3E	a	Vessel Traffic Services.
156.300	156.300	06	F3E	a, b	Inter-ship safety and International SAR coordination communications, including aircraft.
156.400	156.400	08	F3E	b	Inter-ship and Safety communications.
156.525	156.525	70	G2B	a, b	International distress and safety calls (DSC). Continuously monitored.
156.550	156.550	11	F3E	a	Vessel Traffic Services and Pilotage. Continuously monitored – Prince Rupert, Victoria MCTS only.
156.575	156.575	71	F3E	a	Vessel Traffic Services. Continuously monitored – Victoria, Prince Rupert MCTS only.
156.600	156.600	12	F3E	a	VTS/Ports Operations/Pilotage. Continuously monitored –Victoria MCTS only.
156.650	156.650	13	F3E	a	Bridge to Bridge navigational traffic.
156.700	156.700	14	F3E	a	VTS/Ports Operations/Pilotage.
156.725	156.725	74	F3E	a	Vessel Traffic Services. Continuously monitored –Prince Rupert, Victoria MCTS only.
156.800	156.800	16	F3E	a, b, c	International distress and safety communications. Continuously monitored.
	161.650	21B	F3E	a	Weather and NOTSHIP broadcasts.
156.925	156.925	78A	F3E	a, b, c	Inter-ship for Fishing vessels.
157.100	157.100	22A	F3E	a	Ship and Canadian Coast Guard liaison (channel unmonitored).

Frequencies		Channel	Class of Emission	Areas Used	Remarks
Ship MHz	Coast MHz				
157.175	157.175	83A	F3E	a	Ship and Canadian Coast Guard liaison. Continuously monitored – Prince Rupert, Victoria MCTS (except Gabriola Island) only.
	161.775	83B	F3E	a	Weather and NOTSHIP broadcasts.
157.225	161.825	84	F3E	a	Public correspondence. Continuously monitored – Prince Rupert, Victoria MCTS only.
157.275	161.875	85	F3E	a, c	Public correspondence: MSI broadcasts
157.300	161.900	26	F3E	a, b, c	Public correspondence; MSI broadcasts. Continuously monitored – Iqaluit, Prince Rupert, Victoria MCTS only.
161.975	161.975	87B	G2B	a	AIS-1
162.025	162.025	88B	G2B	a	AIS-2
	162.400	WX2	F3E	a	Weather and NOTSHIP broadcasts.
	162.475	WX3	F3E	a	Weather and NOTSHIP broadcasts.
	162.550	WX1	F3E	a	Weather and NOTSHIP broadcasts.

Notes Reference VHF:

“A” following a channel number means Simplex Operation on the ship station transmitting frequency.

“B” following a channel number means ship stations receive only the higher coast station transmitting frequency.

1.3 GENERAL INFORMATION ON MARINE COMMUNICATIONS AND TRAFFIC SERVICES CENTRE LISTINGS

- Transmit and receive frequencies are listed in kHz.
- The numbered areas mentioned in the remarks column of centres providing communications and special services are shown on the marine weather forecasts maps and are listed in detail under the heading “Weather Forecast Areas” in PART 5.
- Frequencies for which the J3E single sideband modes of emission are shown in the Marine Communications and Traffic Services Centre listings are designated by the carrier frequencies. The assigned frequencies are 1.4 kHz higher than the carrier frequencies listed. (This note also applies to the medium and high radiotelephone frequencies listed in the “Canadian Maritime Mobile Safety and Public Correspondence Communication Frequencies”, Section 1.2).

Table 1-3 - Legend for MCTS Centre Listings

Abbreviation/Acronym	Explanation
AIS	Automatic Identification System
CMB	Continuous Marine Broadcast
DF	Direction Finding
DSC	Digital Selective Calling
F1B	Radioteletype
F3E	Radiotelephony, Frequency Modulation
G2B	Phase modulation, digital information, automatic reception
H+	This symbol followed by a number indicates minutes past the hour.
HF NBDP	High Frequency Narrow-Band Direct-Printing Telegraphy
J3C	Facsimile – Single-sideband, Suppressed Carrier
J3E	Radiotelephony – Single-sideband, Suppressed Carrier
MCTS	Marine Communications and Traffic Services
MMSI	Maritime Mobile Service Identity
NAVTEX	Narrow Band Direct Printing telegraphy
SC	Ship Control (Canal and Locks operations)
UTC	Coordinated Universal Time

1.4 TELEPHONE/FACSIMILE/TELEX DIRECTORY**Table 1-4 - Telephone / Facsimile / Telex Directory**

Service	Telephone Number	Facsimile Number	Telex Number	Answer Back Code	MMSI
MCTS (call sign)					
Iqaluit, NU (VFF) <i>Service available in English and in French.</i>	867-979-0310 West 867-979-5269 East	867-979-4264	063-15529	NORDREG CDA	003160023
Prince Rupert, BC (VAJ)	250-627-3081 North 250-627-3082 South	250-624-9075			003160013
Victoria, BC (VAK)	250-363-6611	250-363-6556			003160011
VTS Offshore					
Prince Rupert, BC	250-627-3071				
NORDREG Canada					
IQALUIT, NU Operational from approximately mid-May until late December	867-979-5724	867-979-4264	063-15529	NORDREG CDA	003160023

Service	Telephone Number	Facsimile Number	Telex Number	Answer Back Code	MMSI
PRESCOTT, ON Operational from approximately late December until mid-May	613-925-4471	613-925-4519			
NAVAREA XVII and XVIII					
PRESCOTT, ON	613-925-0666	613-925-4519			

1.5 JOINT RESCUE COORDINATION CENTRE (JRCC)

JRCC Victoria, British Columbia

Telephone: 1-800-567-5111 British Columbia and Yukon
250-413-8933 Satellite, Local or out of area
727 Cellular

Email: jrcvictoria@sarnet.dnd.ca

JRCC Trenton, Ontario

Telephone: 1-800-267-7270 In Canada
613-965-3870 Satellite, Local or out of area

Facsimile: 613-965-7279

Email: jrcctrenton@sarnet.dnd.ca

1.6 REGIONAL OFFICE ADDRESSES (COVERING THE PACIFIC COAST AND WESTERN ARCTIC)

Regional Superintendent Marine Communications and Traffic Services

Fisheries and Oceans Canada
Canadian Coast Guard
Western Region
Victoria Coast Guard Base
25 Huron Street
Victoria BC V8V 4V9

Telephone: 250-363-8922

Email: mcts@dfo-mpo.gc.ca

Regional Superintendent Marine Communications and Traffic Services

Service available in English and in French

Fisheries and Oceans Canada
Canadian Coast Guard
Central and Arctic Region
101 Champlain Boulevard
Québec QC G1K 7Y7

Telephone: 418-648-5522

Facsimile: 418-648-4877

1.7 REGIONAL NOTICES TO SHIPPING (NOTSHIP) ISSUING AUTHORITIES

Canadian Coast Guard MCTS Regional Office

Victoria Coast Guard Base
25 Huron St.
Victoria BC V8V 4V9

Telephone: 250-363-8904

Email: mcts@df-mpo.gc.ca

Fisheries and Oceans Canada Canadian Coast Guard Iqaluit MCTS Centre

*Service available in English and in French
Operational from approximately mid-May until late December*

P.O. Box 189
Iqaluit NU X0A 0H0

"H" Series NOTSHIPS

Telephone: 867-979-0310

Facsimile: 867-979-4264

Email: lqamck01@innav.gc.ca

Website: <http://www.ccg-gcc.gc.ca/eng/CCG/Notship-Home>

"A" Series NOTSHIPS

Telephone: 867-979-5269

Facsimile: 867-979-4264

Email: lqaNordreg@innav.gc.ca

Website: <http://www.ccg-gcc.gc.ca/eng/CCG/Notship-Home>

PART 2 FACILITIES INFORMATION

2.1 MARINE COMMUNICATIONS AND TRAFFIC SERVICES CENTRE

2.1.1 Iqaluit, Nunavut

MMSI: 003160023

Call Sign: VFF

Hours: H24

Services in English and in French.

All communications with Canadian Coast Guard Marine Communications and Traffic Services Centres are recorded.

Open only from approximately mid-May until late-December.

Opening and closing will be announced by Notice to Shipping.

For Radio Services call Iqaluit Coast Guard Radio.

Coordinates

Mailing Address:

Fisheries and Oceans Canada
Canadian Coast Guard
Officer-in-Charge – MCTS Operations
Iqaluit MCTS Centre / NORDREG Canada
P.O. Box 189
Iqaluit NU X0A 0H0

Telephone: 867-979-0310 MCTS Operations (West)
867-979-5269 MCTS Operations (East)
867-979-5724 NORDREG Operations
867-979-5260 Officer-in-Charge (administration)

Facsimile: 867-979-4264 MCTS/NORDREG Operations

Telex (Telefax): 063-15529 NORDREG CDA

Email: Iqamck01@innav.gc.ca (West)
IQANORDREG@innav.gc.ca (East)

Public correspondence services are no longer available.

Table 2-1 – Iqaluit MCTS / VFF - Ship/Shore Communications

Sites located at	Channel	Frequencies		Remarks
		Transmit	Receive	
Iqaluit 63°43'52"N 068°32'32"W	Ch16 Ch26			This site is operational approximately mid-June to late-December.
	403 603 812 1201	2182J3E 2582J3E 4363J3E 6507J3E 8752J3E 13077J3E	2182 2206 4071 6206 8228 12230	

Sites located at	Channel	Frequencies		Remarks
		Transmit	Receive	
		4207.5F1B 6312.0F1B 8414.5F1B 12577.0F1B 16804.5F1B	4207.5 6312.0 8414.5 12577.0 16804.5	
		4177.5F1B 6268F1B 8376.5F1B 12520F1B 16695F1B	4177.5 6268 8376.5 12520 16695	
		4125J3E 6215J3E 8291J3E 12290J3E 16420J3E	4125 6215 8291 12290 16420	
Churchill 58°46'29"N 094°11'22"W	Ch16 Ch26			This site is operational only during navigation season; July 1 to October 31, approximately.
Killinek 60°25'27"N 064°50'30"W	403	2182J3E 2514J3E 2582J3E 4363J3E	2182 2118 2206 4071	This site is operational approximately early July to late December.
Coral Harbour 64°09'01"N 083°22'22"W	403 603 812 1201	2182J3E 2514J3E 2582J3E 4363J3E 6507J3E 8752J3E 13077J3E	2182 2118 2206 4071 6206 8228 12230	This site is operational approximately mid-July to late-October.
Resolute 74°44'47"N 095°00'11"W	Ch16 Ch26			This site is operational approximately mid-July to late-October.
	403 812	2182J3E 2582J3E 4363J3E 8752J3E	2182 2206 4071 8228	
			4207.5 6312.0 8414.5 12577.0 16804.5	
			4177.5 6268 8376.5 12520 16695	
			4125 6215 8291 12290 16420	

Sites located at	Channel	Frequencies		Remarks
		Transmit	Receive	
Hay River 60°50'27"N 115°46'12"W	403 601 826	4363J3E 5803J3E 6218.6J3E 6501J3E 8794J3E	4071 5803 6218.6 6200 8270	This site is operational approximately mid-May to late-October.
Yellowknife 62°25'45"N 114°24'44"W	Ch16 Ch85			This site is operational approximately mid-May to late-October.
Enterprise 60°36'30"N 116°13'13"W	Ch16 Ch26			This site is operational approximately mid-May to late-October.
Inuvik 68°19'30"N 133°35'47"W	403 601 826 1201	2182J3E 2558J3E 4363J3E 5803J3E 6218.6J3E 6501J3E 8794J3E 13077J3E	2182 2142 4071 5803 6218.6 6200 8270 12230	This site is operational approximately mid-May to late-October.
Parson's Lake 68°53'38"N 133°56'31"W	Ch16 Ch26			This site is operational approximately mid-May to late-October.
Cambridge Bay 69°06'53"N 105°01'11"W	Ch16 Ch26			This site is operational approximately early July to mid-October.
	403 601 826	2182J3E 2558J3E 4363J3E 5803J3E 6501J3E 8794J3E	2182 2142 4071 5803 6200 8270	

Table 2-2 – Iqaluit MCTS / VFF - Broadcasts

Time UTC	Site	Frequency or Channel	Contents
01:00	Resolute	3253J3C	Radiofacsimile: Weather Charts
	Iqaluit	7710J3C	• Marine Surface Analysis (Arctic).
	Inuvik	8456J3C	• Marine Wind Prognosis (Arctic).
01:10	Coral Harbour	2514J3E	Radiotelephony • Technical marine synopsis and forecasts for marine areas 155, 156, 157, 158, 162, 163, 311 and 312. • Following areas on request: 151, 152, 153, 154, 159, 160, 161, 164 and 310.
	Coral Harbour	6507J3E	• Notices to Shipping "Series A" for all NORDREG waters east of 106W and along the Labrador coast southward to 58N, including Hudson Strait, Hudson Bay, Ungava Bay, Foxe Basin, James Bay and Chesterfield Inlet to Baker Lake.

Time UTC	Site	Frequency or Channel	Contents
01:15	Inuvik	5803J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis for Western Arctic waters (if applicable for Mackenzie River and Great Slave Lake area). • Marine forecast for Great Slave Lake (Area 180). • Marine forecast for Mackenzie River (Area 110) and Mackenzie Delta. • ODAS Weather Buoys 45141 and 45150. • Notices to Shipping (H-Series).
	Hay River	4363J3E	
	Parson's Lake and Enterprise	Ch26	
	Yellowknife	Ch85	
02:00	Resolute	3253J3C	Radiofacsimile: Ice Charts <ul style="list-style-type: none"> • Transmitted from Resolute: Ice analysis: Baffin Bay, Approaches to Resolute, Resolute-Byam, Eureka Sound, McClure Strait, Parry Channel and Queen Maud Gulf. • Transmitted from Iqaluit: Ice analysis: Hudson Bay south, Hudson Bay north, Hudson Strait, Foxe Basin, Labrador Coast, Davis Strait, Baffin Bay. • Transmitted from Inuvik: Ice Analysis: Amundsen Gulf, Queen Maud Gulf, McClure Strait and Beaufort Sea/Alaskan Coast.
	Iqaluit	7710J3C	
	Inuvik	8456J3C	
02:35	Cambridge Bay	4363J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis for Western Arctic waters. • Forecasts for marine areas 111 to 122 inclusive. • Notices to Shipping "Series A" for all NORDREG waters west of Taloyoak.
	Inuvik	6218.6J3E	
03:00	Iqaluit	490F1B	NAVTEX: (S) French <ul style="list-style-type: none"> • Weather forecasts for marine areas 143, 144, 145, 147, 148, 149 and 150.
03:10	Iqaluit	518F1B	NAVTEX: (T) English <ul style="list-style-type: none"> • Weather forecasts for marine areas 143, 144, 145, 147, 148, 149 and 150.
03:30	Iqaluit	8416.5F1B	HF NBDP <ul style="list-style-type: none"> • METAREA bulletins for METAREAS XVII and XVIII within Canadian waters. • NAVAREA warnings for NAVAREAs XVII and XVIII.
06:00	Iqaluit	3253J3C	Radiofacsimile: Weather Charts <ul style="list-style-type: none"> • Marine Surface Analysis (Arctic). • Marine Wind Prognosis (Arctic).
	Resolute	7710J3C	
	Inuvik	4292J3C	

Time UTC	Site	Frequency or Channel	Contents
07:00	Iqaluit	3253J3C	Radiofacsimile: Ice Charts <ul style="list-style-type: none"> Transmitted from Iqaluit: Ice Analysis: Hudson Bay south, Hudson Bay north, Hudson Strait, Foxe Basin, Labrador Coast, Davis Strait and Baffin Bay. Transmitted from Resolute: Ice Analysis: Baffin Bay, Approaches to Resolute, Resolute-Byam, Eureka Sound, McClure Strait, Parry Channel and Queen Maud Gulf. Transmitted from Inuvik: Ice Analysis: Amundsen Gulf, Queen Maud Gulf, McClure Strait and Beaufort Sea/Alaskan Coast.
	Resolute	7710J3C	
	Inuvik	4292J3C	
07:00	Iqaluit	490F1B	NAVTEX: (S) French <ul style="list-style-type: none"> Safety Notices to Shipping "Series A" for NORDREG waters bound by marine areas: 143, 144, 145, 147, 148, 149 and 150. Ice hazard bulletin for marine areas 143, 144, 145, 147, 148, 149 and 150.
07:10	Iqaluit	518F1B	NAVTEX: (T) English <ul style="list-style-type: none"> Safety Notices to Shipping "Series A" for NORDREG waters bound by marine areas 143, 144, 145, 147, 148, 149 and 150. Ice hazard bulletin for marine areas 143, 144, 145, 147, 148, 149 and 150.
10:00	Resolute	3253J3C	Radiofacsimile: Weather Charts <ul style="list-style-type: none"> Marine Surface Analysis (Arctic). Marine Wind Prognosis (Arctic).
	Iqaluit	7710J3C	
	Inuvik	8456J3C	
11:00	Resolute	3253J3C	Radiofacsimile: Ice Charts <ul style="list-style-type: none"> Transmitted from Resolute: Ice Analysis: Baffin Bay, Approaches to Resolute, Resolute-Byam, Eureka Sound, McClure Strait, Parry Channel and Queen Maud Gulf. Transmitted from Iqaluit: Ice Analysis: Hudson Bay south, Hudson Bay north, Hudson Strait, Foxe Basin, Labrador Coast, Davis Strait and Baffin Bay. Transmitted from Inuvik: Ice Analysis: Amundsen Gulf, Queen Maud Gulf, McClure Strait and Beaufort Sea/Alaskan Coast.
	Iqaluit	7710J3C	
	Inuvik	8456J3C	
11:00	Iqaluit	490F1B	NAVTEX: (S) French <ul style="list-style-type: none"> Weather forecast for marine areas 143, 144, 145, 147, 148, 149 and 150.
11:10	Iqaluit	518F1B	NAVTEX: (T) English <ul style="list-style-type: none"> Weather forecast for marine areas 143, 144, 145, 147, 148, 149 and 150.
12:40	Resolute	2582J3E	Radiotelephony <ul style="list-style-type: none"> Technical marine synopsis and forecasts for marine areas 125, 135, 136, 137 and 138. Notices to Shipping "A Series" for all NORDREG waters bound by Shipping Safety Control Zones 1, 2, 3, 5, 6, 9 and 13.
	Resolute	4363J3E	

Time UTC	Site	Frequency or Channel	Contents
13:15	Inuvik	5803J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis for Western Arctic waters (if applicable for Mackenzie River and Great Slave Lake area). • Marine forecast for Great Slave Lake (Area 180). • Marine forecast for Mackenzie River (Area 110) and Mackenzie Delta. • ODAS Weather Buoys 45141 and 45150. • Notices to Shipping (H-Series).
	Hay River	4363J3E	
	Parson's Lake and Enterprise	Ch26	
	Yellowknife	Ch85	
13:20	Coral Harbour	2514J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and forecasts for marine areas 155, 156, 157, 158, 162, 163, 311 and 312. • Following areas on request: 151, 152, 153, 154, 159, 160, 161, 164 and 310. • Notices to Shipping "A Series" for all NORDREG waters east of 106W and along the Labrador coast southward to 58N, including Hudson Strait, Hudson Bay, Ungava Bay, Foxe Basin, James Bay and Chesterfield Inlet to Baker Lake.
	Coral Harbour	6507J3E	
14:10	Killinek	2514J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and forecasts for marine areas 139 to 150 and 228, 229 and 230. • Following marine areas on request: 137 and 138. • Notices to Shipping "A Series" for all NORDREG waters east of 106W and along the Labrador coast southward to 58N bound by Shipping Safety Control Zones 9, 10 and 15, including Ungava Bay.
	Iqaluit	2582J3E	
	Iqaluit	4363J3E	
	Iqaluit	6507J3E	
14:35	Cambridge Bay	4363J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis for Western Arctic waters. • Forecasts for marine areas 111 to 122 inclusive. • Notices to Shipping "A Series" for all NORDREG waters west of Taloyoak.
	Inuvik	6218.6J3E	
15:00	Iqaluit	490F1B	NAVTEX: (S) French <ul style="list-style-type: none"> • Weather forecasts for marine areas 143, 144, 145, 147, 148, 149 and 150.
15:10	Iqaluit	518F1B	NAVTEX: (T) English <ul style="list-style-type: none"> • Weather forecasts for marine areas 143, 144, 145, 147, 148, 149 and 150.
15:30	Iqaluit	8416.5F1B	HF NBDP <ul style="list-style-type: none"> • METAREA bulletins for METAREAS XVII and XVIII within Canadian waters. • NAVAREA warnings for NAVAREAS XVII and XVIII.

Time UTC	Site	Frequency or Channel	Contents
17:05	Cambridge Bay	4363J3E	Radiotelephony <ul style="list-style-type: none"> • Ice boundary information. • Ice forecasts for marine areas 111 to 122 and 125, 135, 136, 137, 138, 139, 140, 141, 142, 144, 145, 146, 147, 148, 149, 150, 155, 156, 157, 158, 162, 163, 228, 229, 230, 311 and 312 for Hudson Bay and Foxe Basin.
	Inuvik	6218.6J3E	
	Coral Harbour / Killinek	2514J3E	
	Iqaluit/Resolute	2582J3E	
	Iqaluit/Resolute	4363J3E	
	Coral Harbour/Iqaluit	6507J3E	
19:00	Iqaluit	490F1B	NAVTEX: (S) French <ul style="list-style-type: none"> • Safety Notices to Shipping "A Series" for NORDREG waters bound by marine areas 143, 144, 145, 147, 148, 149 and 150. • Ice hazard bulletin for marine areas 143, 144, 145, 147, 148, 149 and 150.
19:10	Iqaluit	518F1B	NAVTEX: (T) English <ul style="list-style-type: none"> • Safety Notices to Shipping "A Series" for NORDREG waters bound by marine areas 143, 144, 145, 147, 148, 149 and 150. • Ice hazard bulletin for marine areas 143, 144, 145, 147, 148, 149 and 150.
21:00	Iqaluit	3253J3C	Radiofacsimile: Weather Charts <ul style="list-style-type: none"> • Marine Surface Analysis (Arctic). • Marine Wind Prognosis (Arctic).
	Resolute	7710J3C	
	Inuvik	4292J3C	
22:00	Iqaluit	3253J3C	Radiofacsimile: Ice Charts <ul style="list-style-type: none"> • Transmitted from Iqaluit: Ice Analysis: Hudson Bay south, Hudson Bay north, Hudson Strait, Foxe Basin, Labrador Coast, Davis Strait, Baffin Bay. • Transmitted from Resolute: Ice Analysis: Baffin Bay, Approaches to Resolute, Resolute-Byam, Eureka Sound, McClure Strait, Parry Channel and Queen Maud Gulf. • Transmitted from Inuvik: Ice Analysis: Amundsen Gulf, Queen Maud Gulf, McClure Strait and Beaufort Sea/Alaskan Coast.
	Resolute	7710J3C	
	Inuvik	4292J3C	
22:35	Killinek	2514J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and forecasts for marine areas 139 to 150 and 228, 229 and 230. • Following marine areas on request: 137 and 138. • Notices to Shipping "A Series" for all NORDREG waters east of 106W and along the Labrador coast southward to 58N bound by Shipping Safety Control Zones 9, 10 and 15, including Ungava Bay.
	Iqaluit	2582J3E	
	Iqaluit	4363J3E	
	Iqaluit	6507J3E	
23:00	Iqaluit	490F1B	NAVTEX: (S) French <ul style="list-style-type: none"> • Weather forecast for marine areas 143, 144, 145, 147, 148, 149 and 150.

Time UTC	Site	Frequency or Channel	Contents
23:10	Iqaluit	518F1B	NAVTEX: (T) English <ul style="list-style-type: none"> Weather forecast for marine areas 143, 144, 145, 147, 148, 149 and 150.
23:10	Resolute	2582J3E	Radiotelephony: <ul style="list-style-type: none"> Technical marine synopsis and forecasts for marine areas 125, 135, 136, 137 and 138. Notices to Shipping "A Series" for all NORDREG waters bound by Shipping Safety Zones 1, 2, 3, 5, 6, 9 and 13.
	Resolute	4363J3E	

Iqaluit MCTS /VFF – Radio Facsimile Transmission Details:

Modulation: J3C (FM)

Drum speed: 120 rpm

Index of cooperation: 576

Power: 1 KW

Frequencies: 3251.1 kHz, 7708.1 kHz (USB)

Frequencies: 3253 kHz, 7710 kHz (FSK)

Frequencies: 4290.1 kHz, 8454.1 kHz (USB)

Frequencies: 4292 kHz, 8456 kHz (FSK)

For correct reception of this broadcast on WMO standard facsimile recorders requiring 2300 Hz for White and 1500 Hz for Black with a 1900 Hz centre frequency, radio receivers should be tuned in the UPPER SIDEBAND MODE to the ABOVE frequencies.

2.1.2 Prince Rupert, British Columbia

MMSI: 003160013

Call Sign: VAJ

Hours: H24

Services in English only

All communications with Canadian Coast Guard Marine Communications and Traffic Services Centres are recorded.

For Radio Services, call Prince Rupert Coast Guard Radio.

For Vessel Traffic Services, call Prince Rupert Traffic – refer to PART 3.

Coordinates

Mailing Address:

Fisheries and Oceans Canada
Canadian Coast Guard
Officer-in-Charge – MCTS Operations
Prince Rupert MCTS Centre
Bag 4444
Prince Rupert BC V8J 4K2

Telephone: 250-627-3074 MCTS Operations/Supervisor
250-627-3077 Officer-in-Charge
250-624-9009 Continuous Marine Broadcast (CMB North)
250-726-3415 Continuous Marine Broadcast (CMB South)
250-627-3081 Marine Emergency / Safety - North
250-627-3082 Marine Emergency / Safety - South

Facsimile: 250-624-9075 MCTS Operations

Email: mctsprincerupert@dfo-mpo.gc.ca

Website: <http://www.ccg-gcc.gc.ca/Marine-Communications/Home>

VHF Direction Finding Advisory Service:

A VHF/DF advisory service is available to vessels within range of the receiver sites located at Mount Hays, Dundas Island, Cumshewa, Van Inlet, Naden Harbour, Mount Gil, Klemtu and Calvert Island. Information concerning position, bearing and distance information may be provided for use at the discretion of the user.

Table 2-3 - Prince Rupert MCTS / VAJ - Ship/Shore Communications

Sites located at	Channel	Frequencies		Remarks
		Transmit	Receive	
Digby Island 54°17'51"N 130°25'06"W		2182J3E 2054J3E 4125J3E	2182 2054 4125	
Hunter Point 53°15'31"N 132°42'53"W		2182J3E 2054J3E	2182 2054	
Barry Inlet 52°34'30"N 131°45'13"W	Ch11 Ch16 Ch26 Ch83A			

Sites located at	Channel	Frequencies		Remarks
		Transmit	Receive	
Cumshewa 53°09'33"N 131°59'47"W	Ch11 Ch16 Ch70 Ch83A Ch84			VHF Direction Finding service is available.
Dundas Island 54°31'16"N 130°54'55"W	Ch16 Ch22A Ch70 Ch71 Ch83A Ch84			VHF Direction Finding service is available.
Kitimat 54°03'20"N 128°37'51"W	Ch11 Ch16 Ch83A			
Klemtu 52°34'45"N 128°33'45"W	Ch11 Ch16 Ch70 Ch83A Ch84			VHF Direction Finding service is available.
Rose Inlet 52°13'18"N 131°12'54"W	Ch11 Ch16 Ch26 Ch70 Ch83A			
Mount Dent 55°12'58"N 129°59'18"W	Ch16 Ch84			CMB site is solar powered and is available during winter months upon request.
Mount Gil 53°15'46"N 129°11'42"W	Ch11 Ch16 Ch26 Ch70 Ch83A			VHF Direction Finding service is available.
Mount Hays 54°17'12"N 130°18'49"W	Ch11 Ch16 Ch70 Ch71 Ch83A Ch84			VHF Direction Finding service is available.
Naden Harbour 53°57'18"N 132°56'30"W	Ch11 Ch16 Ch22A Ch70 Ch71 Ch83A Ch84			VHF Direction Finding service is available.
Van Inlet 53°15'08"N 132°32'31"W	Ch11 Ch16 Ch26 Ch83A			VHF Direction Finding service is available.

Sites located at	Channel	Frequencies		Remarks
		Transmit	Receive	
Calvert Island 51°35'21"N 128°00'43"W	Ch11 Ch16 Ch70 Ch83A Ch84			VHF Direction Finding service is available.
Amphitrite Point 48°55'31"N 125°32'25"W		2182J3E 2054J3E 4125J3E		
Eliza Dome 49°52'24"N 127°07'13"W	Ch16 Ch70 Ch74 Ch83A Ch84			
Mount Ozzard 48°57'34"N 125°29'30"W	Ch16 Ch22A Ch70 Ch74 Ch83A Ch84			
Port Alberni 49°13'07"N 124°48'43"W	Ch16 Ch26 Ch74 Ch83A			
Estevan Point 49°22'59"N 126°32'00"W	Ch16 Ch83A			
			2182 2054 4125	
Nootka 49°35'36"N 126°36'52"W	Ch16 Ch26 Ch74 Ch83A			
Esperanza 49°50'32"N 126°48'22"W	Ch16 Ch83A			
Holberg 50°38'24"N 128°07'34"W	Ch16 Ch26 Ch70 Ch74 Ch83A			

Table 2-4 - Prince Rupert MCTS / VAJ - Broadcasts

Time PST	Site	Frequency or Channel	Contents
00:30	Digby Island	518F1B	NAVTEX: (D) <ul style="list-style-type: none"> • Marine forecast areas 2, 3, 4. • Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby, South Moresby.
01:10	Amphitrite Point	518F1B	NAVTEX: (H) <ul style="list-style-type: none"> • Offshore Notices to Shipping. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood.
04:30	Digby Island	518F1B	NAVTEX: (D) <ul style="list-style-type: none"> • Marine forecast areas 2, 3, 4. • Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby, South Moresby.
04:50	Amphitrite Point	2054J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast 1, 5, 6, 7. • Wave height forecast areas 1, 5, 6, 7. • Extended marine forecast areas 1, 5, 6, 7. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood. • Offshore Notices to Shipping. • Notices to Fish Harvesters.
05:10	Amphitrite Point	518F1B	NAVTEX: (H) <ul style="list-style-type: none"> • Marine forecast 1, 5, 6, 7. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood.
05:15	Digby Island Hunter Point	2054J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 2, 3, 4. • Wave height forecast areas 2, 3, 4. • Extended marine forecast areas 2, 3, 4. • Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby, South Moresby. • Offshore Notices to Shipping. • Notices to Fish Harvesters.
08:30	Digby Island	518F1B	NAVTEX: (D) <ul style="list-style-type: none"> • Offshore Notices to Shipping.
09:10	Amphitrite Point	518F1B	NAVTEX: (H) <ul style="list-style-type: none"> • Marine forecast areas 1, 5, 6, 7. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood.

Time PST	Site	Frequency or Channel	Contents
10:50	Amphitrite Point	2054J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 1, 5, 6, 7. • Wave height forecast areas 1, 5, 6, 7. • Extended marine forecast areas 1, 5, 6, 7. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood. • Offshore Notices to Shipping. • Notices to Fish Harvesters.
11:15	Digby Island Hunter Point	2054J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 2, 3, 4. • Wave height forecast areas 2, 3, 4. • Extended marine forecast areas 2, 3, 4. • Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby, South Moresby. • Offshore Notices to Shipping. • Notices to Fish Harvesters.
12:30	Digby Island	518F1B	NAVTEX: (D) <ul style="list-style-type: none"> • Marine forecast areas 2, 3, 4. • Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby, South Moresby.
13:10	Amphitrite Point	518F1B	NAVTEX: (H) <ul style="list-style-type: none"> • Notices to Shipping. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood.
16:30	Digby Island	518F1B	NAVTEX: (D) <ul style="list-style-type: none"> • Marine forecast areas 2, 3, 4. • Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby, South Moresby.
16:50	Amphitrite Point	2054J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 1, 5, 6, 7. • Wave height forecast areas 1, 5, 6, 7. • Extended marine forecast areas 1, 5, 6, 7. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood. • Offshore Notices to Shipping. • Notices to Fish Harvesters.
17:10	Amphitrite Point	518F1B	NAVTEX: (H) <ul style="list-style-type: none"> • Marine forecast areas 1, 5, 6, 7. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood. • Offshore Notices to Shipping.

Time PST	Site	Frequency or Channel	Contents
17:15	Digby Island Hunter Point	2054J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 2, 3, 4. • Wave height forecast areas 2, 3, 4. • Extended marine forecast areas 2, 3, 4. • Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby, South Moresby. • Offshore Notices to Shipping. • Notices to Fish Harvesters.
20:30	Digby Island	518F1B	NAVTEX: (D) <ul style="list-style-type: none"> • Offshore Notices to Shipping.
21:10	Amphitrite Point	518F1B	NAVTEX: (H) <ul style="list-style-type: none"> • Marine forecast areas 1, 5, 6, 7. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood. • Offshore Notices to Shipping.
22:50	Amphitrite Point	2054J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 1, 5, 6, 7. • Wave height forecast areas 1, 5, 6, 7. • Extended marine forecast areas 1, 5, 6, 7. • Ocean Buoy Reports: South Nomad, South Brooks, La Perouse Bank, East Dellwood. • Offshore Notices to Shipping. • Notices to Fish Harvesters.
23:15	Digby Island Hunter Point	2054J3E	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 2, 3, 4. • Wave height forecast areas 2, 3, 4. • Extended marine forecast areas 2, 3, 4. • Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby, South Moresby. • Offshore Notices to Shipping. • Notices to Fish Harvesters.

Time PST	Site	Frequency or Channel	Contents
*Continuous	Mount Hays Mount Dent Rose Inlet Kitimat	Ch21B	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 2, 3, 4, 5, 13, 14, 15, 16, 17. • Wave height forecast areas 2, 3, 4, 5, 14, 15, 16. • Extended marine forecast areas 2, 3, 4, 5, 13, 14, 15, 16, 17.
	Klemtu Van Inlet	WX1	Automated Weather Reports: Grey Islet, Lucy Island, Holland Rock, Bonilla Island, Rose Spit, Kindakun Rock, Prince Rupert, Langara Island, Sandspit, Cumshewa Island, Cape St. James, Cathedral Point, Sartine Island, Herbert Island.
	Barry Inlet Dundas Island Mount Gil Calvert Island	WX2	Ocean Buoy Reports: North Nomad, Middle Nomad, West Dixon Entrance, Central Dixon Entrance, North Hecate Strait, South Hecate Strait, West Moresby, South Moresby, Nanakwa Shoal, West Sea Otter, East Dellwood. Lighthouse Weather Reports: Green Island, Triple Island, Bonilla Island, Langara Island, Boat Bluff, McInnes Island, Ivory Island, Dryat Point, Addenbroke Island, Egg Island, Cape Scott, Pine Island.
	Cumshewa Naden Harbour	WX3	<ul style="list-style-type: none"> • Safety Notices to Shipping only. • Notices to Fish Harvesters – Weekly Shellfish Updates (every Tuesday).
**Continuous	Mount Ozzard Esperanza Holberg	Ch21B	Radiotelephony <ul style="list-style-type: none"> • Technical marine synopsis and marine forecast areas 1, 5, 6, 7, 8, 13, 14. • Wave height forecast areas 1, 5, 6, 7, 14. • Extended marine forecast areas 1, 5, 6, 7, 8, 13, 14.
	Eliza Dome	WX1	Automated Weather Reports: Cape St. James, Herbert Island, Sartine Island, Solander Island, Sheringham Point, Race Rocks, Discovery Island.
	Port Alberni Nootka	WX2	Ocean Buoy Reports: West Sea Otter, East Dellwood, South Brooks, La Perouse, South Moresby. Local and Lighthouse Weather Reports: Trial Island, Carmanah Point, Pachena Point, Cape Beale, Lennard Island, Estevan Point, Nootka, Quatsino, Cape Scott, Pine Island, Egg Island, McInnes Island.
	Estevan Point	WX3	<ul style="list-style-type: none"> • Safety Notices to Shipping only. • Notices to Fish Harvesters – Weekly Shellfish Updates (every Tuesday).

* CMB interrupted during live MF broadcasts and at 07:05, 13:05 and 20:05 for all Notices to Shipping and Notices to Fish Harvesters.

** CMB interrupted during live MF broadcasts and at 07:15, 13:15 and 20:15 for all Notices to Shipping and Notices to Fish Harvesters.

2.1.3 Victoria, British Columbia

MMSI: 003160011

Call Sign: VAK

Hours: H24

Services in English only

All communications with Canadian Coast Guard Marine Communications and Traffic Services Centres are recorded.

For Radio Services, call Victoria Coast Guard Radio.

For Vessel Traffic Services, call Victoria Traffic – refer to PART 3.

Coordinates

Mailing Address:

Fisheries and Oceans Canada
Canadian Coast Guard
Officer-in-Charge – MCTS Operations
Victoria MCTS Centre
Institute of Ocean Sciences
9860 West Saanich Road
P.O. Box 6000
Sidney BC V8L 4B2

Telephone: 250-363-6611 MCTS Operations
1-800-661-9202 Toll Free MCTS Operations (within B.C. only)
250-363-6818 Officer-in-Charge
250-363-6836 Administration
250-363-6333 Shift Supervisor
250-363-6880 Continuous Marine Broadcast (CMB) – Mount Helmcken
250-363-6492 Continuous Broadcast (CMB) – Bowen Island/Mount Parke
604-666-3655 Continuous Broadcast (CMB) – Bowen Island/Mount Parke
250-339-0748 Continuous Marine Broadcast (CMB) - Mid-Island Area
250-974-5305 Continuous Marine Broadcast (CMB) – North Island Area

Facsimile: 250-363-6556

Email: mctsvictoria@dfo-mpo.gc.ca

Website: <http://www.ccg-gcc.gc.ca/Marine-Communications/Home>

VHF Direction Finding Advisory Service:

A VHF/DF advisory service is available to vessels within range of the Bowen Island, Mount Parke, Mount Newton, Mount Helmcken receiver sites. Information concerning position, bearing and distance information may be provided for use at the discretion of the user.

Table 2-5 – Victoria MCTS / VAK - Ship/Shore Communications

Sites located at	Channel	Frequencies		Remarks
		Transmit	Receive	
Annacis Island 49°11'35"N 122°55'09"W	Ch16 Ch26 Ch70 Ch74 Ch83A			
Bowen Island 49°20'41"N 123°23'13"W	Ch11 Ch16 Ch70 Ch74 Ch83A Ch84			VHF Direction Finding service is available.
Gabriola Island 49°09'11"N 123°50'35"W	Ch11 Ch16 Ch83A			
Mount Parke 48°50'23"N 123°17'41"W	Ch11 Ch16 Ch26 Ch70 Ch74 Ch83A			VHF Direction Finding service is available.
Mount Newton 48°36'48"N 123°26'35"W	Ch11 Ch16 Ch70 Ch83A Ch84			VHF Direction Finding service is available.
Mount Helmcken 48°24'07"N 123°34'17"W	Ch11 Ch16 Ch70 Ch83A Ch84			VHF Direction Finding service is available.
Watts Point (Howe Sound) 49°38'54"N 123°12'36"W	Ch12 Ch16 Ch26 Ch70 Ch83A			
Vancouver 49°17'05"N 123°06'44"W	Ch12 Ch16 Ch26 Ch83A			
Cape Lazo 49°42'24"N 124°51'41"W	Ch16 Ch26 Ch71 Ch83A			

Sites located at	Channel	Frequencies		Remarks
		Transmit	Receive	
Discovery Mountain 50°19'25"N 125°22'16"W	Ch16 Ch70 Ch71 Ch83A Ch84			
Alert Bay 50°35'12"N 126°55'28"W	Ch16 Ch26 Ch71 Ch83A			
Port Hardy 50°41'35"N 127°41'53"W	Ch16 Ch70 Ch71 Ch83A Ch84			
Texada Island 49°41'47"N 124°26'07"W	Ch16 Ch70 Ch71 Ch83A Ch84			

Table 2-6 - Victoria MCTS / VAK - Broadcasts

Time PST	Site	Frequency or Channel	Contents
07:10	Mount Parke	Ch21B	Radiotelephony <ul style="list-style-type: none"> All Notices to Shipping. Notices to Fish Harvesters - Weekly shellfish update (every Tuesday).
	Watts Point	WX1	
	Bowen Island Mount Helmcken	WX3	
07:20	Texada Island Alert Bay	WX1	Radiotelephony <ul style="list-style-type: none"> All Notices to Shipping. Notices to Fish Harvesters - Weekly shellfish update (every Tuesday).
	Port Hardy	WX3	
	Discovery Mountain Cape Lazo	Ch21B	
13:10	Mount Parke	Ch21B	Radiotelephony <ul style="list-style-type: none"> All Notices to Shipping. Notices to Fish Harvesters.
	Watts Point	WX1	
	Bowen Island Mount Helmcken	WX3	

Time PST	Site	Frequency or Channel	Contents
13:20	Texada Island Alert Bay	WX1	Radiotelephony <ul style="list-style-type: none"> All Notices to Shipping. Notices to Fish Harvesters.
	Port Hardy	WX3	
	Discovery Mountain Cape Lazo	Ch21B	
20:20	Texada Island Alert Bay	WX1	Radiotelephony <ul style="list-style-type: none"> All Notices to Shipping. Notices to Fish Harvesters.
	Port Hardy	WX3	
	Discovery Mountain Cape Lazo	Ch21B	
21:10	Mount Parke	Ch21B	Radiotelephony <ul style="list-style-type: none"> All Notices to Shipping. Notices to Fish Harvesters.
	Watts Point	WX1	
	Bowen Island Mount Helmcken	WX3	
Continuous Interrupted during live broadcasts	Mount Parke	Ch21B	Radiotelephony <ul style="list-style-type: none"> Safety Notices to Shipping only. Technical marine synopsis and marine forecast areas 8, 9, 10, 11. Extended marine forecast areas 7, 8, 9, 10, 11. Automated Weather Reports: Sheringham Point, Race Rocks, Victoria/Gonzales Point, Discovery Island, Kelp Reef, Saturna Island, Sandheads, Point Atkinson, Pam Rocks, Entrance Island, Ballenas Island, Sisters Islet. Ocean Buoy Report: Halibut Bank. Lighthouse Weather Reports: Chrome Island, Merry Island, Entrance Island, Trial Island. Local Weather Reports: Tsawwassen. <ul style="list-style-type: none"> Fraser River Salmon Fishery Information.
	Watts Point	WX1	
	Bowen Island	WX3	

Time PST	Site	Frequency or Channel	Contents
Continuous Interrupted during live broadcasts	Mount Helmcken	WX3	Radiotelephony <ul style="list-style-type: none"> • Safety Notices to Shipping only. • Technical marine synopsis and marine forecast areas 7, 8, 9, 10, 11. • Wave height forecast area 7. • Extended marine forecast areas 7, 8, 9, 10, 11. Automated Weather Reports: Sheringham Point, Race Rocks, Victoria/Gonzales Point, Discovery Island, Kelp Reef, Saturna Island, Sandheads. Ocean Buoy Report: La Perouse Bank. Local Lighthouse Weather Reports: Estevan Point, Lennard Island, Amphitrite Point, Cape Beale, Pachena Point, Carmanah Point, Trial Island. Automated Weather Reports for Juan de Fuca Strait: Cape Flattery, "JA" Buoy, Hein Bank, Smith Island, Ogden Point.
Continuous North Island Interrupted during live broadcasts	Alert Bay	WX1	Radiotelephony <ul style="list-style-type: none"> • Safety Notices to Shipping only. • Technical marine synopsis and marine forecast areas 5, 6, 11, 12, 13, 14. • Wave height forecast areas 5, 6, 14. • Extended marine forecast areas 5, 6, 11, 12, 13, 14.
	Port Hardy	WX3	Automated Weather Reports: Fanny Island, Herbert Island, Cape St. James, Sartine Island, Solander Island. Ocean Buoy Reports: South Hecate Strait, South Moresby, East Dellwood, West Sea Otter, South Brooks. Lighthouse Weather Reports: McInnes Island, Addenbroke Island, Egg Island, Pine Island, Scarlett Point, Pulteney Point, Chatham Point, Cape Scott, Quatsino.
Continuous Mid-Island Interrupted during live broadcasts	Texada Island	WX1	Radiotelephony <ul style="list-style-type: none"> • Safety Notices to Shipping only. • Technical marine synopsis and marine forecast areas 11, 12, 13. • Extended marine forecast areas 11, 12, 13.
	Discovery Mountain Cape Lazo	Ch21B	Automated Weather Reports: Fanny Island, Grief Point, Sisters Islet, Ballenas Island, Entrance Island. Ocean Buoy Reports: Sentry Shoal, Halibut Bank. Local and Lighthouse Weather Reports: Chatham Point, Cape Mudge, Cape Lazo, Chrome Island, Merry Island, Entrance Island.

2.2 BRIDGE OPERATIONS

Table 2-7 - Pacific Coast

Name Coordinates Call Sign	Class of Service	Channel	Remarks
Johnson Street Bridge Victoria Harbour 48°25'40"N 123°21'52"W VAH20	SC	12	Operated by the City of Victoria, BC. Ship Traffic control only.
Marpole Railway Bridge, BC 49°12'00"N 123°07'31"W VGC248	SC	16 74 06 08	Operated by <i>Canadian Pacific Railway</i> Note: In operation from 07:30 to 15:00 local time.
New Westminster Railway Bridge, BC 49°12'32"N 122°53'25"W XLZ35	SC	16 11 12 74	Operated by Department of Public Works. Ship traffic control only.
Queensboro Railway Bridge, BC 49°11'51"N 122°55'23"W XJJ62	SC	16 74 06 08	Operated by <i>BC Southern Railway</i> .
Second Narrows Railway Bridge 49°17'42"N 123°01'27"W CJU52	SC	12	Operated by <i>Canadian National Railway</i> . Ship traffic control only.

Note: See current "Sailing Directions" for a list of bridges that require radio contact for opening.

Figure 2-1 - MCTS: Pacific Region

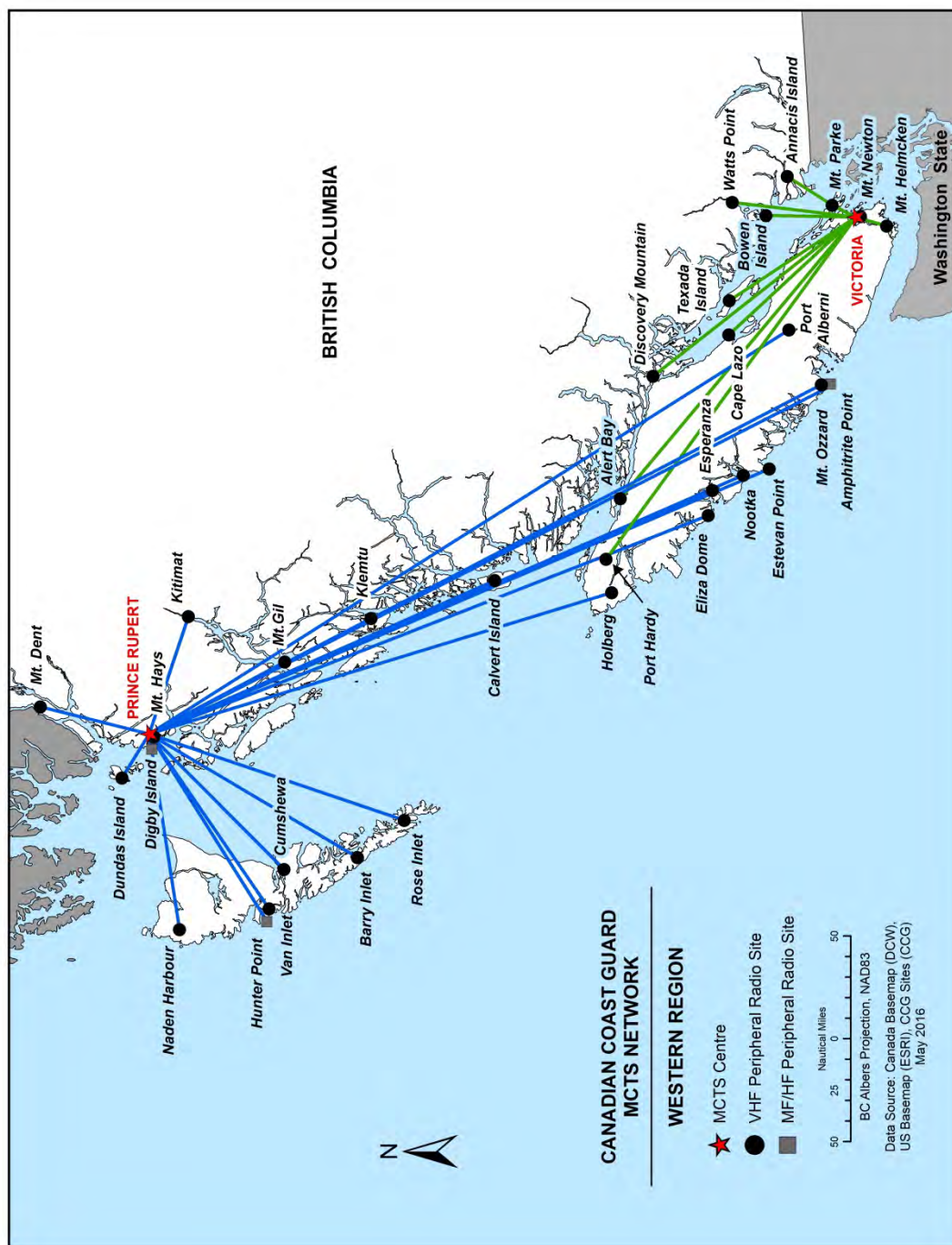
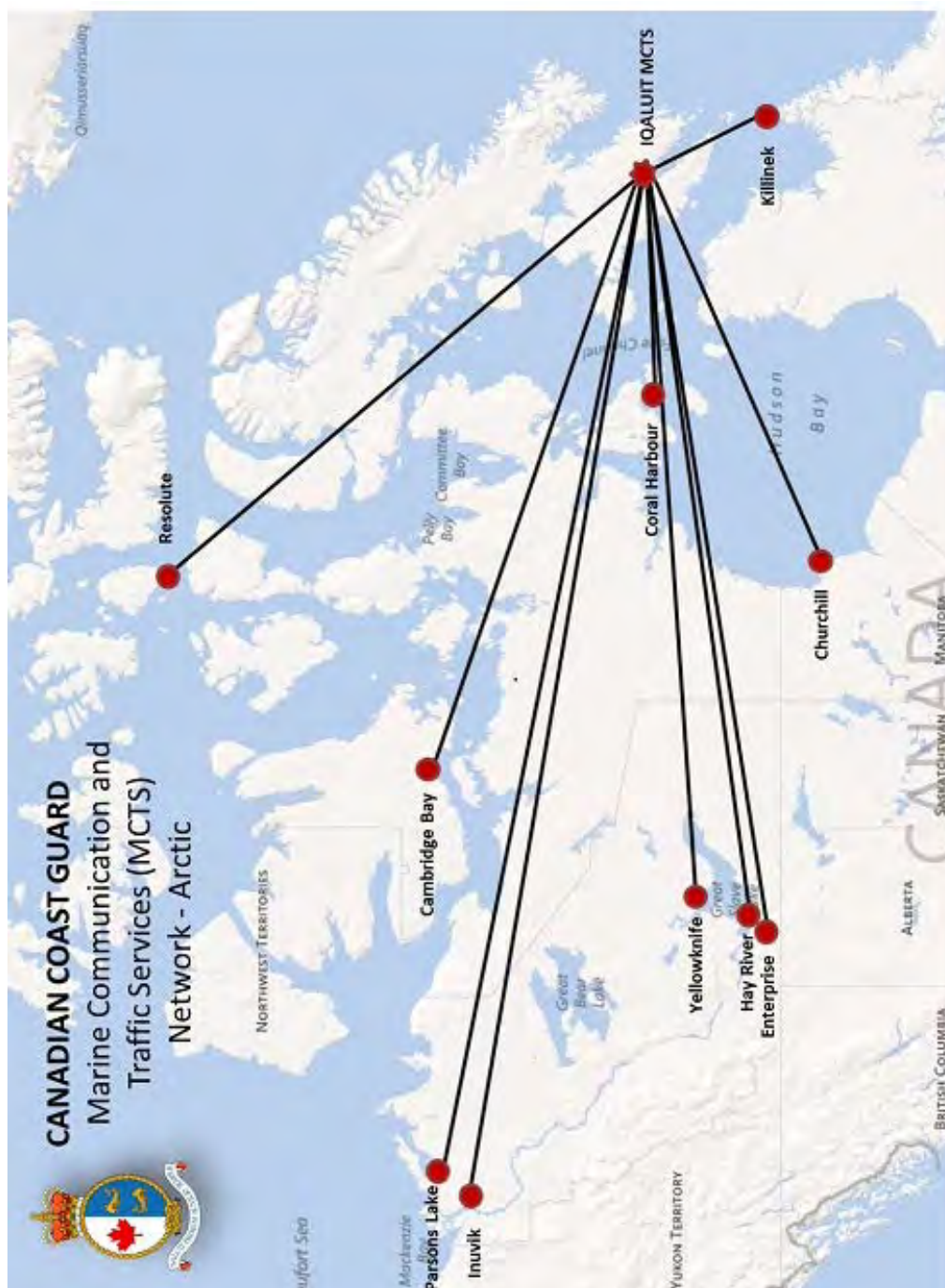


Figure 2-2 - MCTS: Arctic



2.3 RADIO BEACONS STATIONS CONTINUOUSLY IN OPERATIONS

Table 2-8 - Pacific Coast (all stations located in British Columbia)

Name / Location	Frequency kHz	Range Nautical Miles	Identifier	Remarks
Active Pass 48°52'26"N 123°17'23"W	378	50	• — (A) • — — • (P)	Open year round. Caution: bearing error could result from coastal refraction. (NAV Canada).
Dead Tree Point 53°21'01"N 131°56'23"W	248	25	— — • • (Z) — — • • (Z) • — — • (P)	Open year round (NAV Canada).
Masset 54°01'54"N 132°07'38"W	278	25	• — — — — (1) • • — (U)	Open year round (NAV Canada).
Prince Rupert 54°15'49"N 130°25'20"W	218	100	• — — • (P) • — • (R)	Open year round (NAV Canada).
Sandspit (The NAV Canada operated Sandspit radio beacon on 368 kHz is not the same one used for DGPS.) 53°11'48"N 131°46'33"W	368	75	— — • • (Z) • — — • (P)	Open year round. Caution: bearing error could result from coastal refraction. (NAV CANADA).
Tofino 49°02'54"N 125°42'16"W	359	50	— • — — (Y) • — (A) — — • • (Z)	Open year round. Caution: bearing error could result from coastal refraction. (NAV Canada).

2.4 RADAR BEACON (RACONS)

2.4.1 Pacific Coast

Table 2-9 - All Stations Located in British Columbia, excluding Juan De Fuca

Name Location	Range Nautical Miles	Arc Degrees	Identifier	Remarks
Alexandra Bank Bifurcation Light Buoy Dax 54°14'08.1"N 130°34'06.1"W	15	360	— • — (K)	Open year round.
Billard Rock Whistle Buoy « M3 » Quatsino Sound 50°25'47.2"N 127°57'47.7"W	15	360	— — • (G)	Open year round.
Burrard Inlet Cautionary Light Buoy « QB » 49°19'02.2"N 123°12'04.5"W	15	360	— • — (K)	Open year round.
Butterworth Rocks 54°14'08"N 130°58'30"W (NAD 27)	15	360	— • • — (X)	Open year round.
Canoe Pass Light and Bell Buoy « T14 » 49°02'17.4"N 123°15'22.7"W	15	360	— • — (K)	Open year round.
Davey Rock Light Buoy « N32 » 50°51'36.3"N 127°31'19.7"W	15	360	— — • — (Q)	Open year round.
Esperanza Inlet Light and Whistle Buoy « M40 » 49°47'07.4"N 127°02'28.5"W	15	360	— • — (K)	Open year round.
Hanmer Rocks Browns Passage 54°19'26.5"N 130°49'20.3"W	15	360	— — (M)	Open year round.
Jacinto Island 52°56'31"N 129°36'43"W (NAD 27)	15	360	— — • — (Q)	Open year round.
Juan De Fuca Traffic Lane Separation Light Buoy « J » USA 48°29'36.8"N 125°00'00"W	8	360	— — — (O)	Open year round.
Lawn Point Sector Light 53°25'29.8"N 131°54'50.3"W (NAD 27)	15	180	— • — (K)	Open year round.

Name Location	Range Nautical Miles	Arc Degrees	Identifier	Remarks
Pine Island 50°58'32.2"N 127°43'40.7"W	15	270	— — (M)	Open year round.
Race Rocks South Cautionary Light Buoy « VF » 48°14'04.4"N 123°31'58.7"W	15	360	— • • • (B)	Open year round.
Ridley Island Light and Bell Buoy « D27 » 54°11'56"N 130°21'26.2"W	15	360	— — • (G)	Open year round
Roberts Bank 49°05'15.7"N 123°18'36.9"W	15	360	— • (N)	Open year round.
Roberts Bank Cautionary Light Buoy « TA » 49°04'25.4"N 123°22'50.7"W	15	360	— — — (O)	Open year round.
Rosario Strait Traffic Lane Entrance Buoy R (USA) 48°16'25.3"N 123°6'34.6"W			— (T)	Operated by U.S.A.
Rose Spit 54°09'40"N 131°39'35.2"W (NAD 27)	15	360	— — • — (Q)	Open year round.
Rosenfeld Rock Light Buoy « U59 » 48°48'11.4"N 123°01'38.7"W	15	360	— • — • (C)	Open year round.
Seal Rocks 53°59'58.8"N 130°47'31.3"W (NAD 27)	15	360	— • — — (Y)	Open year round.
Seapool Rocks Light and Whistle Buoy « Y49 » 48°48'53.3"N 125°12'19.1"W	15	360	— • — (K)	Open year round.
Stenhouse Shoal, Light and Whistle Buoy "D59" 54°20'07"N 130°56'03"W	15	360	— • — • (C)	Open year round.
Thrasher Rock 49°09'00"N 123°38'30"W	15	360	— • • — (X)	Open year round.
Vancouver Approach Cautionary Light Buoy « QA » 49°16'34.4"N 123°19'18.4"W	15	360	— — • (G)	Open year round.

Name Location	Range Nautical Miles	Arc Degrees	Identifier	Remarks
Victoria Harbour Cautionary Light Buoy "VH" 48°22'31.3"N 123°23'33.7"W	15	360	— • — (K)	Open year round.

2.4.2 Western Arctic

Table 2-10 - All Stations Located in Northwest Territories and Nunavut

Name Location	Range Nautical Miles	Arc Degrees	Identifier	Remarks
Atkinson Point 69°56'46.7"N 131°26'59.3"W	5	360	— • — — (Y)	Navigation season only.
Baillie Islands 70°38'16.5"N 128°15'46.6"W	20	360	— • — (K)	Navigation season only.
Calton Point 69°30'09"N 139°06'30"W (NAD 27)	12	360	— — • (G)	Navigation season only.
Cape Dalhousie 70°16'05"N 129°42'36"W (NAD 27)	5	360	— — • • (Z)	Navigation season only.
Collinson Head 69°34'30"N 138°51'34"W	10	360	— • (N)	Navigation season only.
Hardisty Island 61°43'52.7"N 114°35'00.2"W	10	360	— — • (G)	Navigation season only.
Kay Point 69°17'26"N 138°22'42"W (NAD 27)	20	190	— • — (K)	Navigation season only.
Pelly Island 69°37'27.6"N 135°29'10.3"W (NAD 27)	5	360	— • — — (Y)	Navigation season only.
Pilot Islands 62°13'04"N 114°06'49.3"W	15	360	— • — • (C)	Navigation season only.
Pitt Island 69°09'15"N 136°10'30"W (NAD 27)	10	360	— • — (K)	Navigation season only.
Pullen Island 69°46'26.2"N 134°24'15.7"W	20	360	— — • (G)	Navigation season only.
Relief Island 70°08'45"N 130°49'30"W (Chart 7664 – NAD 27)	20	210	— — • • (Z)	Navigation season only.

Name Location	Range Nautical Miles	Arc Degrees	Identifier	Remarks
Shingle Point 69°00'30"N 137°34'12"W (NAD 27)	10	360	— • — — (Y)	Navigation season only.
Tuktoyaktuk Island Range 69°27'21.3"N 132°59'49"W (NAD 27)	5	360	— • — • (C)	Navigation season only.
Warren Point 69°45'00"N 132°21'30"W	10	360	— • — • (C)	Navigation season only.
Cache Point 68°39'24"N 113°25'00"W	20	360	— — • (G)	Navigation season only.
Cap Bexley 69°00'40"N 115°55'00"W	10/20	210	— • — — (Y)	Navigation season only.
Delta Island 68°35'26"N 100°01'45"W (Datum unknown)	20	360	— — • (G)	Navigation season only.
McClintock Point 69°18'45"N 099°53'00"W (Datum unknown)	20	360	— • — • (C)	Navigation season only.
Nordenskiöld Islands 68°21'12"N 100°47'12"W (Datum unknown)	10	360	— • — (K)	Navigation season only.
Ristvedt Island 68°30'51.8"N 099°15'13.9"W (Datum unknown)	10	360	— • — — (Y)	Navigation season only.
Taylor Point 69°37'15"N 095°35'24"W (Datum unknown)	6	360	— — • — (Q)	Navigation season only.
Wiik Island 68°31'24"N 099°33'07"W (Datum unknown)	10	360	— — • • (Z)	Navigation season only.

PART 3 VESSEL TRAFFIC SERVICES

The purpose of Part 3 is to describe to shipboard personnel the ship reporting procedures to be followed by vessels within or intending to enter a Vessel Traffic Services (VTS) zone.

3.1 RESPONSIBILITIES

There is no intention on the part of the Canadian Coast Guard to attempt to navigate or manoeuvre ships from a shore station and nothing in this publication overrides the authority of the master of his responsibility for the safe navigation of his ship. Information passed to the master is intended to assist him in the safe conduct of his ship.

A MCTS officer may, with respect to any vessel of a prescribed class that is about to enter or is within a VTS zone:

- a) grant a clearance to the vessel to enter, leave or proceed within the VTS zone;
- b) direct the master, pilot or person in charge of the deck watch of the vessel to provide any pertinent information in respect of that vessel that may be specified in the direction;
- c) direct the vessel to use any radio frequencies in communications with coast stations or other vessel that may be specified in the direction; and
- d) direct the vessel at the time, between the times or before or after any event that may be specified in the direction;
 - to leave a VTS zone;
 - to leave or refrain from entering any area within a VTS zone that may be specified in the direction; or
 - to proceed to or remain at any location within a VTS zone that may be specified in the direction.

A vessel, as well as the master, pilot or person in charge of the deck watch of a vessel, shall comply with a direction given to it or them by a MCTS officer. Notwithstanding, the master, pilot or person in charge of the deck watch may take any action that may be required to ensure the safety of life, the ship or any other ship.

The master of a ship shall ensure that before the ship enters a VTS zone the ship's radio equipment is capable of receiving and transmitting radio communications on the appropriate VTS sector frequency.

3.2 TRAFFIC CLEARANCE

A "traffic clearance" is an authorization for a ship to proceed subject to such conditions as may be included in the authorization. The traffic clearance is predicated upon ship report information and known waterway/traffic conditions. A traffic clearance does not eliminate the need for other authorizations required by legislation or by laws.

Should any factor upon which the traffic clearance is predicated alter to the detriment of safe navigation, the traffic clearance may be delayed or other conditions may be attached to the traffic clearance.

A traffic clearance is required prior to:

- a) entering a VTS zone;
- b) commencing a departure manoeuvre;
- c) commencing a manoeuvre that may be detrimental to safe navigation; and
- d) proceeding after being stranded, stopped due to breakdown of main propulsion machinery or steering gear, or involved in a collision.

3.3 COMMUNICATIONS

Radiotelephone procedures used in communicating with a MCTS Centre are those specified by the International Telecommunications Union in the *"Manual for Use by the Maritime Mobile and Maritime Mobile Satellite Services"*.

A continuous listening watch shall be maintained on the appropriate VTS sector frequency on radio equipment located:

- at any place on board the ship, where the ship is at anchor or moored to a buoy; and
- in the vicinity of the ship's conning position, where the ship is underway.

A continuous listening watch may be suspended if a MCTS officer directs the ship to communicate with coast stations and/or other ship stations on a different VHF radio frequency.

All times given in local VTS zone reports should be in local time and in accordance with the 24-hour clock system.

Navigation safety calls on designated VTS sector frequencies should be kept to the minimum consistent with the safety requirement of the situation.

3.3.1 Communication Difficulties

Where a ship, for any reason other than ship board radio equipment failure is unable to obtain the required traffic clearance or, after receiving a traffic clearance, is unable to maintain direct communication with the appropriate MCTS Centre, the master may nevertheless proceed on his route, but shall take all reasonable measures to communicate with the appropriate MCTS Centre as soon as possible and to obtain the specified clearance.

3.3.2 Ship Board Radio Equipment Malfunction

In the event of a ship board radio equipment failure, where the ship is unable to obtain the required traffic clearance or after receiving a traffic clearance is unable to maintain direct communication with the appropriate MCTS Centre, the vessel shall:

- a) if it is in a port or anchorage where repairs can be made, remain in the port until the vessel is able to establish communications in accordance with the *Canada Shipping Act, 2001*, Part 5, Section 6(a); or
- b) if it is not in a port or anchorage where repairs can be made, proceed to the nearest reasonably safe port or anchorage on its route and remain there until the vessel is able to establish communications in accordance with the *Canada Shipping Act, 2001*, Part 5, Section 6(b).

3.3.3 *English Language*

All communications with Seattle, Prince Rupert or Victoria Traffic must be made in clear, unbroken English. At least one person capable of conducting two-way radio communications using the English language must be present on the bridge at all times within the Co-operative VTS area. When language problems do arise, communications may be preceded by using message markers as found in the International Maritime Organisation Standard Marine Communication Phrases (SMCP).

3.4 ZONE DESCRIPTION

3.4.1 *Western Canada*

VTS zones in Western Canada include all Canadian waters on the west coast of Canada as described in the VTS zone schedules of this Part and referred to in the *Vessel Traffic Services Zones Regulations*.

3.4.2 *Northern Canada*

The Northern Canada VTS (NORDREG) zone consists of:

- a) the shipping safety control zones prescribed by the *Shipping Safety Control Zones Order*;¹
- 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 Kuujuaq;
- 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; and
- g) the waters of Moose River from James Bay to Moosonee.

3.5 ZONE APPLICATION

3.5.1 *Western Canada -VTS Offshore*

With respect to the Western Canada VTS zones, the *Vessel Traffic Services Zones Regulations* require a report to be made at least 24 hours before the ship enters a VTS zone from seaward including Alaska, or as soon as possible where the estimated time of arrival at that VTS zone is less than 24 hours after the ship departs from the last port of call, where the ship is:

- a) of 500 tons gross tonnage or more;
- b) engaged in towing or pushing a vessel, where the combined tonnage of the ship and the vessel being towed or pushed is 500 tons gross tonnage or more; or

¹ The Shipping Safety Control zones cover Canada's coastal northern waters within the area enclosed by the 60th parallel of north latitude, the 141st meridian of west longitude and the outer limit of the exclusive economic zone; however, where the international boundary between Canada and Greenland is less than 200 nautical miles from the baselines of the territorial sea of Canada, the international boundary shall be substituted for the outer limit.

- c) carrying a pollutant or dangerous goods, or engaged in towing or pushing a vessel carrying a pollutant or dangerous goods as prescribed in the;
 - i) *International Maritime Dangerous Goods (IMDG) Code*, and
 - ii) *Vessel Pollution and Dangerous Chemicals Regulations*.

3.5.2 Northern Canada Vessel Traffic Services Zone (NORDREG)

With respect to the Northern Canada VTS (NORDREG) zone, the *Northern Canada Vessel Traffic Services Zone Regulations* apply to the following classes of vessels:

- a) vessels of 300 tons 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 tons gross tonnage or more; and
- 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.

Participation is mandatory.

3.5.3 Local Vessel Traffic Services Zones

For vessels within or about to enter a Western Canada VTS zone, the *Vessel Traffic Services Zones Regulations* apply in respect of:

- a) every ship 20 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 45 metres or more in length, or
 - ii) the length of the vessel or object being towed or pushed by the ship is 20 metres or more in length.

Participation is mandatory.

For vessels within or about to enter a Western Canada VTS zone, the *Vessel Traffic Services Zones Regulations* do not apply in respect of:

- a) a ship engaged in towing or pushing any vessel or object within a log booming ground;
- b) a pleasure yacht that is less than 30 metres in length; and
- c) a fishing vessel that is less than 24 metres in length and not more than 150 tons gross tonnage.

3.6 ADVANCE REPORTING REQUIREMENTS

3.6.1 VTS Offshore Report

The *Vessel Traffic Services Zones Regulations* require all vessels greater than 500 tons gross tonnage to file a VTS Offshore Report 24 hours prior to entering a Canadian VTS zone from seaward, or as soon as practical where the estimated time of arrival of the ship to a Canadian VTS zone is less than 24 hours after the time the ship departed its last port of call. Send VTS Offshore Reports to one of the following:

Email: vt.s.rupert@innav.gc.ca
Telephone: 250-627-3071

Or via a Canadian Coast Guard MCTS Centre, free of charge.

3.6.2 Notice of Arrival (if bound for a United States Port)

A 96-hour Notice of Arrival (NOA) must be filed in accordance with the 33 *Code of Federal Regulations* (CFR) Part 160 (dated February 28, 2003) directly to the United States Coast Guard National Vessel Movement Center (NVMC) via one of the following methods:

Email: sans@nvmc.uscg.gov
Telephone: 1-800-708-9823
Facsimile: 1-800-547-8724

The electronic Notice of Arrival/Departure (e-NOA/D) can be found at the NVMC website:
<http://www.nvmc.uscg.gov/NVMC/default.aspx>.

3.6.3 Western Canada - VTS Offshore Report

3.6.3.1 Information Required

- a) the name of the ship;
- b) the radio call sign of the ship;
- c) the name of the master of the ship;
- d) the position of the ship;
- e) the time (UTC) the ship arrived at the position;
- f) the course of the ship, if any;
- g) the speed of the ship, if any;
- h) the prevailing weather conditions;
- i) the estimated time (UTC) that the ship will enter the VTS zone;
- j) the name of the VTS zone the ship intends to enter;
- k) the destination of the ship;
- l) the estimated time (UTC) of arrival of the ship at the destination;
- m) the intended route of the ship;
- n) the name of the last port of call of the ship;
- o) the draught of the ship;
- p) any dangerous goods, listed by class, or pollutant, that is carried on board the ship or the vessel being towed or pushed by the ship;

- q) any defect in the ship's hull, main propulsion systems or steering systems, radars, compasses, radio equipment, anchors or cables;
- r) any discharge, or threat of discharge, into the water, of a pollutant from the ship or the vessel being towed or pushed by the ship, and any damage to the ship or vessel that may result in the discharge of a pollutant from the ship or vessel into the water;
- s) the name of the Canadian or United States agent of the ship; and
- t) the date of expiration of a certificate referred to in Article VII of the *International Convention on Civil Liability for Oil Pollution Damage, 1969/1992*, the International Oil Pollution Prevention Certificate, the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk, the Certificate of Fitness and the Certificate of Compliance, if any issued to the ship. (The following is also requested: the date and expiration of the ISM Safety Management Certificate, the ISM document of compliance, and the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 Certificate (known as Bunkers Convention Certificate), if any, issued to the ship.)

3.6.4 Western Canada - Local VTS Zone Report

With respect to the Western Canada VTS zones, the *Vessel Traffic Services Zones Regulations* specify that the master of a ship shall report to a MCTS officer in accordance with the following requirements.

3.6.4.1 Information Required

Dependent upon the reporting requirement, the following information shall be required to be reported:

- a) the name of the ship;
- b) the radio call sign of the ship;
- c) the position of the ship;
- d) the estimated time that the ship will enter the VTS zone;
- e) the destination of the ship;
- f) the estimated time that the ship will arrive at its destination;
- g) whether any pollutant or dangerous goods cargo is carried on board the ship or any vessel or object being towed or pushed by the ship;
- h) the estimated time that the ship will depart the berth; and
- i) the estimated time at which the ship will next arrive at a location requiring a report.

3.6.4.2 Entering a Zone

At least 15 minutes before a ship intends to enter a VTS zone, a report shall be made specifying the information listed in a), b), c), d), e), f) and g).

Exception: Ships already in possession of a valid Traffic Clearance issued by ECAREG, NORDREG or another VTS zone are not required to provide this report.

3.6.4.3 Arrival at a Calling-In-Point

When a ship arrives at a Calling-In-Point (CIP) a report shall be made specifying the information listed in a), c) and i).

3.6.4.4 Arrival at a Berth

As soon as practicable after a ship arrives at a berth, a report shall be made specifying the information listed in a) and c).

3.6.4.5 Departure Manoeuvre

A departure manoeuvre is defined as an operation during which a vessel leaves a berth and gets safely underway:

- a) immediately before commencing a departure manoeuvre, a report shall be made specifying the information listed in a), b), c), e), f), g) and h);
- b) immediately after completing the departure manoeuvre, a report shall be made specifying the information listed in a), c) and i).

3.6.4.6 Manoeuvres

A traffic clearance is required 15 minutes prior to commencing any manoeuvre such as:

- a) a compass adjustment;
- b) the calibration and servicing of navigational aids;
- c) a sea trial;
- d) a dredging operation;
- e) the laying, picking up and servicing of submarine cables or any other manoeuvre that may be detrimental to safe navigation.

Prior to commencing a manoeuvre, a report shall be made specifying the information listed in a) and c), plus a description of the intended manoeuvre. As soon as practical after the manoeuvre is completed, a report describing the manoeuvre just completed shall be made.

3.6.4.7 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 *Vessel Traffic Services Zones Regulations*.

3.6.4.8 Non-Routine Reports

Pursuant to the *Vessel Traffic Services Zones Regulations* a report indicating the vessel's name, position and a description of the incident shall be made as soon as the master becomes aware of any of the following conditions:

- a) the occurrence on board the ship of any fire;
- b) the involvement of the ship in a collision, grounding or striking;
- c) any defect in the ship's hull, main propulsion systems or steering systems, radars, compasses, radio equipment, anchors or cables;
- d) any discharge or probable discharge of a pollutant from the ship into the water;
- e) another ship in apparent difficulty;
- f) any obstruction to navigation;
- g) any aid to navigation that is functioning improperly, damaged, off-position or missing;
- h) the presence of any pollutant in the water;
- i) the presence of a ship that may impede the movement of other ships; and
- j) any ice and weather conditions that is detrimental to safe navigation.

Notes

- *Items f), g) and h) are not required if the information has been previously promulgated by a Notice to Shipping.*
- *Mariners are encouraged to provide, on a voluntary basis, any information pertaining to charts and publications which may not be on board so that arrangements can be made to embark the necessary items.*

3.6.4.9 Variations from Requirements

Ferries and other vessels on regularly scheduled voyages may be exempted from making routine reports. Formal variations to reporting procedures will be granted only where alternate arrangements to provide essential information are made and where the equivalent procedure or practice is deemed to be as safe as that required in the regulations.

Formal variations may be obtained by submitting a written request to the appropriate Regional MCTS Superintendent, Canadian Coast Guard (see Section 1.6). In circumstances other than those described above, informal variations may be granted from time to time on a one-time-only basis by a MCTS officer where the procedure or practice requested is deemed to be as safe as that required in the regulations.

3.6.5 NORDREG Zone Reports

3.6.5.1 Format

NORDREG reports shall be addressed to NORDREG CANADA and communicated either directly to NORDREG CANADA or to the nearest Canadian Coast Guard MCTS Centre. The master of a ship shall ensure that these reports are made in accordance with the stated requirements.

The information requested from the ships is derived from the standard reporting format shown in International Maritime Organization resolution A.851(20) – *General Principles for Ship Reporting Systems and Ship Reporting Requirements, Including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants*.

Every report shall begin with the term "NORDREG" (system identifier) and be followed by whichever of the following two letters corresponds to the report:

- a) "SP", in the case of a sailing plan report;
- b) "PR", in the case of a position report;
- c) "FR", in the case of a final report;
- d) "DR", in the case of a deviation report.

The report must include the applicable designators followed by the information required in accordance with Table 3-1 - NORDREG Zone Report: Designators and Information Required.

3.6.5.2 Content and Time and Geographical Position for Submitting Reports

Vessels shall send a report as follows, and provide the information required in accordance with Table 3-1 and that corresponds to the designators specified.

3.6.5.3 When the Vessel is About to Enter the NORDREG Zone

A sailing plan (SP) report shall be provided when the vessel is about to enter the NORDREG zone and must include the following designators: A, B, 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 to prepare relevant safety information for the vessel.²

3.6.5.4 Departing a Berth/Anchorage

A sailing plan report 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, 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.

3.6.5.5 Getting Underway After an Incident

A sailing plan report shall be provided immediately before a vessel gets underway within the NORDREG zone if the vessel has been stranded, has stopped as a result of a breakdown in the main propulsion system or steering system or has been involved in a collision. The sailing plan report must include the following designators: A, B, 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.

3.6.5.6 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, C or D, E, F and S.

3.6.5.7 Daily

A position report shall be provided daily at 16:00 UTC, unless the vessel is transmitting Long-Range Identification and Tracking of Vessels (LRIT) information. The position report shall include the following designators: A, B, C or D, E, F and S.

3.6.5.8 Other Situations

A position report shall be provided with designators A, B, C or D, E, F, S and X as soon as feasible after a vessel's master becomes aware of any of the following:

- a) another vessel in apparent difficulty;
- b) any obstruction to navigation;
- c) any aid to navigation that is not functioning properly or is damaged, out of position or missing;
- d) any ice or weather conditions that are hazardous to safe navigation;
- e) a pollutant in the water.

² Vessels must obtain a clearance from MCTS before entering the NORDREG zone.

3.6.5.9 Arrival at Berth/Anchorage

A final report (FR) shall be provided on the arrival of a vessel at a berth within the NORDREG zone and include the following designators: A and K.

3.6.5.10 Exiting the Zone

A final report shall be provided immediately before a vessel exits the NORDREG zone and include the following designators: A and K.

3.6.5.11 Deviation Report

A deviation report (DR) shall be provided when a vessel's position varies significantly from the position that was expected based on the sailing plan report, or when a vessel's intended voyage changes from the sailing plan report. The deviation report must include the following designators: A, B, C or D and the other designators included in the sailing plan report if the corresponding information has changed since that report.

Table 3-1 - NORDREG Zone Report: Designators and Information Required

Designator	Subject	Information
A	Vessel	The vessel's name, the name of the state whose flag the vessel is entitled to fly and, if applicable, the vessel's call sign, International Maritime Organization ship identification number and Maritime Mobile Service Identity (MMSI) number.
B	Date and time	Date and time corresponding to the vessel's position under designator C or D given in Coordinated Universal Time (UTC). A 6-digit group followed by a Z, the first 2 digits giving the day of the month, the next two digits giving the hour and the last two digits giving the minutes.
C	Vessel's position by latitude and longitude.	A 4-digit group giving latitude in degrees and minutes suffixed with N and a 5 digit group giving longitude in degrees and minutes suffixed with W.
or D	Vessel's position by geographical name of place	If the vessel is at a known place, the name of the place. If the vessel is not at a known place, the name of a known place followed by the vessels true bearing (3-digits) and distance in nautical miles from the place.
E	Vessel's course	True course. A 3-digit group.
F	Vessel's speed.	Speed in knots. A 2-digit group.
G	The vessel's last port of call	The name of the port of call.
H	Vessel's entry into the NORDREG zone or departure from a berth within the NORDREG zone.	Estimated date and time the vessel will enter the NORDREG zone or depart the berth within the NORDREG zone, as appropriate. Date and time expressed as under designator B and entry or departure position expressed as under designator C or D.
I	Vessel's destination and expected time of arrival	The name of the destination followed by expected time of arrival, expressed as under designator B.

Designator	Subject	Information
K	Vessel's exit from the NORDREG zone or arrival at the vessel's destination.	Date and time vessel exits the NORDREG zone or arrives at its berth within the NORDREG zone. Exit date and time expressed as under designator B and exit or arrival position expressed as under designator C or D.
L	Vessel's intended route.	A brief description of the intended route through the NORDREG zone.
O	Vessel's maximum present static draught.	A 4-digit group giving metres and centimetres.
P	Cargo.	A brief description of the vessel's cargo and the cargo of any vessel being towed or pushed. The description must include: a) in the case of a dangerous good, the class and quantity; and b) in the case of a pollutant, the technical name and quantity.
Q	Defects, damage and deficiencies, as well as circumstances adversely affecting the vessel's normal navigation.	Brief details of any defects, damage or deficiencies of the vessel or its machinery, equipment or charts and nautical publications or circumstances that adversely affect normal navigation.
S	Weather and Ice.	A brief description of the prevailing weather and ice conditions.
T	Vessel's authorized representative, agent or owner.	The name and contact information of: a) in the case of a Canadian vessel, its authorized representative; b) in the case of a foreign vessel, its Canadian or American agent or owner; c) in the case of a pleasure craft that is not a Canadian vessel, the pleasure craft's owner.
W	Persons on board the vessel.	The number of persons.
X	Additional information for sailing plan report. Information to be reported in a position report in certain situations.	a) in the case of a sailing plan report the following information: i) the total amount of oil on board that is for use as fuel or carried as cargo, expressed in cubic metres; ii) if the vessel's owner or master holds an Arctic Pollution Prevention Certificate in respect of the vessel, the certificate's expiry date and the name of its issuing authority; iii) the vessel's ice class, if applicable, and the name of the classification society that assigned the ice class; iv) if the vessel is getting underway after having been stranded, stopped as a result of a breakdown in the main propulsion or steering system or involved in a collision, a brief description of the applicable incident. b) in the case of a position report required after becoming aware of: another vessel in difficulty; any obstruction to navigation; an aid to navigation that is not functioning properly or is damaged, out of position or missing; any ice or weather conditions that are hazardous to safe navigation and a pollutant in the water - then a brief description of the applicable matter.

The waters of Kugmallit Bay and MacKenzie Bay are considered part of the Northern Canada Vessel Traffic Services (NORDREG) zone. A final report must be submitted to NORDREG CANADA by vessels southbound in Kugmallit Bay to MacKenzie River at mile 1081, which is marked by Kittigauzit Bay Lt By LL 1816 Mo(A) 69 24'N 133 38'W. Vessels northbound from the MacKenzie River to Tuktoyatuk or the Beaufort Sea or northbound from Shallow Bay must submit a sailing plan report to NORDREG CANADA.

NORDREG Coordinates

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: iganordreg@innav.gc.ca

Operational from approximately mid-May to late December.

Prescott MCTS Centre

Telephone: 613-925-4471
Facsimile: 613-925-4519
Telex (Telefax): 063-15529
Telegraphic Identifier: NORDREG.CDA
Email: iganordreg@innav.gc.ca

Operational from approximately late December to mid-May.

3.6.5.12 If bound for a Canadian port:

Pre-Arrival Information Report

The Canadian *Marine Transportation Security Regulations* (MTSR) requires a Pre-Arrival Information Report (PAIR) to be filed prior to entry into Canadian waters. Message format and contact information is found in PART 4.

3.7 MACKENZIE RIVER MARINE SAFETY ADVISORY PROCEDURES

For the purpose of enhancing navigation safety on the Mackenzie River, danger areas have been designated and reporting procedures established for vessels in these areas.

The following *Marine Safety Advisory Procedures* on the Mackenzie River should be followed by all vessels on the river, and they should report to Iqaluit MCTS before entering, whilst proceeding through, and on leaving the danger zones (1-10) on the river listed below:

1. Wrigley Harbour to Horn River

- Downbound traffic reports in at Mile 0 and out at Mile 65.
- Upbound traffic reports in at Mile 65 and out at Mile 0.

2. Head of the Line to Fort Simpson

- Downbound traffic reports in at Mile 130 and reports out at Mile 205.
- Upbound traffic reports in at Mile 205 and out at Mile 130.

3. Camsell Bend to Jones Landing

- Downbound traffic reports in at Mile 282 and out at Mile 325.
- Upbound traffic reports in at Mile 325 and out at Mile 282.

4. Blackwater River to Old Fort Point

- Downbound traffic reports in at Mile 400 and out at Mile 480.
- Upbound traffic reports in at Mile 480 and out at Mile 400.

5. Sans Sault Rapids

- Downbound traffic reports in at Mile 620 and out at Mile 645.
- Upbound traffic reports in at Mile 645 and out at Mile 620.

6. Ramparts Rapids

- Downbound traffic reports in at Mile 667 and out at Mile 680.
- Upbound traffic reports in at Mile 680 and out at Mile 667.

7. Oniak Channel

- Traffic reports in when entering the Oniak Channel from the following channels: Middle Channel, Luker Channel and East Channel.
- Traffic reports out when leaving the Oniak Channel to the following channels: Middle Channel, Luker Channel and East Channel.

8. East Channel – Inuvik to Tununuk

- Downbound traffic reports when leaving Inuvik and out when either entering Oniak Channel or at Mile 1040.
- Upbound traffic for Inuvik reports in at Mile 1040 or when entering from the Oniak Channel and reports arrival at Inuvik.

9. East Channel – Kittigazuit

- Downbound traffic reports in at Mile 1070 and out at the fairway buoy at Mile 1081.
- Upbound traffic reports in at the fairway buoy at Mile 1081 and out at Mile 1070.

10. Vessels should also report to Iqaluit MCTS before entering and upon leaving the following restricted channels in the Mackenzie Delta:

Restricted Channels	Restricted Channels
Aklavik Channel	Peel River
Arctic Red River	Phillips Channel
Husky Channel	Schooner Channel
Napoiak Channel	Tiktalik Channel
Neklek Channel	Tuktoyaktuk Entrance Channel
Peel Channel	

Mariners should also report in and out of any other restricted channels in the Delta at their own discretion.

All vessels should maintain a continuous radio watch on the Western Arctic Emergency and Calling Frequency, 5803 kHz (SSB), from the time that they reach the first reporting point previous to entering a danger area until the time that they report clear of the danger area.

If contact cannot be made with the Iqaluit MCTS Centre on 5803 kHz, VHF Ch 16 (156.8 MHz) may be used where available either directly or through another ship, for possible relay to the Iqaluit MCTS Centre.

The Safety Advisory calls should consist of the following information:

- a) name of towing vessel and number of barges in the tow and whether riding high or low;
- b) direction of voyage i.e. northbound, southbound, etc.;
- c) danger zone;
- d) mileage;
- e) time; and
- f) remarks.

EXAMPLE:

Iqaluit Coast Guard Radio this is Kitikmeot, southbound with 6 barges riding high, entering Area 6 at Mile 680, 1030 Local estimating Mile 660 at 1530 local, have you any traffic?

If contact cannot be made with Iqaluit MCTS Centre, either directly or through another ship, the vessel shall broadcast her position to advise any vessels in the area.

Iqaluit MCTS Centre

Telephone:	867-979-0310
Facsimile:	867-979-4264
Telex (Telefax):	063-15529
Telegraphic Identifier:	NORDREG CDA
Email:	Iqamck01@innav.gc.ca

3.8 CANADA / UNITED STATES CO-OPERATIVE VESSEL TRAFFIC SERVICES AGREEMENT

In 1979, by formal agreement, the Canadian Coast Guard and the United States Coast Guard established the Co-operative Vessel Traffic Services (CVTS) for the Strait of Juan de Fuca region. The purpose of this agreement is to provide for a co-operative system of vessel traffic management in the applicable waters in order to enhance safe and expeditious movement of vessel traffic while minimizing the risk of pollution of the marine environment.

3.8.1 Co-Operative Vessel Traffic Services (CVTS)

Participation with Prince Rupert, Seattle and Victoria Traffic is mandatory within Canadian and United States territorial waters. The CVTS Area of Operation is defined as 124°40'W south along the Washington coast to 48°00'N then west to 125°15'W and north to 48°35'45"N. Inbound vessels are to check in with Prince Rupert Traffic on VHF Channel 74 (156.725 MHz) at either 48°00'N or 125°15'W prior to entering the traffic separation scheme. An information service such as a vessel's identity, destination, or other information obtained through the VTS reports and sensors, is available upon request outside of the VTS zone.

3.8.2 Prince Rupert Traffic

West Coast Approaches to Juan de Fuca Strait.

Vessel Traffic Services from 124°40'00W in Juan de Fuca Strait westward to 125°15'00"W, and intersecting to the south to 48°00N from the west coast of Washington State are provided by the Canadian Coast Guard from the Prince Rupert MCTS Centre located in Prince Rupert, BC.

All communications with vessels in these areas will be conducted on VHF Ch74 (156.725 MHz).

3.8.3 Seattle Traffic

Juan de Fuca Strait

Vessel Traffic Services in the area containing all Canadian and United States waters from 124°40'00"W which intersects the Canadian and United States shorelines thence easterly through the Juan de Fuca Strait, including all waters south and east of a line from Church Point to Race Rocks light to the intersection of the Canada/United States International boundary to Hein Bank light and bell buoy to Cattle Point, and south of a line from Patos Island to Alden Bank lighted gong buoy "A" and north to the 49th parallel, including the United States Gulf Island waters are provided by the United States Coast Guard from the Puget Sound VTS Center located in Seattle, WA (Seattle Traffic).

All communications with vessels in these areas will be conducted on VHF Ch05A (156.250 MHz).

3.8.4 Victoria Traffic

Haro Strait and Approaches, Boundary Pass, South Portion Strait of Georgia

Vessel Traffic Services in the area containing all Canadian and United States waters north and east of a line from Church Point to Race Rocks light to the intersection of the Canada/United States International boundary to Hein Bank light and bell buoy to Cattle Point including all of Haro Strait, Boundary Passage and the southern portion of the Strait of Georgia are provided by the Canadian Coast Guard from the Victoria MCTS Centre located at Patricia Bay, BC (Victoria Traffic).

All communications with vessels in these areas will be conducted on VHF Ch11 (156.55 MHz).

3.9 TANKER EXCLUSION ZONE

A tanker exclusion zone (TEZ) has been established off the Pacific coast of Canada as a result of the discontinuance of the Trans-Alaska Pipeline Tanker Routes.

The purpose of the TEZ is to keep laden tankers west of the zone boundary in an effort to protect the shoreline and coastal waters from a potential risk of pollution.

The zone boundary follows the Canada/Alaska border to a point approximately 115 miles west of Langara Island, thence southward to approximately 73 miles southwest of Cape St. James, thence to 40 miles southwest of Amphitrite Point and thence due east to just off Cape Flattery.

The TEZ is defined as follows:

a line from 54°00'00"N 136°17'00"W
thence to 51°05'00"N 132°30'00"W
thence to 48°32'00"N 126°30'00"W
thence to 48°32'00"N 125°09'00"W

Loaded TAPS crude oil tankers transiting along the Pacific coast are requested to remain seaward of this zone boundary.

3.10 TURN POINT – SPECIAL OPERATING AREA

The Turn Point Special Operating Area (SOA) has been established to enhance order and predictability, the efficient and safe movement of goods and services, and to further reduce the risk of accidents with respect to vessels transiting the boundary waters of Haro Strait and Boundary Passage in the vicinity of Turn Point on Stuart Island, Washington.

The Turn Point SOA consists of those Canadian and United States waters contained within a four (4) sided area connected by the following coordinates:

48°41.324N 123°14.245W (Turn Point Light, LL255/US 19790);
48°42.400N 123°13.967W;
48°41.087N 123°17.631W (Arachne Reef Light, LL254.3);
48°39.732N 123°16.438W (Tom Point Light, LL225).

3.10.1 Application

These procedures apply to all Canadian and United States VTS participant vessels within or approaching the Turn Point SOA from Boundary Passage, southbound for Haro Strait; and from Haro Strait, northbound for Boundary Passage or Swanson Channel, however, they do not apply to vessels southbound out of Swanson Channel.

3.10.2 Movement Procedures

- a) A VTS participant, if towing astern, do so with as short a hawser as safety and good seamanship permits.
- b) A VTS participant of 100 metres or more in length (LOA) will make best efforts consistent with safety and industry practices:
 - 1. not to enter the Turn Point SOA when another VTS participant of 100 metres or more in length is already located within the SOA, unless;
 - i) when following astern a minimum .5NM (5 cables) separation is maintained with the vessel ahead,
 - ii) when overtaking in the SOA with the concurrence of Victoria MCTS that there is no opposing traffic and a CPA of at least .5NM (5 cables) is maintained,
 - iii) if outbound from Boundary Pass and meeting an inbound vessel from Haro Strait already in the SOA, enter only after the outbound vessel is past the vector heading of the inbound vessel engaged in the turn and maintain at least a .5NM (5 cables) CPA,
 - iv) if inbound from Haro Strait and meeting an outbound vessel from Boundary Pass already in the SOA, enter only after the outbound vessel has crossed a bearing line between Turn Point and Arachne Reef and maintain at least a .5NM (5 cables) CPA;

2. maintain a distance off of Turn Point of at least .3 NM (3 cables).

All VTS participants approaching the Turn Point SOA are expected to make safe passing arrangements with other VTS participants at either Monarch Head or Blunden Islet southbound; and Lime Kiln Light (LL222/US19695) or Kellett Bluff Light (LL229/US19720) northbound. These arrangements should be made no later than reaching CIP 6 at Gowlland Point (LL253/US19800) southbound and approximately abeam Danger Shoal Light and Horn Buoy (US19775) northbound.

Figure 3-1 - Canada/United States Co-operative Vessel Traffic Management System

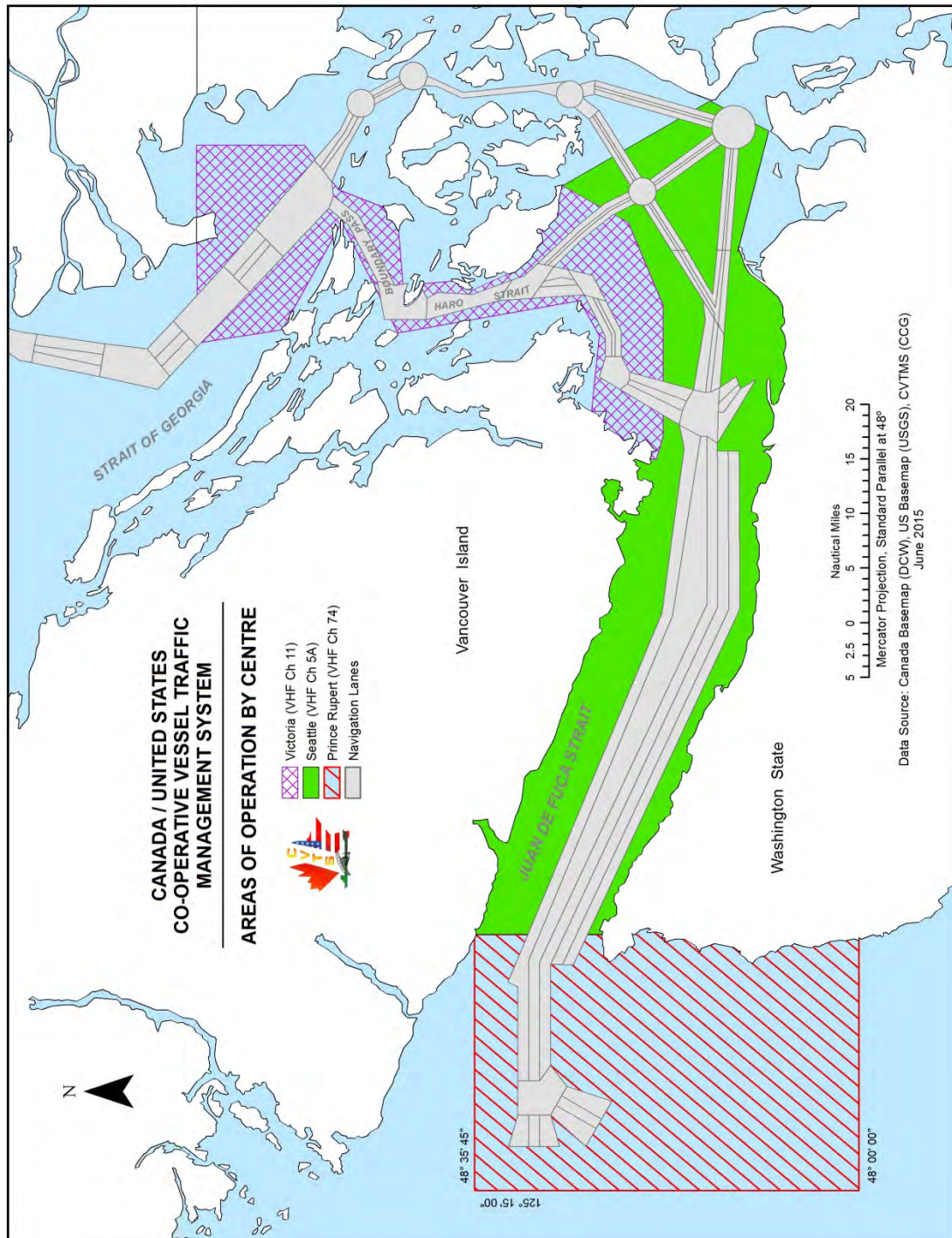
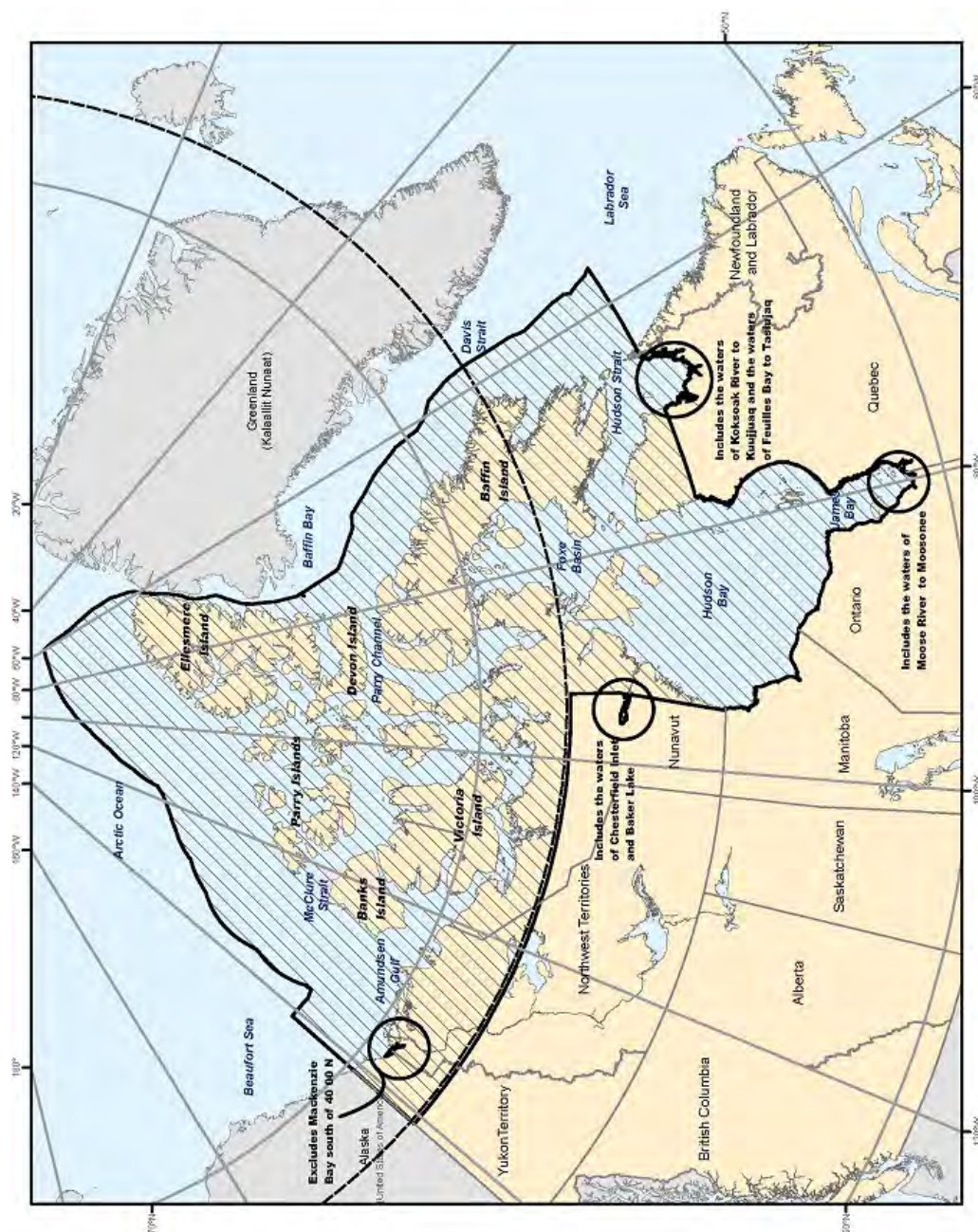


Figure 3-2 - Northern Canada Vessel Traffic Services (NORDREG) Zone



3.11 VESSEL TRAFFIC SERVICES ZONE SCHEDULES**3.11.1 Prince Rupert****Table 3-2 - Sectors and Boundaries of Prince Rupert - North**

Sector	Boundaries
1	All Canadian waters north of Vancouver Island from a line joining Cape Caution light 51°09'50"N 127°47'06"W; to Mexicana Point 50° 54' 51.96"N 127° 59' 58.04"W thence to Cape Sutil 50°52'34.23"N 128°3'7.24"W. Then following the northwestern shore line to Cape Scott thence; a line extending 281° (T) from 50°46'57"N 128°25'32"W to 50°52'00"N 129°05'00"W following a line 220 degrees (T) to the limit of the Territorial Sea; and thence northward following the limit of the Territorial Sea to a line 270 degrees (T) from Cape Knox on the northwestern tip of Graham Island 54°11'00"N 133°05'00"W to the limit of the Territorial Sea, but not including those waters described in Sector 2 or mainland inlets and channels outside VHF coverage.
2	All Canadian waters bounded by a line running from Bareside Point 53°54'12"N 130°16'31"W; to Swede Point 53°53'16"N 130°15'35"W. Then following the northern shoreline of Pitt Island to a position of 53°48'03"N 129°58'31"W; thence to a position of 53°48'41.4"N 129°57'07.9"W; thence northward following the mainland shore to a position of 54°09'38"N 129°57'37"W; thence to a position of 54°11'53"N 129°58'51"W; thence northward following the mainland shore to 54°37'57"N 130°26'31"W; thence to a position of 54°38'02"N 130°26'31"W; thence northward along the west shore of Maskelyne Island to Maskelyne Point 54°38'55"N 130°26'42"W; thence to Wales Point 54°42'17"N 130°28'33"W; thence westward along the shore of Wales Island to 54°42'06"N 130°31'47"W; thence to a position of 54°42'27"N 130°36'50"W; thence westward along the International Boundary to Cape Muzon light 54°39'48"N 132°41'30"W; thence westward along the shore of Dall Island to Point Cornwallis light 54°42'12"N 132°52'17"W; thence southwestward to a point at 54°31'23.9"N 133°12'43.2"W; thence southwestward to a point at 54°21'02.3"N 133°22'32.9"W; thence following the limit of the territorial sea to the south to a point at 54°11'00.0"N 133°28'00.0"W; thence 090 degrees (T) eastward to Cape Knox on Graham Island 54°11'00"N 133°05'00"W; thence eastward along Graham Island shoreline to Rose Spit 54°11'12.5"N 131°38'43"W; thence southeastward to Seal Rocks 54°00'00"N 130°47'26"W; thence to Oval Point on Porcher Island 53°56'24"N 130°43'15"W, thence eastward following Porcher Island shoreline to Bareside Point.

Note: Prince Rupert Traffic monitors navigation in the traffic zone using AIS.

Table 3-3 - Identification and Frequencies of Prince Rupert

Sector	Identifier	Channel	Frequencies (MHz)
1	"Prince Rupert Traffic"	11	156.55
2	"Prince Rupert Traffic"	71	156.575

All times shall be given in Pacific Standard Time or Pacific Daylight Saving Time, whichever is in effect.

Table 3-4 - Calling-In-Points of Prince Rupert - North

Number	Sector	Name	General Description and Conditions	Geographic Description
1A	Change	Cape Caution Cape Sutil	A line from Cape Caution light to Mexicana Point thence to Cape Sutil.	A line running from: 51°09'50"N 127°47'06"W to 50°54'51.96"N 127°59'58.04"W to 50°52'34.23"N 128°3' 7.24"W.
1B	1	Dugout Rocks	A line joining Dugout Rocks light with Cape Calvert. Mariners bound for Fitz Hugh Sound shall report ETA Dugout Rocks.	A line running from: 51°22'01.5"N 127°48'23.5"W to 51°25'04"N 127°54'16"W.
1C	1	Pearl Rocks	A line joining Pearl Rocks with the southern most of the Sorrow Islands and thence Cape Calvert. Mariners bound for Queen Charlotte Sound via North Passage shall report ETA Pearl Rocks.	A line running from: 51°22'00"N 128°00'12"W to 51°24'33"N 127°55'18"W; thence 51°25'04"N 127°54'16"W.
2	1	Fog Rocks	Fog Rocks light.	A line running 090° - 270° (T) through 51°58'21"N 127°55'02"W.
3	1	Walker Island	Walker Island light Lama Passage.	A line running 090° - 270° (T) through 52°05'58"N 128°06'55"W.
4	1	Barba Point	A line joining Barba Point and Boscowitz Point.	A line running from: 52°16'11"N 127°44'55"W to 52°16'06"N 127°47'00"W.
5	1	Idol Point	A line joining Idol Point light to Graven Point.	A line running from: 52°14'19"N 128°16'31"W to 52°15'27"N 128°13'19"W.
6	1	Freeman Point	Freeman Point light. If northbound, mariners shall report ETA Boat Bluff light and Ditmars Point. Mariners shall advise if intending to transit Hiekish Narrows.	A line running 090° - 270° (T) through 52°33'11.5"N 128°29'18"W.
7	1	Ditmars Point	Ditmars Point If southbound, mariners shall report ETA Boat Bluff light and Freeman Point.	A line running 090° - 270° (T) through 52°43'48"N 128°34'12"W.
8	1	Griffin Point	Griffin Point light. If northbound, mariners shall report which side of Work Island they intend to transit. If southbound, mariners shall advise if intending to transit Hiekish Narrows.	A line running 090° - 270° (T) through 53°03'56"N 128°32'54"W.
9	1	Kingcome Point	A line joining Kingcome Point light and Angler Cove. If southbound, mariners shall report which side of Work Island they intend to transit.	A line running from: 53°17'57"N 128°54'23"W to 53°18'44"N 128°53'17"W.
10	1	Money Point	Money Point light. Mariners bound for Kitimat shall report an ETA for Emilia Island light.	A line running 090° - 270° (T) through 53°22'55"N 129°09'50"W.

Number	Sector	Name	General Description and Conditions	Geographic Description
11	1	Sainty Point	A line joining Sainty Point light and Yolk Point If northbound, mariners shall report an ETA for Tom Island light and Pitt Island light.	A line running from: 53°22'18"N 129°18'40"W to 53°21'47"N 129°20'00"W.
12	1	Pitt Island light	Pitt Island light. If southbound, mariners shall report an ETA for Tom Island light and Sainty Point light.	A line running 045° - 225° (T) through 53°42'00"N 129°48'38"W.
13A	Change	Baker Inlet	A line across Grenville Channel from Baker Inlet light.	A line running 052° - 232° (T) through 53°48'41.4"N 129°57'07.9"W.
13B	Change	Swede Point	A line across Ogden Channel joining Bareside Point and Swede Point.	A line joining 53°54'12"N 130°16'31"W and 53°53'16"N 130°15'35"W.
14A	2	Lawyer Islands	A line joining Hunt Point and Lawyer Islands.	A line joining 54°06'11"N 130°24'54"W; to 54°06'36"N 130°20'12"W.
14B	2	Genn Islands	A line joining Lawyer Islands and Hazel Point.	A line joining 54°06'36"N 130°20'12"W to 54°07'03"N 130°14'39"W.
15A	2	Petrel Rock	A line from Digby Island to West Kinahan Island.	A line running 180° (T) from 54°15'33"N 130°25'00"W to 54°12'30"N 130°25'00"W.
15B	2	Greentop Islet	A line from West Kinahan Island to a position near Greentop Islet.	A line running from: 54°12'30"N 130°25'00"W; to 54°10'40"N 130°25'00"W.
15C	2	Holland Rock	A line from a position near Greentop Islet to Kitson Island.	A line running from: 54°10'40"N 130°25'00"W to 54°10'40"N 130°19'00"W.
16	2	Lucy Islands	A line from Lucy Islands light to Tugwell Island.	A line running from: 54°17'46"N 130°36'25"W to 54°19'10"N 130°30'54"W.
17	2	Pillsbury Point	A line joining Pillsbury Point and Tobey Point.	A line running from: 54°17'58"N 130°21'05"W to 54°17'58"N 130°22'55"W.
18	2	Edye Passage	A 3 NM arc centered on Table Point. Mariners are encouraged to call at Gull Rocks when entering or exiting Edye Passage.	An arc centered on 54°03'49"N 130°31'55"W; Radius 3 nautical miles bearing from seaward 137° - 233° (T).
19	2	Wales Point	A line joining Wales Point to Maskelyne Point.	A line running from: 54°42'17"N 130°28'33"W to 54°38'55"N 130°26'42"W.
20A	2	Butterworth Rocks	A line from Jacinto Point light to Butterworth Rocks light thence to Seal Rocks light. Mariners shall report routing if not using Brown Passage.	A line running from: 54°34'47"N 131°04'30"W to 54°14'08"N 130°58'30"W, thence 54°00'00"N 130°47'26"W.
20B	Change	Seal Rocks	A line joining Seal Rocks light to Oval Point on Porcher Island.	A line running from: 54°00'00"N 130°47'26"W to 53°56'24"N 130°43'15"W.
21	Change	Rose Spit Seal Rocks	A line joining Rose Spit with Seal Rock light.	A line running from: 54°11'12.5"N 131°38'43"W to 54°00'00"N 130°47'26"W.

Number	Sector	Name	General Description and Conditions	Geographic Description
22	2	Rose Spit	A line extending 000° (True) from Rose Spit to the International Boundary.	A line running 000° (T) from 54°11'12.5"N 131°38'43"W to the International Boundary.
23	2	International Boundary Dixon Entrance	A line following the International Boundary between Alaska, USA and British Columbia, Canada between Cape Muzon light and Wales Island. Mariners shall report whether their route is through Holliday Passage, Oriflamme Passage or Main Passage when transiting Chatham Sound.	A line running from: 54°39'48"N 132°41'30"W to 54°42'06"N 130°31'47"W.
24	2	Zone Limit	A line running from Point Cornwallis light extending on a southwestward arc following the limit of the Territorial Sea to 54°11'00"N 133°28'34.6"W.	A line running from: 54°42'12"N 132°52'17"W; to 54°11'00"N 133°28'34.6"W along the limit of the Territorial Sea.
25	Change	Cape Knox	A line extending 270° (True) from Cape Knox to the limit of the Territorial Sea.	A line running 270° (T) from 54°11'00"N 133°05'00"W; to the limit of the Territorial Sea.
26	1	Tasu Sound	A line extending 220° (True) from Davidson Point light to the limit of the Territorial Sea. Mariners shall report at Davidson Point entering or exiting Tasu Sound.	A line running 220° (T) from 52°44'32"N 132°06'42"W to the limit of the Territorial Sea.
27	1	Cape St. James	A line extending 220° (True) from Cape St. James light to the limit of the Territorial Sea.	A line running 220° (T) from 51°56'10"N 131°00'52"W to the limit of the Territorial Sea.
28	1	McInnes Island Cape St. James	A line joining McInnes Island light and Cape St. James light.	A line running from: 52°15'42"N 128°43'13"W to 51°56'10"N 131°00'52"W.
29	1	Cape Mark McInnes Island	A line from Cape Mark light to McInnes Island light.	A line running from: 52°08'59"N 128°32'18"W to 52°15'42"N 128°43'13"W.
30	1	Bonilla Island Sandspit	A line joining Bonilla Island sector light and Sandspit aeronautical beacon.	A line running from: 53°29'34"N 130°38'09"W to 53°15'10"N 131°48'48"W.
31	1	Lawn Point	A 3 NM arc centered on Lawn Point.	An arc centered on 53°25'29.7"N 131°54'50.2"W; Radius 3 nautical miles, bearing from seaward 180° - 000° (T.).
32	1	White Rocks	A line joining Browning Entrance light to Hankin Rock light.	A line running from: 53°38'05"N 130°33'48"W to 53°42'28"N 130°24'36"W.

Number	Sector	Name	General Description and Conditions	Geographic Description
33	1	Duckers Islands	A line joining Duckers Islands light to Dupont Island light. If northbound, mariners shall report whether route is through Squally Channel or Whale Channel.	A line running from: 52°55'31.4"N 129°11'28.5"W to 52°56'23.3"N 129°26'10.2"W.
34	1	Wilson Rock	A line across Laredo Channel through Wilson Rock.	A line running 232° - 052° (T) through 52°40'00"N 128°57'55"W.
35	Change	Triangle Island	A line extending 220° (True) from Triangle Island to the limit of the Territorial Sea.	A line running 220° (T) from 50°52'00"N 129°05'00"W to 50°42'11"N 129°18'00"W.
36	Change	Cape Scott	A line joining Cape Scott light with Triangle Island.	A line running from: 50°46'57"N 128°25'32"W to 50°52'00"N 129°05'00"W

Figure 3-3 - Vessel Traffic Services - Prince Rupert - North - Sector 1

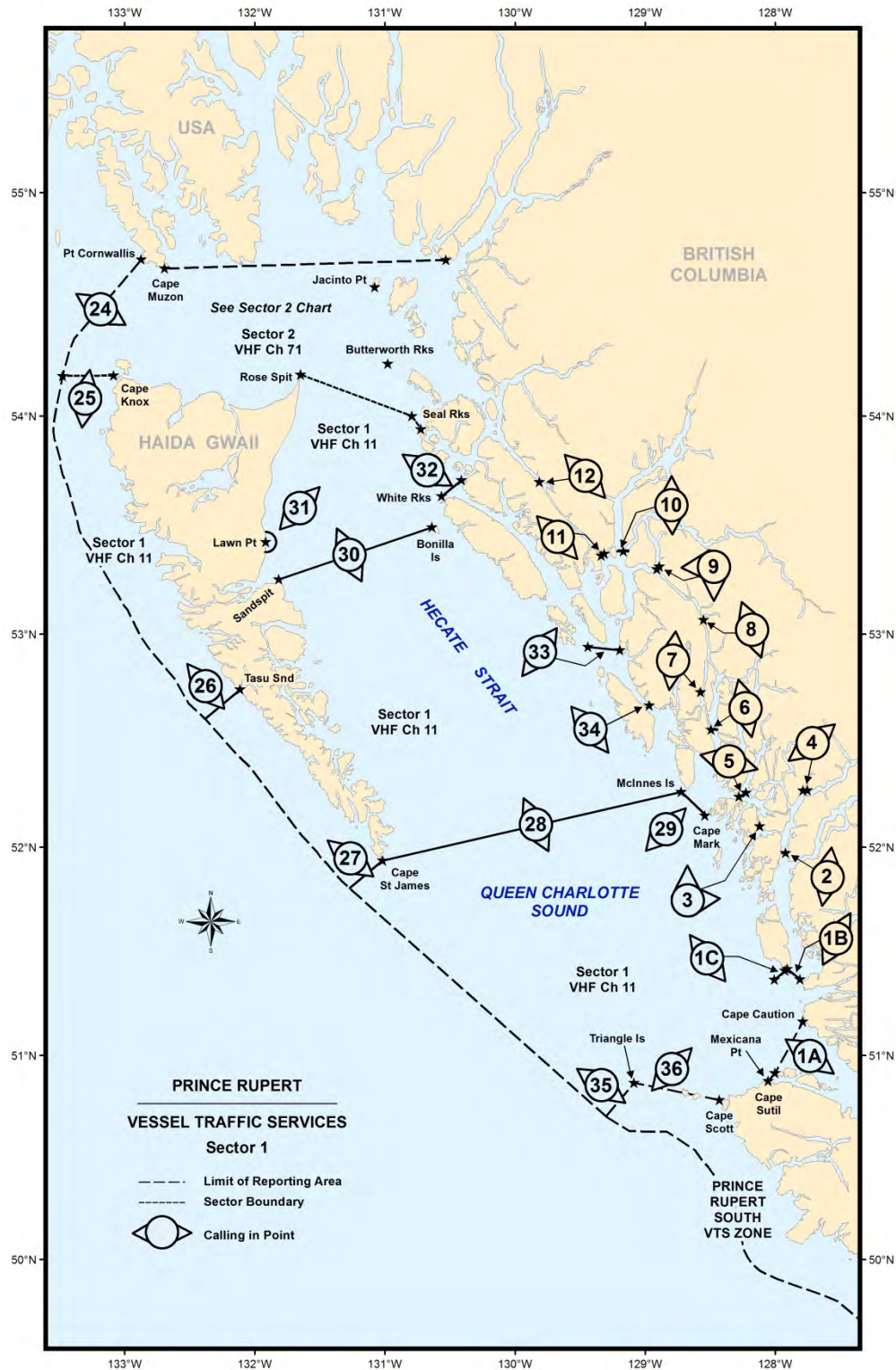


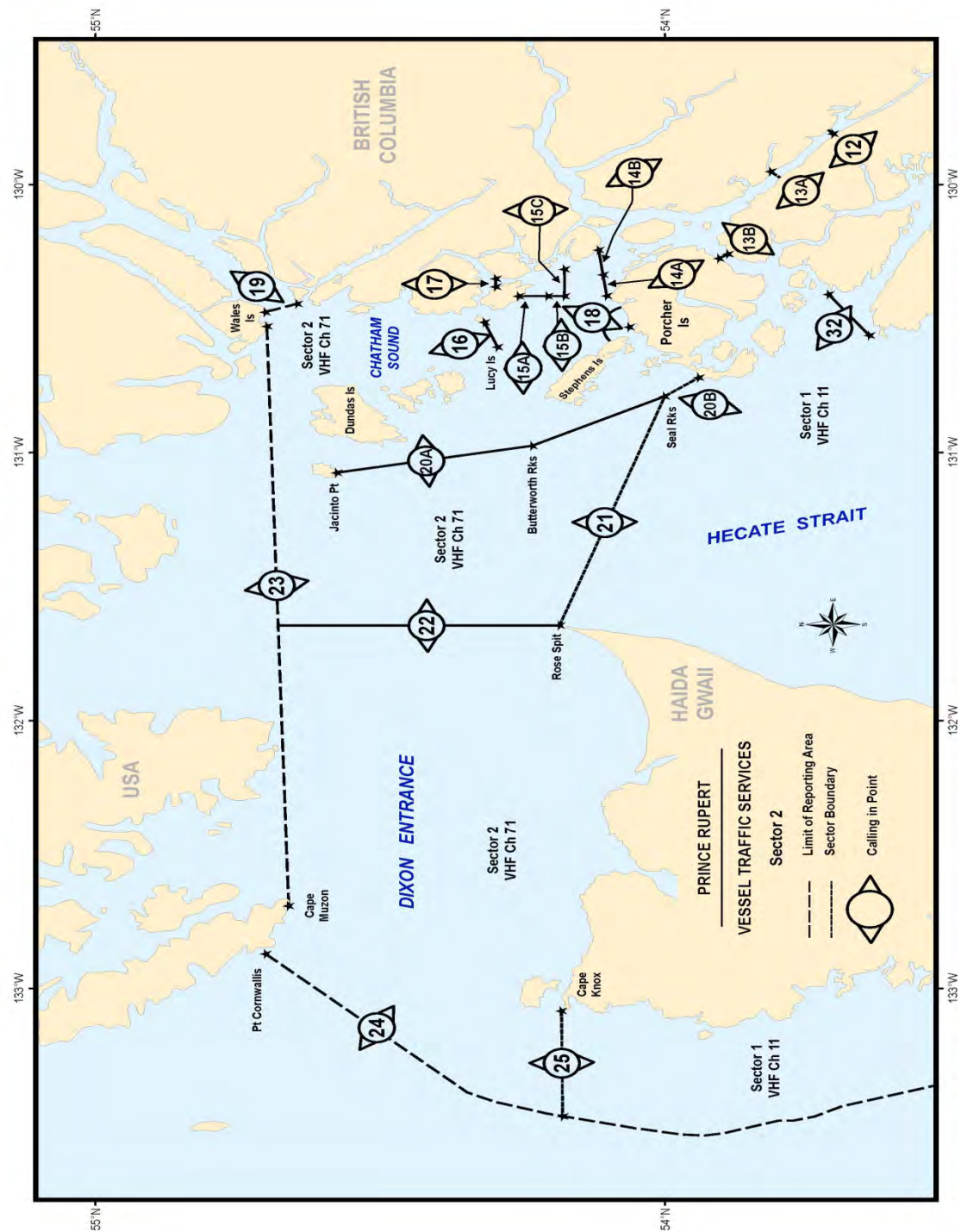
Figure 3-4 - Vessel Traffic Services - Prince Rupert - North - Sector 2


Table 3-5 - Sectors and Boundaries for Prince Rupert - South

Sector	Boundaries
1	The following describes all Canadian waters which are contained in the Prince Rupert Vessel Traffic Services Zone excluding those United States waters within that portion of the Canada/United States Co-operative Vessel Traffic Management System (CVTMS) administered by the Prince Rupert Vessel Traffic Centre bounded by a line drawn from: 48°28'36"N 124°40'00"W, to 48°34'58"N 124°40'00"W, thence following the shoreline to 48°40'00"N 124°51'00"W, to 48°40'11.5"N 124°51'29"W, thence following the shoreline to 48°43'18"N 125°05'54"W, to 48°47'16"N 125°12'59.5"W thence following the shoreline to 48°53'03"N 125°04'24"W, to 48°56'00"N 125°01'50.5"W thence following the shoreline to 48°56'51"N 125°00'02.5"W to 48°57'28"N 124°59'15"W, thence following the shoreline to 49°14'27"N 124°48'46"W, to 49°14'27"N 124°50'13.5"W thence following the shoreline to 49°04'13.5"N 124°51'16"W, to 49°03'20.5"N 124°51'44"W, thence following the shoreline to 48°59'03"N 124°57'54"W, to 48°58'41"N 124°59'34"W, thence following the shoreline to 48°57'19"N 125°01'50"W, to 48°57'57"N 125°04'50.5"W to 48°59'06"N 125°09'39.5"W to 48°58'48"N 125°10'57"W, thence following the shoreline to 49°00'59.5"N 125°18'39"W, to 49°01'54"N 125°19'26.5"W thence following the shoreline to 48°55'18"N 125°30'29"W, to 48°55'18"N 125°32'06.5"W thence following the shoreline to 49°05'41"N 125°53'18"W, to 49°17'03"N 126°13'44"W, to 49°23'00"N 126°32'34"W, to 49°44'57"N 126°58'54"W, to 49°51'35"N 127°08'56"W, to 49°59'49"N 127°27'06"W, to 50°04'48"N 127°48'47"W, thence following the shoreline to 50°13'14"N 127°47'54"W, to 50°19'28"N 127°58'26"W, thence following the shoreline to 50°21'09"N 127°59'27.5"W to 50°26'38"N 128°02'43.5"W to 50°28'11"N 128°06'05"W, thence following the shoreline to 50°38'23.5"N 128°19'35"W, to 50°40'15"N 128°21'40"W, thence following the shoreline to 50°46'57"N 128°25'32"W, to 50°52'00"N 129°05'00"W, thence following a line 220° (T) to the limit of the Territorial Sea 50°42'11"N 129°18'00"W, thence following the Territorial Sea Boundary south eastward to intersect the International boundary at 48°28'36"N 124°40'00"W, thence a line Northward to the Canadian shoreline at 48°34'58"N 124°40'00"W.

Note: Prince Rupert Traffic monitors navigation in the traffic zone using radar and AIS.

Table 3-6 - Identification and Frequencies for Prince Rupert

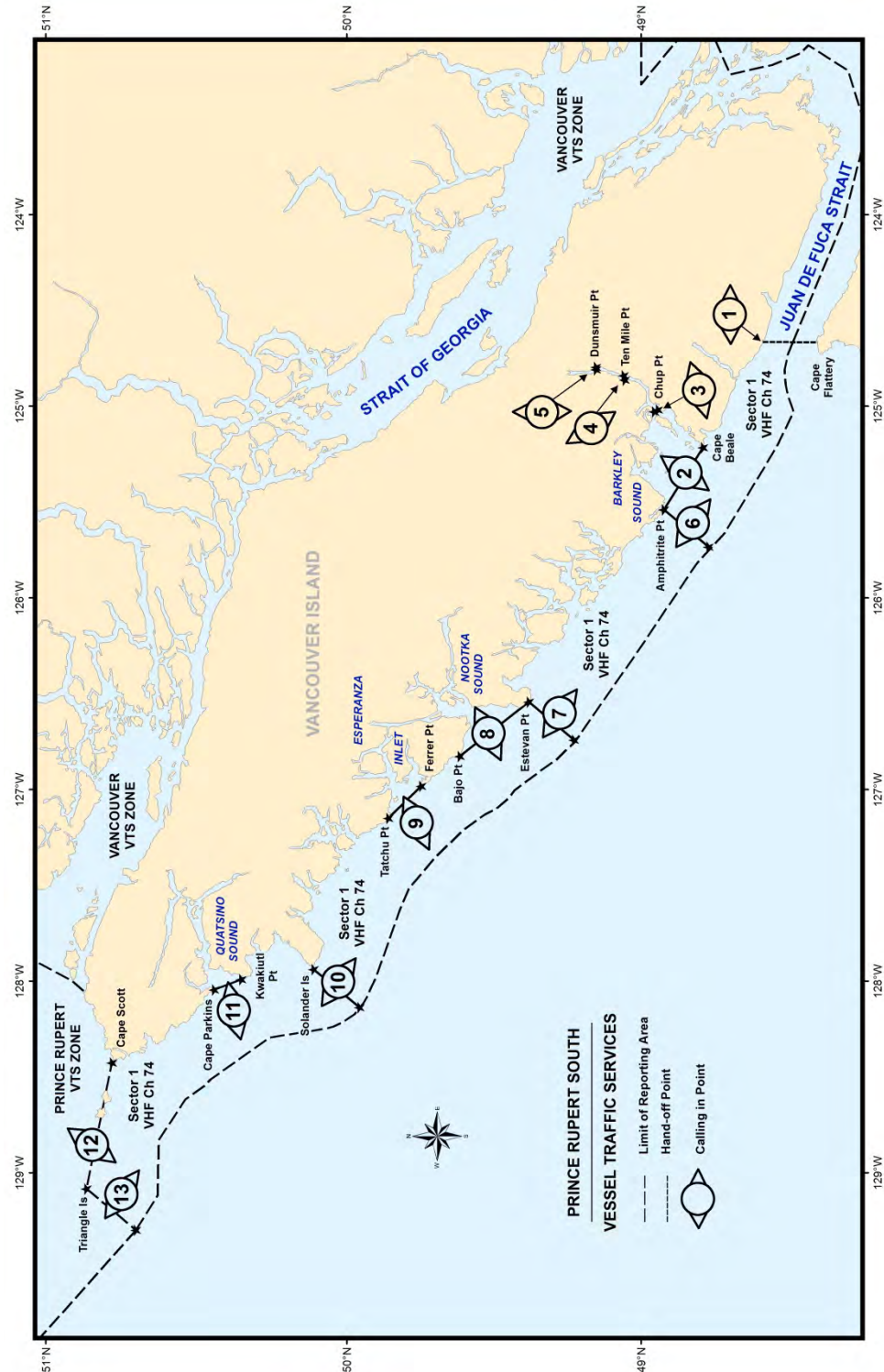
Sector	Identifier	Channel	Frequencies (MHz)
1	"Prince Rupert Traffic"	74	156.725

All times shall be given in Pacific Standard Time or Pacific Daylight Saving Time whichever is in effect.

Table 3-7 - Calling-In-Points for Prince Rupert - South

Number	Sector	Name	General Description and Conditions	Geographic Description
1	1	Zone Limit	A line running north along the meridian 124°40'00"W from the International Boundary to the Vancouver Island shoreline. Administered by Seattle and Prince Rupert Traffic (CVTS).	
2	1	Cape Beale	A line joining Cape Beale light with Amphitrite Point light. Mariners shall indicate whether their course is through Trevor Channel, Imperial Eagle Channel or Loudoun Channel.	A line joining: 48°47'13"N 125°12'51"W to 48°55'17"N 125°32'23"W.
3	1	Chup Point.	A line joining Chup Point with Mutine Point.	A line joining: 48°57'20"N 125°01'37"W to 48°56'33"N 125°01'06"W.

Number	Sector	Name	General Description and Conditions	Geographic Description
4	1	Ten Mile Point	A line extending 256° (True) from Ten Mile Point light to the opposite shore of Alberni Inlet.	A line extending 256° (T) from 49°03'34"N 124°50'22"W to 49°03'20.5"N 124°51'44"W.
5	1	Dunsmuir Point	A line extending 090° (True) from Dunsmuir Point light to the opposite shore of Alberni Inlet.	A line extending 090° (T) from 49°09'16"N 124°48'26"W to 49°09'16"N 124°47'42"W.
6	1	Amphitrite Point	A line extending 220° (True) from Amphitrite Point light to the limit of the Territorial Sea.	A line extending 220° (T) from 48°55'17"N 125°32'23"W to 48°46'06"N 125°44'02"W.
7	1	Estevan Point	A line extending 220° (True) from Estevan Point light to the limit of the Territorial Sea.	A line extending 220° (T) from 49°23'00"N 126°32'32"W to 49°13'47"N 126°44'25.5"W.
8	1	Nootka Sound	A line joining Estevan Point light and Bajo Point.	A line joining: 49°23'00"N 126°32'32"W to 49°37'06"N 126°49'35"W.
9	1	Esperanza Inlet	A line joining Ferrer Point and Tatchu Point.	A line joining: 49°44'57"N 126°58'54"W to 49°51'35"N 127°08'56"W.
10	1	Solander Island	A line extending 220° (True) from Solander Island light to the limit of the Territorial Sea.	A line extending 220° (T) from 50°06'40.5"N 127°56'17"W to 49°57'26"N 128°08'16"W.
11	1	Kains Island (Quatsino Sound)	A line joining Kwakiutl Point and Cape Parkins.	A line joining: 50°21'09"N 127°59'27.5"W to 50°26'38"N 128°02'43.5"W.
12	1	Cape Scott Triangle Island	A line extending 281° (True) from Cape Scott light, passing through Cox and Lanz Islands to Triangle Island.	A line extending 281° (T) from 50°46'57"N 128°25'32"W to 50°52'00"N 129°05'00"W.
13	1	Zone Limit	A line extending 220° (True) from Triangle Island to the limit of the Territorial Sea.	A line extending 220° (T) from 50°52'00"N 129°05'00"W to 50°42'11"N 129°18'00"W.

Figure 3-5 - Vessel Traffic Services - Prince Rupert - South - Sector 1


3.11.2 Victoria**Table 3-8 - Sectors and Boundaries for Victoria**

Sector	Boundaries
1	All Canadian waters north of and included within a line from the shoreline of Vancouver Island at 48°34'58"N 124°40'00"W; southward along the meridian of longitude 124°40'00"W, to a point which intersects the International Boundary; thence following the International Boundary eastward and northward through the waters known as the Strait of Juan de Fuca, Haro Strait, Boundary Passage, and the Strait of Georgia to a point which intersects the Canadian shoreline at 49°00'00"N 123°05'20"W; thence to Roberts Bank light 49°05'16"N 123°18'31.5"W; thence to Sandheads light 49°06'23"N 123°18'04"W; thence to the Iona breakwater light 49°12'18"N 123°15'50"W; thence 270° (T) 6.6 nautical miles to 49°12'18"N 123°25'53"W; thence 000° (T) 8.15 nautical miles to Cape Roger Curtis light 49°20'24"N 123°25'53"W; thence 303° (T) 4.8 nautical miles to Gower Point 49°23'01"N 123°32'06"W; thence following the shoreline to a line joining Reception Point light 49°28'15.9"N 123°53'12"W; to Merry Island light 49°28'03.5"N 123°54'40"W; to Ballenas Island light 49°21'02"N 124°09'32"W; to Cottam Point 49°18'57"N 124°12'45"W.
2	All Canadian waters of the south or main arm of the Fraser River east of the Sandheads light 49°06'23"N 123°18'04"W; to a line running 090° (T) from Shoal Point 49°11'45"N 122°54'51"W, to the opposite south shore.
3	All Canadian waters contained north and east of a line from the Iona breakwater light, 49°12'18"N 123°15'50"W; thence 270° (T) 6.6 nautical miles to 49°12'18"N 123°25'53"W; thence 000° (T) 8.15 nautical miles to Cape Roger Curtis light 49°20'24"N 123°25'53"W; thence 303° (T) 4.8 nautical miles to Gower Point 49°23'01"N 123°32'06"W; including all the waters of Howe Sound and Burrard Inlet.
4	All Canadian waters bounded on the south by a line from Reception Point light, 49°28'15.9"N 123°53'12"W; to Merry Island light 49°28'03.5"N 123°54'40"W; to Ballenas Island light 49°21'02"N 124°09'32"W; to Cottam Point 49°18'57"N 124°12'45"W; and bounded on the north by a line from Cape Sutil 50°52'34.23"N 128°3' 7.24"W to Mexicana Point 50° 54'51.96"N 127°59'58.04"W then to Cape Caution 51°09'50"N 127°47'06"W.

Note: Seattle and Victoria Traffic Sectors 1, 2 and 3 monitor navigation in the traffic zone using radar and AIS. Victoria Traffic Sector 4 monitors navigation in the traffic zone using AIS.

Table 3-9 - Identification and Frequencies for Victoria

Sector	Identifier	Channel	Frequency (MHz)
1	"Seattle Traffic" (CIP 1, 3, 5, and 8)	05A	156.25
1	"Victoria Traffic"	11	156.55
2	"Victoria Traffic"	74	156.725
3	"Victoria Traffic"	12	156.6
4	"Victoria Traffic"	71	156.575

All times shall be given in Pacific Standard Time or Pacific Daylight Saving Time whichever is in effect.

3.11.2.1 Special Operating Procedures

Outbound Vessels at Brotchie Ledge

Pilots are requested to advise Victoria Traffic of the outbound vessel's ETA for Race Rocks, when possible.

Point Grey / Point Atkinson

Inbound vessels will initiate a broadcast at a line joining Point Grey/Point Atkinson indicating an ETA for First Narrows. (Victoria Traffic will only respond if there is traffic to report.)

Table 3-10 - Calling-In-Points for Victoria

Number	Sector	Name	General Description and Conditions	Geographic Description
1	Change	Zone Limit	A line running north along the meridian 124 40 00W from the International Boundary to the Vancouver Island shoreline. Administered by Seattle and Prince Rupert Traffic (CVTS).	A line running north from 48°28'36"N 124°40'00"W to 48°34'58"N 124°40'00"W.
3	Change	Race Rocks	A line running 090° -270° (True) through Race Rocks light. Administered by Seattle and Victoria Traffic (CVTS).	A line running 090° - 270° (T) through 48°17'54"N 123°31'54"W.
4	1	Buoy "VH"	A line running 000° -180° (True) through buoy "VH".	A line running 000° -180° (T) through 48°22'32"N 123°23'29"W.
5	Change	Hein Bank	A line joining Hein Bank with Cattle Point light, San Juan Island. Administered by Seattle and Victoria Traffic (CVTS).	A line running from: 48°22'00"N 123°02'01"W to 48°27'03"N 122°57'45"W.
6	1	Turn Point	3 NM before reaching Turn Point light.	A circle centered on 48°41'20"N 123°14'10"W, Radius 3 nautical miles.
7	1	East Point	A line joining East Point light, Saturna Island with Patos Island light. Mariners are encouraged to call 3NM from East Point light when entering or exiting Boundary Pass.	A line running from: 48°47'00"N 123°02'42"W to 48°47'24"N 122°58'13"W.
8	Change	Patos Island	A line joining, Patos Island light with Alden Bank light and gong buoy "A". Administered by Seattle and Victoria Traffic (CVTS).	A line running from: 48°47'24"N 122°58'13"W to 48°50'24"N 122°52'32"W.
9	1	At Portlock Point	At Portlock Point.	A line running 090° - 270° (T) through 48°49'41"N 123°21'02"W.
10	1	Peile Point	At Peile Point light.	A line running 045° - 225° (T) through 48°51'00"N 123°24'14"W.

Number	Sector	Name	General Description and Conditions	Geographic Description
11	1	Active Pass	Approaching from the Strait of Georgia, 3NM Northeast of Georgina Point light. Entering Strait of Georgia when clear of Active Pass.	An arc centered on 48°52'24.5"N 123°17'24.5"W Radius 3 nautical miles.
12	Change	Sandheads	At Sandheads light.	A line running 000° - 180° (T) through 49°06'23"N 123°18'04"W.
12A	2	Woodward Island (Crown Forest)	At Woodward Island light at N.E. end of Island.	A line running 000° - 180° (T) through 49°06'23.5"N 123°07'29.5"W.
12B	2	La Farge	At La Farge Cement Plant.	A line running 157° - 337° (T) through 49°09'16.5"N 123°00'15"W.
12C	Change	Shoal Point Zone Limit	At Shoal Point Limit of Sector 2 – Victoria Traffic.	A line running 090° - 270° (T) through 49°11'45"N 122°54'51"W.
13	1	West Porlier Pass	3 NM before entry to or after exit from Porlier Pass.	An arc centered on Virago Rock Sector light LL. 289.3, 49°00'46.5"N 123°35'29.5"W, Radius 3 nautical miles on a line of bearing from seaward 350° - 130° (T).
14	1	East Porlier Pass	3 NM before entry to or after exit from Porlier Pass.	An arc centered on Virago Rock Sector light LL. 289.3, 49°00'46.5"N 123°35'29.5"W, Radius 3 nautical miles on a line of bearing from seaward 180° - 265° (T).
15A	Change	Iona	A line due west of the Iona Breakwater light intersecting with Cape Roger Curtis line (15B).	A line running from: 49°12'18"N 123°15'50"W, to 49°12'18"N 123°25'53"W.
15B	Change	Cape Roger Curtis	A line due south of Cape Roger Curtis intersecting with Iona Breakwater light line (15A).	A line running from: 49°12'18"N 123°25'53"W to 49°20'24"N 123°25'53"W.
15C	Change	Gower Point	A line joining Cape Roger Curtis and Gower Point.	A line running from: 49°20'24"N 123°25'53"W to 49°23'01"N 123°32'06"W.
16	3	Halkett Point	A line joining Halkett Point and the mainland at a point south of Lions Bay.	A line running 090° - 270° (T) from 49°26'43"N 123°19'12"W, to the mainland shoreline.
17	3	Grace Island	A line joining Grace Island light and the mainland at a point south of Langdale.	A line running 090° - 270° (T) from 49°25'50"N 123°26'48"W, to the mainland shoreline.
18	3	Cowan Point Point Atkinson	A line joining Cowan Point light on Bowen Island with Point Atkinson light on the mainland.	A line running from: 49°20'08.5"N 123°21'34.5"W to 49°19'50"N 123°15'48"W.
19	3	Dundarave	2 NM west of Lions Gate Bridge Eastbound only report.	A line running 000° - 180° (T) through buoy "QB" 49°19'02.5"N 123°12'00"W.

Number	Sector	Name	General Description and Conditions	Geographic Description
20	3	Vanterm	A line joining the west end of Vancouver Ocean Terminals with the east end of Burrard Yarrows Corporation Dry Dock. Outbound vessel traffic will be given First Narrows advisory at Vanterm (CIP 20). Vessel traffic departing west of CIP 20 will be given First Narrows advisory on departure. Outbound vessels broadcast position at Burnaby Shoal. An updated traffic advisory will be given as required.	A line running 358° - 178° (T) from 49°17'23"N 123°04'33"W to 49°18'21"N 123°04'37"W.
21	3	Berry Point	A line running 000° -180° (True) from Berry Point light to intersect the opposite north shoreline. Westbound only report.	A line running 000° - 180° (T) from 49°17'43"N 122°59'09"W.
22	3	Roche Point	At Roche Point light.	A line running 000° - 180° (T) through 49°18'02.5"N 122°57'17"W.
23	1	Entrance Island/ Five Fingers Island	A line joining Entrance Island light and Five Fingers Island.	A line running from: 49°12'34"N 123°48'25"W to 49°13'53"N 123°54'52"W.
24	Change	Ballenas Island Merry Island Welcome Passage	A line joining Ballenas Island light and Merry Island light; thence Reception Point light. When northbound, mariners shall indicate whether their route is through Malaspina Strait via Epsom Pt or Welcome Passage, Sabine Channel, Stevens Passage, West of Sisters Island or Ballenas Channel.	A line running from: 49°28'15.9"N 123°53'12"W to 49°28'03.5"N 123°54'40"W to 49°21'02"N 124°09'32"W to 49°18'57"N 124°12'45"W.
25	4	Cape Lazo Powell River	A line joining Cape Lazo light and Powell River Breakwater South Entrance South light. When southbound, mariners shall indicate whether their route is through Malaspina Strait via Epsom Pt or Welcome Passage, Sabine Channel, Stevens Passage, West of Sisters Island or Ballenas Channel.	A line running from: 49°42'24.5"N 124°51'41.5"W to 49°51'36.9"N 124°33'05.7"W.
26	4	Cape Mudge	At Cape Mudge light. If northbound, mariners shall report ETA for Steep Island and Maud Island light.	A line running 090° - 270° (T) through 49°59'56"N 125°11'38"W.

Number	Sector	Name	General Description and Conditions	Geographic Description
27	4	Steep Island	At Steep Island light. If northbound, mariners shall report ETA for Separation Head and update Maud Island light ETA if any change.	A line running 050° - 230° (T) through 50°04'45"N 125°15'06"W.
28	4	Separation Head	At Separation Head. If southbound, mariners shall report ETA for Steep Island and update Maud Island light ETA if any change.	A line running 090° - 270° (T) through 50°10'51"N 125°21'02"W.
29	4	Cinque Island	At Cinque Island light. If southbound, mariners shall report ETA for Separation Head and Maud Island light.	A line running 090° - 270° (T) through 50°17'44"N 125°23'59.5"W.
30	4	Ripple Point	Ripple Point light.	A line running 000° - 180° (T) through 50°22'05"N 125°34'42"W.
31	4	Vansittart Point	Vansittart Point light.	A line running 000° - 180° (T) through 50°22'37"N 125°44'31"W.
32	4	Fanny Island	Fanny Island light.	A line running 045° - 225° (T) through 50°27'13"N 125°59'30"W.
33	4	Boat Bay	Boat Bay light.	A line running 000° - 180° (T) through 50°31'11"N 126°34'37"W.
34	4	Lizard Point	Lizard Point light. When northbound at Lizard Point, mariners shall indicate whether their route is through Goletas Channel, Gordon Channel, Ripple Passage or Richards Channel.	A line running 045° - 225° (T) through 50°40'17.5"N 126°53'36"W.
35	4	Lewis Point	Lewis Point light.	A line running 000° - 180° (T) through 50°33'07"N 126°51'10"W.
36	4	Pulteney Point	3 NM north of Pulteney Point light. When southbound, call 3NM before Pulteney Point light. When northbound, call at Pulteney Point light, mariners shall indicate whether their route is through Goletas Channel, Gordon Channel, Ripple Passage or Richards Channel.	An arc centered on 50°37'51"N 127°09'12"W, Radius 3 nautical miles.
37	4	Doyle Island	Doyle Island light.	A line running 045° - 225° (T) through 50°48'20"N 127°27'32"W.
38	4	Pine Island	Pine Island light.	A line running 045° - 225° (T) through 50°58'33"N 127°43'35"W.

Number	Sector	Name	General Description and Conditions	Geographic Description
39	Change	Cape Caution Cape Sutil	A line from Cape Caution light to Mexicana Point thence to Cape Sutil. When southbound at Cape Caution, mariners shall indicate whether their route is through Scott Channel, Goletas Channel (Nahwitti Bar), Gordon Channel (Pine Island), Bolivar Passage, Ripple Passage or Richards Channel.	A line running from: 51°09'50"N 127°47'06"W to 50°54' 51.96"N 127°59'58.04"W to 50°52'34.23"N 128°3'7.24"W.

Figure 3-6 - Vessel Traffic Services - Vancouver - Sector 1

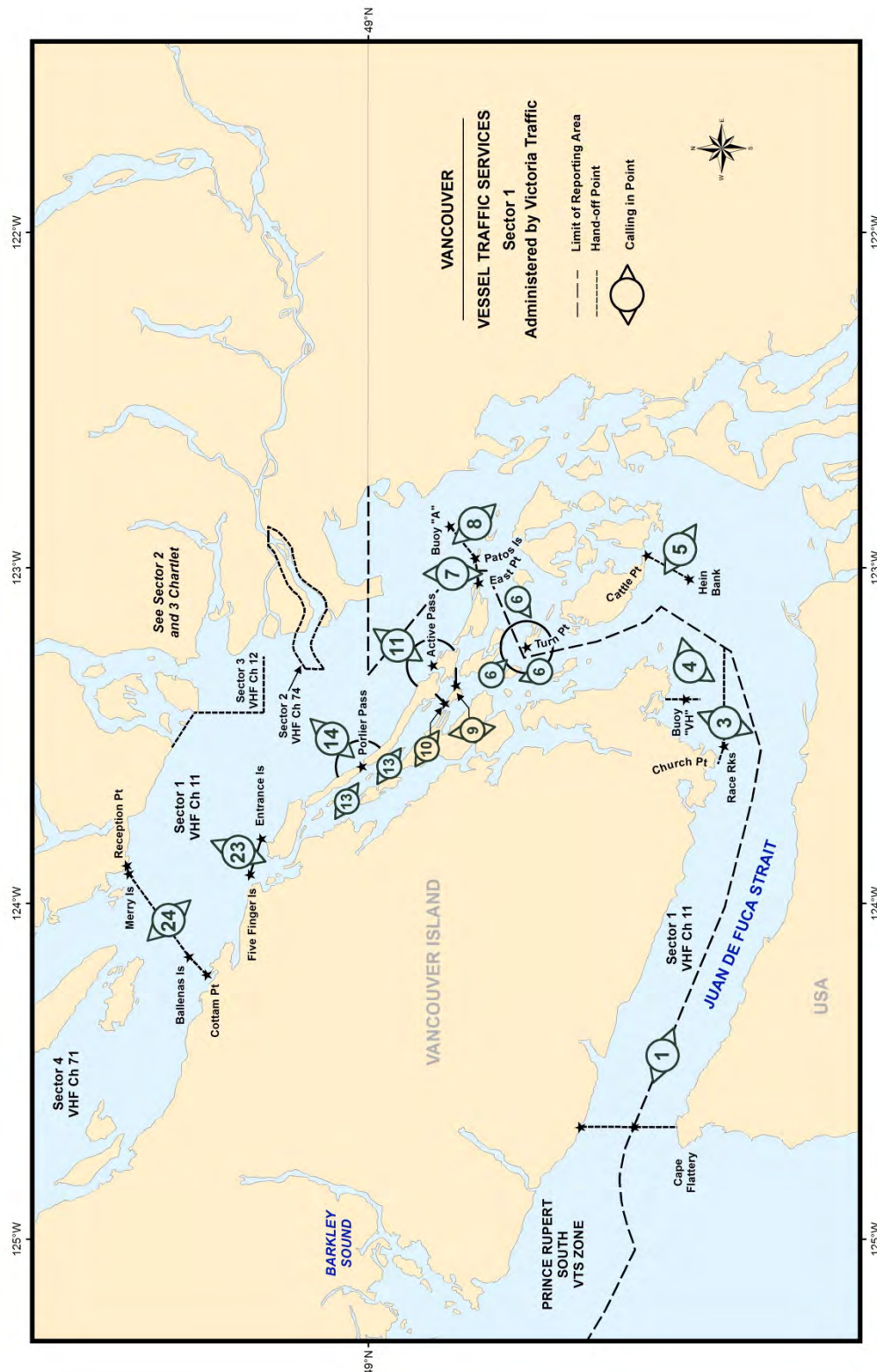


Figure 3-7 - Vessel Traffic Services - Vancouver - Sector 2 and 3

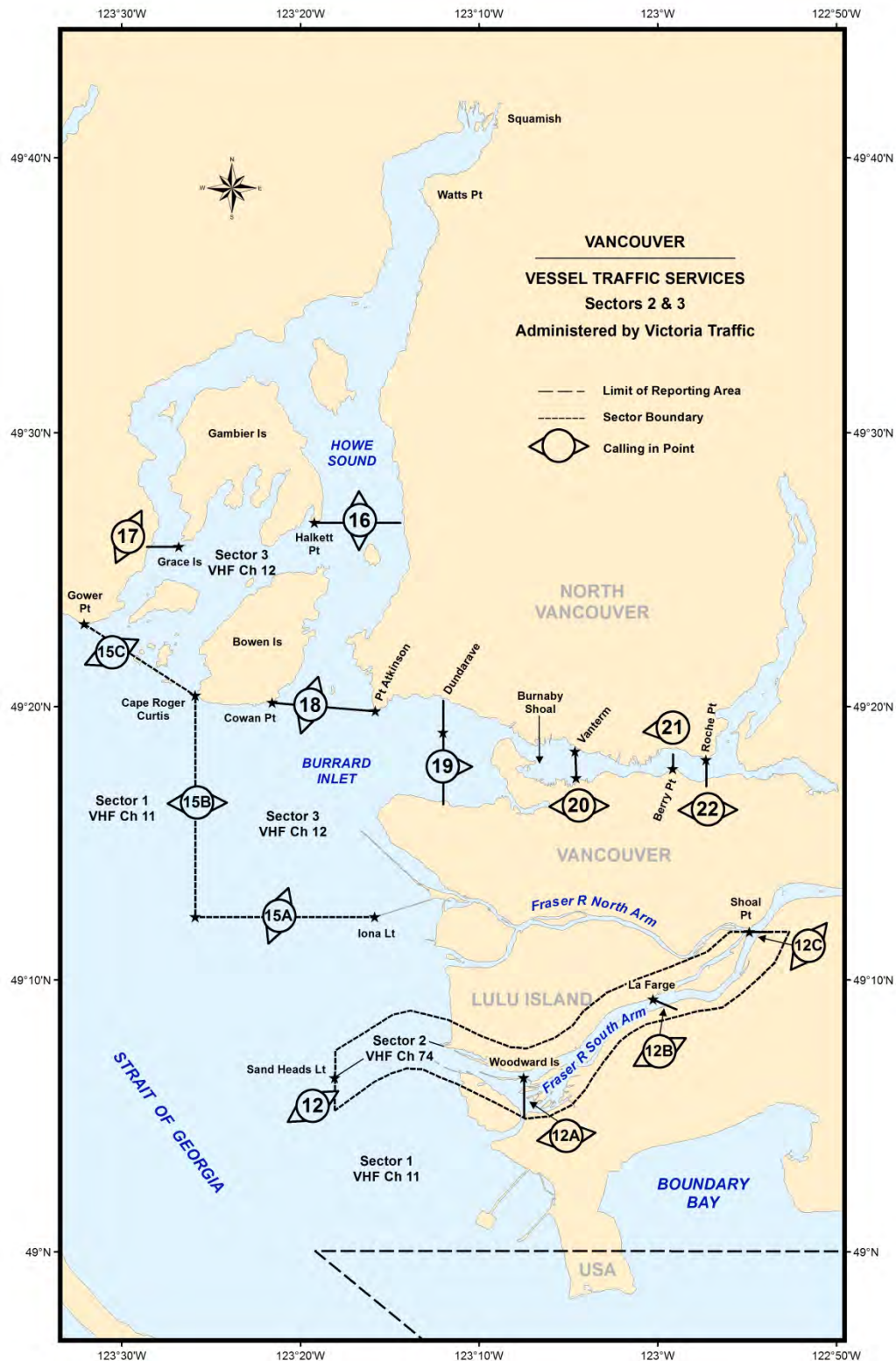
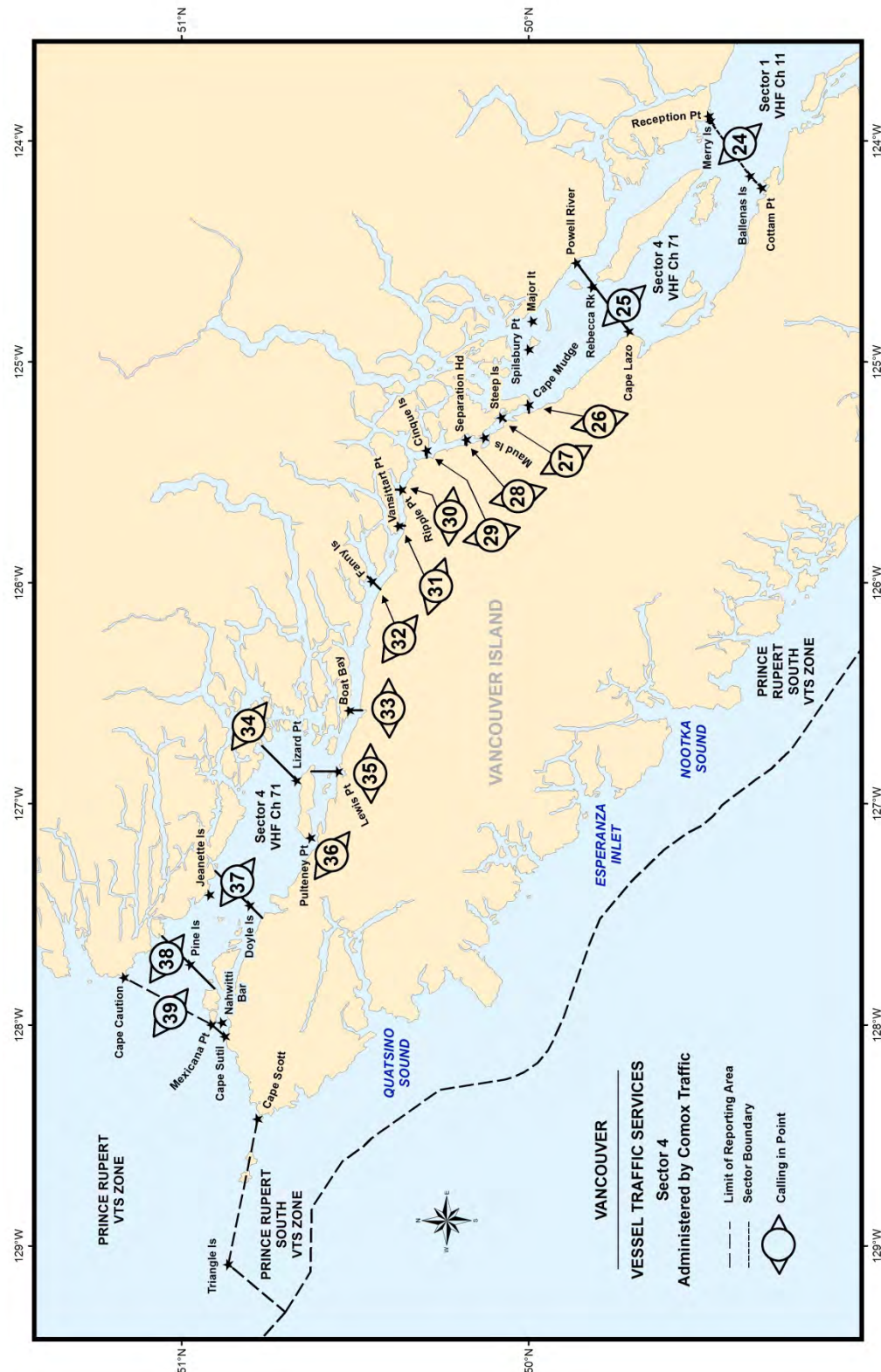


Figure 3-8 - Vessel Traffic Services - Vancouver - Sector 4



PART 4 GENERAL

4.1 PROCEDURES

4.1.1 Radiotelephone Procedures

4.1.1.1 General

In the interest of safe navigation, and especially during bad weather conditions, masters should ensure that a continuous listening watch is maintained on 2182 kHz. Where practicable, and having due regard for Vessel Traffic Services, a listening watch should be maintained on VHF Ch16 (156.8 MHz).

2182 kHz and Ch16 (156.8 MHz) shall only be used for distress, urgency and safety communications and for calling purposes. The class of emission to be used for radiotelephony on the frequency 2182 kHz shall be J3E.

Make initial calls on any of the VHF working frequencies shown in the "Receiving" column of the MCTS Centre listing. The MCTS Centre will then respond on the corresponding frequency shown in the "Transmitting" column. It is necessary to indicate the channel number on the initial call because MCTS officers guard multiple frequencies simultaneously. Before making a call directly on a working frequency, listen for a period long enough to ensure that the channel is not in use. Follow this procedure for radio checks.

If difficulty is experienced in establishing contact with the MCTS Centre, or if contact is desired with another vessel, the initial call may be made on the calling frequency Ch16 in which case the station called will reply on the same frequency. As soon as communication has been established a change must be made to an agreed working frequency and all further communications made on that frequency.

Masters of compulsorily-fitted ships are reminded that a radio log of all distress and urgency communications and safety communications pertaining to their own ship should be kept and maintained onboard their vessels.

4.1.1.2 The following examples illustrate the procedure to be used

Table 4-1 - Initial Call When a Vessel is Attempting to Establish Communication on a Working Frequency with a Specific Station

Item	Spoken
Name of station called (spoken three times)	PRINCE RUPERT COAST GUARD RADIO
The words "THIS IS"	THIS IS
Type, name, radio call sign of vessel calling (spoken three times).	STEAMER FAIRMOUNT CYLD
and Channel	CHANNEL 26
Invitation to reply	OVER

Table 4-2 - Initial call When a Vessel Wishes to Establish Communications with any Station within Range (or within a certain area)

Item	Spoken
General call (spoken three times).	ALL STATIONS (or ALL SHIPS IN JOHNSTONE STRAITS)
The words "THIS IS".	THIS IS
Type, name and radio call sign of vessel calling (spoken three times).	TANKER IMPERIAL CORNWALL/VCVC
Invitation to reply.	OVER

When a station wishes to broadcast information rather than to establish communication, it proceeds with the message instead of giving the invitation to reply.

A radio message from a ship consists of several parts, which shall be transmitted on the working frequency in the following order:

- type, name and radio call sign of the originating ship;
- the date and time the message originated (preferably in UTC. Daylight Saving Time shall not be used) [date and time may be sent as one group, the first two figures indicate the date, the last four the time.];
- the address;
- the text or body of the message; and
- the signature.

Note: Items a) and b) taken together, are known as the "preamble".

Table 4-3 - Example of a Ship to Shore Radio Message

Item	Spoken
Message	FROM M/V WEST WIND, CALL SIGN V2AG
Filed	071225UTC
Address	NORDREG CANADA
Text	1600 UTC REPORT, ANCHORED IN MACKENZIE BAY AWAITING ICEBREAKER SUPPORT.
Signature	MASTER

An acknowledgment of receipt of a message shall not be given until the receiving operator is certain that the transmitted information has been received correctly.

While it is not practical to lay down precise words and phrases for all radiotelephone procedures, the following should be used where applicable:

Table 4-4 - Practical Terms

Terms	Meaning
ACKNOWLEDGE	Let me know that you have received and understood this message.
CORRECTION	An error has been made in this transmission. The correct version is.....
GO AHEAD	Proceed with your message.
OVER	My transmission is ended and I expect a response from you.
OUT	This conversation is ended and no response is expected.
READ BACK	After I have given OVER, repeat this entire message back to me exactly as received.
ROGER	I have received all of your last transmission.
RECEIVED NUMBER	Receipt of your message number..... is acknowledged.
STAND BY	Wait until you hear further from me.
VERIFY	Check with the originator and send the correct version.
WORDS TWICE	As a request - Please send each word twice. As information - I will send each word twice.

4.1.1.3 How are you using your marine radio?

There are over 150 thousand licensed radio stations in British Columbia. Each of these stations is assigned specific frequencies to suit their unique requirements. For the most part, clear and unobstructed communications on the airwaves is possible because most observe the rules that govern radio operation.

But, a serious problem has developed in the use of synthesized two-way radio on board vessels on the West Coast. Certain vessel operators are selecting unauthorized channels on synthesized radio. This is causing severe interference to land based municipal services. In such cases, Industry Canada intends to lay charges under the *Radiocommunication Act* and the *Radiocommunication Regulations*.

Your cooperation in using only assigned marine channels is very important. Your safety, and the safety of others, depends on it.

4.1.1.4 Phonetic Alphabet

When it is necessary to spell out call signs, service abbreviations and words whose spelling might be misinterpreted, the following letter spelling table should be used:

A - ALFA	F - FOXTROT	K - KILO	P - PAPA	U - UNIFORM	Z - ZULU
B - BRAVO	G - GOLF	L - LIMA	Q - QUEBEC	V - VICTOR	
C - CHARLIE	H - HOTEL	M - MIKE	R - ROMEO	W - WHISKEY	
D - DELTA	I - INDIA	N - NOVEMBER	S - SIERRA	X - X-RAY	
E - ECHO	J - JULIET	O - OSCAR	T - TANGO	Y - YANKEE	

4.1.1.5 Times

Times are expressed in four figures, the first two denoting the hour and the last two the minutes, the day starting at midnight with 0000 and ending at 2400. The standard of time (e.g. UTC) is stated at the head of the appropriate column, or against the figures involved.

4.1.1.6 Time Zone Comparison

NST Newfoundland Standard Time
AST Atlantic Standard Time
EST Eastern Standard Time
CST Central Standard Time
MST Mountain Standard Time
PST Pacific Standard Time

To convert from Coordinated Universal Time to Local Standard Time look opposite UTC under the appropriate column. For corresponding Daylight Saving Time, add one hour.

Table 4-5 - Time Zone Comparison

UTC	NST	AST	EST	CST	MST	PST
00:00	20:30	20:00	19:00	18:00	17:00	16:00
01:00	21:30	21:00	20:00	19:00	18:00	17:00
02:00	22:30	22:00	21:00	20:00	19:00	18:00
03:00	23:30	23:00	22:00	21:00	20:00	19:00
04:00	00:30	00:00	23:00	22:00	21:00	20:00
05:00	01:30	01:00	00:00	23:00	22:00	21:00
06:00	02:30	02:00	01:00	00:00	23:00	22:00
07:00	03:30	03:00	02:00	01:00	00:00	23:00
08:00	04:30	04:00	03:00	02:00	01:00	00:00
09:00	05:30	05:00	04:00	03:00	02:00	01:00
10:00	06:30	06:00	05:00	04:00	03:00	02:00
11:00	07:30	07:00	06:00	05:00	04:00	03:00
12:00	08:30	08:00	07:00	06:00	05:00	04:00
13:00	09:30	09:00	08:00	07:00	06:00	05:00
14:00	10:30	10:00	09:00	08:00	07:00	06:00
15:00	11:30	11:00	10:00	09:00	08:00	07:00
16:00	12:30	12:00	11:00	10:00	09:00	08:00
17:00	13:30	13:00	12:00	11:00	10:00	09:00
18:00	14:30	14:00	13:00	12:00	11:00	10:00
19:00	15:30	15:00	14:00	13:00	12:00	11:00
20:00	16:30	16:00	15:00	14:00	13:00	12:00
21:00	17:30	17:00	16:00	15:00	14:00	13:00
22:00	18:30	18:00	17:00	16:00	15:00	14:00
23:00	19:30	19:00	18:00	17:00	16:00	15:00

4.1.1.7 Time Signals

Canada's official time is the responsibility of the National Research Council's Institute for National Measurement Standards, Ottawa, ON. Its short wave radio station CHU, with transmitters located at 45°17'47"N 075°45'22"W is equipped with vertical antennas to give the best possible coverage to the maximum number of Canadian users. The signal is transmitted continuously on 3330 kHz, 7850 kHz and 14670 kHz, upper single-sideband H3E (AM compatible). A cesium atomic clock generates the carrier frequencies (accurate to a part in 10^{11}) and the UTC seconds pulses (accurate to 50 microseconds). The start of each UTC second is marked by the start of 300 cycles of a 1000 Hz tone, with certain omissions and identifications. Every half-minute is marked by omitting the preceding tone (for second 29). In the 9 seconds preceding each minute, the second pulses are shortened to "ticks" to provide a window for the voice announcement, followed by a longer tone. The start of this tone marks the exact minute given by the announcement. This tone is one-half second long, except for the exact hour - when it is one full second long and in this case only is followed by 9 seconds of silence.

The bilingual voice announcement which is heard each minute takes the form:

"CHU Canada - Coordinated Universal Time -- hours -- minutes -- heures -- minutes" for even minutes,

and

"CHU Canada - Temps Universel Coordonné -- heures -- minutes -- heures -- minutes" for odd minutes.

A small number of the longer time announcements use the abbreviation "UTC" rather than the full form.

Following international practice, Canada's official time is based on Coordinated Universal Time (UTC) which is kept within one second of UT1, the time on the Greenwich meridian as used for celestial navigation. Users interested in the ultimate accuracy of celestial navigation can determine UT1 with an accuracy of 0.1 seconds by decoding the difference $DUT1 = UT1 - UTC$, as transmitted by CHU in the internationally accepted code. The number of tenths of a second of DUT1 can be decoded by counting the number of emphasized second pulses that follow each minute. If the emphasized pulses occur for any of the seconds 1 to 8, DUT1 is positive; if the emphasized pulses occur for any of the seconds 9 to 16, DUT1 is negative. CHU emphasizes second pulses by splitting them (0.1 s of tone, 0.1 s of silence, 0.1 s of tone) so that a double tone is heard.

4.1.2 Distress Communications in Radiotelephony

4.1.2.1 Early Notification of Search and Rescue Authorities of Developing Situations

In the interest of ensuring the highest level of safety, mariners should immediately notify the Canadian Coast Guard, through any MCTS Centre of any situation which is or may be developing into a more serious situation requiring assistance from the Search and Rescue (SAR) System. The need for the earliest possible alerting of SAR Authorities to potential maritime emergencies cannot be over-emphasized.

This advice is given in accordance with IMO Circular MSC/Circ.892 and similar advice found in the ICAO/IMO International Aeronautical and Maritime SAR (IAMSAR) Manual Volume III. Further, there have been similar recommendations arising from serious SAR cases in the Canadian SAR Region where masters have failed to provide this notice until after the situation deteriorated.

This notification allows SAR authorities to carry out preliminary and contingency planning that could make a critical difference if the situation worsens. Time lost in the initial stages of a SAR mission may be crucial to its eventual outcome.

It is always best to consider the “worst-case scenario” and to alert SAR authorities accordingly. This notification places no obligations upon the master except to advise the Canadian Coast Guard when the situation has been corrected.

Canadian MCTS Centres provide coverage of all marine distress frequencies, however, each centre does not necessarily guard each frequency (refer to centre listings Part 2). MCTS provides communications between the JRCC/MRSC and the vessel or vessels concerned with the distress.

The radiotelephone distress frequencies are:

- a) 2182 kHz on medium frequency (MF) band;
- b) 156.8 MHz (Ch16) on very high frequency band (VHF); and
- c) any other available frequency on which attention might be attracted if transmissions on 2182 kHz and 156.8 MHz are not possible or successful.

The digital selective calling (DSC) frequencies are:

- a) Ch70 in the VHF band;
- b) 4207.5 kHz;
- c) 6312.0 kHz;
- d) 8414.5 kHz;
- e) 12577 kHz; and
- f) 16804.5 kHz in the High Frequency (HF) bands:

When another craft or person is in distress:

- a) all transmissions capable of interfering with the distress traffic must be stopped;
- b) attention must be concentrated on the distress communications and all information possible intercepted; and
- c) a station in the vicinity of the distressed craft must acknowledge receipt of the distress message if received, giving its own position in relation to that of the craft in distress and stating the action being taken.

Distress communications consist of the:

- a) distress Alert (when using VHF or HF DSC);
- b) distress Signal;
- c) distress Call;
- d) distress Message; and
- e) distress Traffic.

Transmission of a DSC Distress Alert, a Distress Signal and/or a Distress Call announces that the ship, aircraft, other vehicle, or person that is making the transmission is:

- a) threatened by serious and imminent danger and requires immediate assistance; or
- b) aware of another ship, aircraft, other vehicle or person is threatened by serious and imminent danger and requires immediate assistance.

Distress communications should be repeated by the craft in distress until an answer is heard.

The DSC Distress Alert will automatically switch marine radios to the associated distress frequency for the subsequent transmission of the distress signal, the distress call and the distress message.

4.1.2.2 The Alarm Signal

The radiotelephone Alarm Signal consists of the continuous alternate transmission of two audio tones of different pitch for a period of at least thirty seconds but not to exceed one minute. The sound of this tone is similar to that used by some ambulances.

The Alarm Signal is used by Canadian MCTS Centres to alert ships:

- a) that a mayday relay broadcast is about to follow; or
- b) that a Tsunami warning, preceded by the Urgency Signal (PAN PAN) is about to follow; or,
- c) that the transmission of an urgent cyclone warning, preceded by the Safety Signal (SÉCURITÉ), is about to follow.

The Alarm Signal transmitted by the coast radio station will normally be sent for a period not exceeding thirty (30) seconds and will be followed by a ten (10) second continuous tone.

4.1.2.3 The Distress Signal

The Distress Signal consists of the word "MAYDAY".

The Distress Call consists of:

- a) the word "MAYDAY" (spoken three times);
- b) the words "THIS IS" followed by;
- c) the name of the ship in distress (spoken three times);
- d) the call sign or other identification, and
- e) the ship's MMSI (if a DSC distress alert has been sent).

The Distress Call:

- a) should not be addressed to a particular coast radio station or ship; and
- b) has absolute priority over all other transmissions and all coast radio stations and ships that hear this call must cease any transmissions that will interfere with it and must listen on the frequency used for this call.

The Distress Message consists of:

- a) the word "MAYDAY";
- b) the name of the ship in distress;
- c) the call sign or other identification;
- d) the ship's MMSI (if a DSC distress alert has been sent);
- e) the position of the ship in distress;

- f) the nature of the distress;
- g) the kind of assistance needed;
- h) any other useful information which might assist the rescue; and,
- i) the word "OVER", which is an invitation to acknowledge and reply.

The DSC Distress Alert Acknowledgement to an "All Stations" DSC Distress Alert announcement shall normally be made by a MCTS Centre.

Ship stations may acknowledge receipt of a DSC Distress Alert by radiotelephony on the associated distress and calling frequency after a MCTS Centre has had time to initiate contact with the vessel in distress.

4.1.2.4 Distress Traffic

Distress Traffic consists of all messages about the immediate assistance required by the ship in distress. Prior to the transmission of any Distress Traffic, the Distress Signal "MAYDAY" must be sent once before the call. The control of Distress Traffic is the responsibility of the ship in distress or of the ship or coast radio station sending a Distress Message.

A mobile station that learns that another mobile station is in distress may transmit the distress message if:

- a) the station in distress cannot transmit it;
- b) the master or person responsible for the craft carrying the station which intervenes believes that further help is necessary;
- c) although not in a position to render assistance, it has heard a distress message which has not been acknowledged.

In the above situation the distress message relay takes the following form:

- a) the radiotelephone Alarm Signal if possible;
- b) the words "MAYDAY RELAY" (spoken three times);
- c) the words, "ALL STATIONS" or specific MCTS Centre, as appropriate (spoken three times);
- d) the words "THIS IS";
- e) the name of the mobile station repeating the distress message (spoken three times);
- f) the call sign or other identification of the mobile station repeating the distress message;
- g) the MMSI of the mobile station repeating the distress message (if the initial distress alert was sent by DSC);
- h) the repetition of the distress message;
- i) the word, "OVER".

When Distress Traffic has ceased or when silence is no longer necessary the station that has controlled the Distress Traffic must transmit a message on the distress frequency advising that the distress traffic has ceased:

- a) the word "MAYDAY";
- b) the words "ALL STATIONS" (spoken three times);
- c) the words "THIS IS";
- d) the name of the station which has controlled the distress traffic (spoken three times);

- e) the call-sign or other identification of the station which has controlled the distress traffic;
- f) the current Coordinated Universal Time (UTC);
- g) the MMSI (if the initial distress alert was sent by DSC) and the name and call sign of the ship that was in distress and a brief description of the resolution of the distress;
- h) the words "SEELONCE FEENEE";
- i) the word "OUT".

4.1.2.5 Distress Procedure Example

Initiate a VHF or HF DSC Distress Alert.

Then, on the associated distress and calling frequency, the following distress call and distress message should be spoken slowly and distinctly.

Table 4-6 - Example of a Distress Call/Message

Item	Spoken
Distress signal	"MAYDAY" (three times).
The words	"THIS IS."
Name of ship	"Nonsuch" (three times).
MMSI number	"316010115" (if initial distress alert was sent by DSC).
Distress signal	"MAYDAY".
Name of ship	"Nonsuch".
MMSI number	"316010115" (if initial distress alert was sent by DSC).
Position	"Off Iles-St-Marie".
Nature of distress	"Struck rock and taking on water".
Assistance needed	"Require help to abandon ship".
Other useful information	"5 persons on board".
Invitation to acknowledge and reply	"OVER".

4.1.3 Urgency Communications

The DSC Urgency Announcement will automatically switch marine radios to the associated distress frequency for the subsequent transmission of the urgency signal, the urgency call and the urgency message.

The **Urgency Signal** consists of the words "PAN PAN".

The **Urgency Call** consists of:

- a) the words "PAN PAN" (spoken three times);
- b) the words "ALL STATIONS" or station specific call (spoken three times);
- c) the words "THIS IS" followed by;
- d) the name of the station making the call (spoken three times);
- e) the call-sign or other identification; and
- f) the ship's MMSI (if the initial Urgency announcement was sent by DSC).

The urgency signal shall be transmitted only on the authority of the master or the person responsible for the ship, aircraft or other vehicle carrying the mobile station.

The urgency signal indicates that the calling station has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or the safety of a person.

The urgency signal, the urgency call, and the urgency message shall be sent on the distress frequencies 2182 kHz and Ch16 (156.8 MHz). If transmission on these frequencies is impossible, any other available frequency on which attention might be attracted should be used.

The urgency signal has priority over all other communications, except distress, and all stations which hear it must take care not to interfere with the transmission of the message which follows the urgency signal.

Stations which hear the urgency signal must continue to listen for at least three minutes. At the end of this period, if no urgency message has been heard, normal service may be resumed. However, stations which are in communication on frequencies other than those used for transmission of the urgency signal may continue their normal work without interruption provided the urgency message is not addressed "to all stations".

The DSC Urgency Acknowledgement to an "All Stations" DSC Urgency Announcement shall normally be made by a MCTS Centre. Ship stations may acknowledge, by radiotelephony, the receipt of a DSC Urgency Announcement on the associated distress and calling frequency after a MCTS Centre has had time to initiate contact with the vessel in distress.

4.1.4 Safety Communications

The Safety Signal consists of the word "SÉCURITÉ".

The Safety Call consists of:

- a) the word "SÉCURITÉ" (spoken three times);
- b) the words "ALL STATIONS" (spoken three times);
- c) the words "THIS IS" followed by;
- d) the name of the station making the call (spoken three times);
- e) the call-sign or other identification;
- f) the station's MMSI (if the initial announcement was sent by DSC);
- g) a brief description of the context of the "Safety Message";
- h) the channel or frequency for the Safety broadcast;
- i) the word "OUT".

The safety signal indicates that the station is about to transmit an important navigational or meteorological warning. The safety message should be sent on a working frequency, which is announced at the end of the call.

The safety call is transmitted on the distress frequencies 2182 kHz and Ch16 (156.8 MHz). If transmission on these frequencies is impossible, any other available frequency on which attention might be attracted shall be used.

A ship station which receives an "All Stations" DSC Safety Announcement shall not acknowledge receipt.

All stations hearing the safety signal shall shift to the working frequency indicated in the call and listen to the safety message until satisfied it does not concern them.

The **Safety Message** format consists of:

- a) the word "SÉCURITÉ";
- b) the words "ALL STATIONS" (spoken three times);
- c) the words "THIS IS" followed by;
- d) the name of the station making the call (spoken three times);
- e) the call sign or other identification of the transmitting station;
- f) the MMSI of the transmitting station (if the initial announcement was sent by DSC);
- g) the details of the safety message;
- h) the word "OUT".

ATHABASCA – MACKENZIE WATERSHED AREA: DISTRESS, URGENCY, SAFETY
COMMUNICATIONS – USE OF 5803 kHz

The frequency 5803 kHz is the distress and calling frequency for the Athabasca – Mackenzie inland waterways. This frequency should be carried on all commercial vessels and should be monitored at all times when the vessel is in active operation on the waterways.

This frequency will not be used for any type of communication other than distress, urgency and safety communications and for the purpose of establishing initial radio contact with another vessel or shore station. After initial contact is made, for other than distress or emergency communication, the vessel and/or shore station involved will immediately transfer to an established working frequency.

For the provision of relay or assistance in communication to a land station or other vessel, the Canadian Coast Guard will provide, during the shipping season, 24 hour receive and transmit facilities on 5803 kHz from Iqaluit MCTS/VFF.

4.1.5 Aids to Navigation

4.1.5.1 Positions

All positions expressed in latitude and longitude of the radio aids to navigation listed in this publication are approximate and are taken from the largest scale Canadian Hydrographic Service charts, where available, or British Admiralty charts of the vicinity. Mariners should bear in mind when plotting the position of any given aid that it is preferable to use a chart with the aid already located on it than to plot it from a position given in latitude and longitude.

4.1.5.2 Reporting Abnormal Operation of Radio Aids

A marine radio aid observed to be operating abnormally should be reported, as soon as possible to a MCTS Centre.

Reports shall be as complete as possible, giving full details including time, date, the position from which the observation was made, and details and description of conditions, such as weather and reception, prevailing at the time of the observation.

It is also requested that ships report abnormal MCTS Centre operation, such as poor quality of marine telephone calls, unreadability of broadcasts, failure to answer calls, etc.

To ensure prompt corrective action, such reports must include the date, time and position of ship when the observation was made, together with details of prevailing weather and reception conditions.

4.1.5.3 Radio Beacons

Marine radio beacons generally operate in the 285 - 325 kHz. Radio beacon service enables ships fitted with direction finding equipment to take a bearing or to take several consecutive bearings which will provide a fix. See PART 2 for details on individual listings.

4.1.5.4 Radar Beacons (RACONS)

Radar beacons (Racons) may be established at lighthouses, on buoys or at other specific charted locations ashore or afloat to enhance identification and detection range of these features by radar.

Some racons operate only in the X band 9320-9500 MHz, whilst others are dual band X/S, X band plus S band of 2920-3100 MHz. It should also be noted that the slow sweep (SS) type of racon will give a response every 72-120 seconds, whilst the Frequency Agile Racon (FAR) will respond more frequently.

The racon signal appears on the radar display as a line commencing at the approximate range of the racon and extending outwards along its line of bearing from the ship toward the limit of the display. The signal displayed may be a solid line or it may be broken into a code consisting of a series of dots and dashes as shown in relevant publications.

4.2 SYSTEMS

4.2.1 Global Maritime Distress and Safety System in Canada (GMDSS)

4.2.1.1 What is GMDSS?

The Global Maritime Distress and Safety System (GMDSS) is an international system using improved terrestrial and satellite technology and ship-board radio systems. It ensures rapid alerting of shore-based rescue and communications authorities in the event of an emergency. In addition, the system alerts vessels in the immediate vicinity and provides improved means of locating survivors.

GMDSS was developed through the International Maritime Organization (IMO) and represents a significant change in the way maritime safety communications are conducted. While it is mandatory for all ships subject to the *International Convention for the Safety Of Life At Sea* (SOLAS) (cargo ships 300 gross tons or greater and all passenger vessels, on international voyages), GMDSS will impact on all radio-equipped vessels, regardless of size. All SOLAS ships are required to fully comply with GMDSS.

4.2.1.2 Why GMDSS?

GMDSS was developed to **SAVE LIVES** by modernizing and enhancing the current radiocommunications system. By utilizing satellite and digital selective calling technology, GMDSS provides a more effective distress alerting system. It improves the current system by:

- a) increasing the probability that an alert will be sent when a vessel is in distress;
- b) increasing the likelihood that the alert will be received;

- c) increasing the ability to locate survivors;
- d) improving rescue communications and coordination; and
- e) providing mariners with vital maritime safety information.

4.2.1.3 Maritime Safety Information (MSI)

Maritime Safety Information broadcasts, which comprise navigational and meteorological warnings, meteorological forecasts and other safety-related messages, can be received in four different ways in GMDSS:

- a) NAVTEX receivers are fully automatic and receive broadcasts in coastal regions up to 300 nautical miles offshore;
- b) Inmarsat-C terminals receive Enhanced Group Call (EGC) – SafetyNET broadcasts for areas outside NAVTEX coverage;
- c) High Frequency Narrow-Band-Direct-printing (HF NBDP) receivers may be used where service is available to promulgate MSI in areas outside Inmarsat coverage.
- d) VHF marine radio (Sea Area A1) as a medium for obtaining nav/met MSI.

4.2.1.4 GMDSS Sea Areas – International

Although ship-to-ship alerting is still an important function in GMDSS, the emphasis is on two way communications between ships and shore facilities. All GMDSS ships must be capable of communicating with the shore and transmitting a distress alert by two different means. The equipment carried by a GMDSS ship is therefore determined by its area of operation and the availability of shore-based communications services.

Table 4-7 - Four “Sea Areas” Defined in the GMDSS:

Sea Area	Description
Sea Area A1	Within range of shore-based VHF/DSC coast station (40 nautical miles).
Sea Area A2	Within range of shore-based MF/DSC coast station (excluding sea areas A1)(150 nautical miles).
Sea Area A3	Within the coverage of an Inmarsat geostationary satellite (approximately 70°N to 70°S) (excluding sea areas A1 and A2).
Sea Area A4	The remaining areas outside sea areas A1, A2 and A3 (polar regions).

4.2.1.5 GMDSS Sea Areas – Canada

In Canada, as a result of consultations with the Canadian marine industry, it has been decided to implement sea areas A1 on the east and west coasts. Outside of A1 will be an A3 sea area with an A4 sea area in the Arctic.

Consideration was given to the implementation of an A2 sea area, but due to budgetary constraints and the marine industry's preference for sea areas A1 and A3, sea area A2 is not being planned at this time.

4.2.1.6 Communications between GMDSS Vessels and Non-GMDSS Vessels

Since February 1, 1999, GMDSS larger ships have been maintaining an automated listening watch on VHF/DSC Ch70 and MF/DSC 2187.5 kHz. This at times creates the situation, where vessels fitted with traditional, non-GMDSS radio equipment, may have had difficulties alerting or contacting a GMDSS ship. The Canadian Coast Guard is addressing this by monitoring both GMDSS and traditional distress frequencies. Furthermore, the Canadian Coast Guard and Transport Canada encourage all vessels to fit VHF/DSC in the interest of increased safety.

4.2.1.7 Important Safety Notice concerning VHF/DSC

After having received a distress, urgency or safety broadcast announcement on VHF/DSC Ch70 the VHF/DSC equipment will automatically switch the DSC radio to VHF Ch16 for the subsequent voice announcements. Mariners who are required by the *VHF Practices and Procedures Regulations* to monitor a specific VTS sector frequency should return the radio to the appropriate working frequency after determining, on Ch16, the impact of the VHF/DSC alert broadcast announcement on their vessel's' operations.

It has been determined that vessels maintaining a listening watch on a VTS sector frequency, per the requirements of the *VTS Zone Regulations* may, if navigating in congested waters, temporarily discontinue DSC watchkeeping on VHF/DSC Channel 70 until the required manoeuvre has been completed.

Vessels inadvertently or accidentally transmitting a distress/urgency/safety broadcast on VHF/DSC must cancel the distress/urgency/safety broadcast on VHF Ch16. Intentionally sending a false distress alert carries penalties under both the *Canada Shipping Act 2001* and the *Radiocommunication Act*.

VHF/DSC equipment must be programmed with the correct Maritime Mobile Service Identity (MMSI) numbers (reference Section 4.3.12 "Radio Station Licensing and MMSI Numbers", also reference Part 1, Section 1.4 for the MCTS Centres' MMSI numbers).

4.2.1.8 Canadian Coast Guard Marine Communications and Traffic Services (MCTS) Centres

To help ease the transition to GMDSS and bridge the communication gap between the two systems, Canadian Coast Guard MCTS Centres will continue to monitor the current distress and safety channels VHF Ch16 and MF 2182 kHz for the foreseeable future. Once Canada's sea areas have all been implemented, lower cost DSC equipment is available, and it is determined that these services are no longer required, these listening watches may be discontinued. This decision will be evaluated at that time.

The Canadian Coast Guard national VHF-DSC (digital selective calling) network controlled by MCTS Centres can process VHF-DSC "Test Calls" from vessels provided that the marine radio meets the International Telecommunications Union (ITU) standard Recommendation M.493-11 (or higher) "Digital selective-calling system for use in the maritime mobile service".

The Canadian Coast Guard VHF-DSC equipment is configured to automatically acknowledge VHF-DSC test calls within seconds of receipt provided that the MCTS Centre VHF-DSC equipment is not processing higher priority DSC calls.

To supplement the broadcasting of Maritime Safety Information (MSI) on NAVTEX, Inmarsat, SafetyNET and HF NBDP, MCTS Centres will continue MSI broadcasts using the existing VHF continuous marine broadcast system and MF radiotelephony broadcast at advertised times.

4.2.2 Long-Range Identification and Tracking of Vessels Regulations (LRIT)³

INTERPRETATION

Definitions

1. (1) The following definitions apply in these Regulations.

cargo vessel means a vessel that is not a passenger vessel and is of 300 tons gross tonnage or more. (*bâtiment de charge*)

international voyage means a voyage between a port in one country and a port in another country, but does not include a voyage solely on the Great Lakes, the St. Lawrence River and their connecting and tributary waters as far east as the lower exit of the St. Lambert Lock at Montréal. (*voyage international*)

LRIT equipment means information-transmitting equipment for the long-range identification and tracking of a vessel. (*équipement LRIT*)

LRIT information means the information referred to in section 5. (*renseignements LRIT*)

Minister means the Minister of Transport. (*ministre*)

passenger vessel means a vessel that carries more than 12 passengers. (*bâtiment à passagers*)

sea area A1, sea area A2, sea area A3 and sea area A4 have the meanings assigned by regulation 2.1 of Chapter IV of SOLAS. (*zone océanique A1, zone océanique A2, zone océanique A3 et zone océanique A4*)

SOLAS means the *International Convention for the Safety of Life at Sea, 1974*, and the Protocol of 1988 relating to the Convention, as amended from time to time. (*SOLAS*)

When vessel is constructed

(2) For the purpose of these Regulations, a vessel is constructed on the earliest of:

- (a) the day on which its keel is laid;
- (b) the day on which construction identifiable with a specific vessel begins; and
- (c) the day on which assembly of the vessel reaches the lesser of 50 tons and 1% of the estimated mass of all structural material.

APPLICATION

Cargo vessels and passenger vessels

2. (1) These Regulations apply in respect of Canadian vessels everywhere if they:

- (a) are engaged on international voyages; and
- (b) are cargo vessels or passenger vessels.

Exceptions

(2) These Regulations do not apply in respect of:

- (a) pleasure craft; or

³ Reference: [SOR/2010-227](#)

(b) government vessels.

COMPLIANCE

Authorized representative

3. The authorized representative of a vessel shall ensure that the requirements of sections 4 to 10 are met.

LRIT EQUIPMENT

Vessels to be fitted

4. (1) Every vessel shall be fitted with LRIT equipment.

Exception — sea area A1

(2) Subsection (1) does not apply in respect of a vessel that operates exclusively in sea area A1 if it is fitted with an automatic identification system that meets the requirements of and is operated in accordance with section 65 of the *Navigation Safety Regulations*.

Exception — vessels constructed before December 31, 2008

(3) A vessel constructed before December 31, 2008 is not required to be fitted with LRIT equipment before

(a) if the vessel is certified under subsection 51(4) of the *Ship Station (Radio) Technical Regulations, 1999* for operation in sea area A1 and sea area A2 or in sea area A1, sea area A2 and sea area A3, the later of the day on which these Regulations come into force and the day on which its radio installation is first inspected after December 31, 2008; or

(b) if the vessel is certified under subsection 51(4) of the *Ship Station (Radio) Technical Regulations, 1999* for operation in sea area A1, sea area A2, sea area A3 and sea area A4,

(i) while the vessel is operating in sea area A1, sea area A2 or sea area A3, the later of the day on which these Regulations come into force and the day on which its radio installation is first inspected after December 31, 2008, or

(ii) while the vessel is not operating in sea area A1, sea area A2 or sea area A3, the later of the day on which these Regulations come into force and the day on which its radio installation is first inspected after July 1, 2009.

Interpretation

(4) For the purpose of subsection (3), inspection of a vessel's radio installation occurs when it is inspected as required by section 51 of the *Ship Station (Radio) Technical Regulations, 1999*.

Automatic transmission

5. The LRIT equipment fitted on a vessel to meet the requirements of section 4 shall automatically transmit the following information:

(a) the vessel's identity;

(b) the vessel's position, particularly its latitude and longitude; and

(c) the date and time of the transmission.

Type approval or certification

6. (1) The LRIT equipment fitted on a vessel to meet the requirements of section 4 shall be type-approved or certified by the Minister as meeting the performance standards and functional requirements set out in section 4 of the *Revised performance standards and functional requirements for the long-range identification and tracking of ships*, the annex to International Maritime Organization Resolution MSC.263(84), as amended from time to time.

Interpretation

(2) For the purpose of interpreting section 4 of the annex referred to in subsection (1),

(a) "should" shall be read to mean "shall"; and

(b) "Administration" shall be read to mean "Minister".

Switching off equipment

7. (1) The LRIT equipment fitted on a vessel to meet the requirements of section 4 shall be capable of being switched off on board.

Master

(2) The vessel's master may switch off the LRIT equipment

(a) when international agreements, rules or standards provide for the protection of navigational information; and

(b) in exceptional circumstances and for the shortest duration possible when the equipment's operation is considered by the vessel's master to compromise the safety or security of the vessel.

Informing authorities

(3) If the master switches off the LRIT equipment in the case provided for by paragraph (2)(b), the master shall

(a) without undue delay inform a Marine Communications and Traffic Services Centre of the Canadian Coast Guard and, if the vessel is in the waters of a contracting government, the relevant maritime authority of that government; and

(b) make an entry, in the record of navigational activities and incidents maintained in accordance with section 85 of the *Navigation Safety Regulations*, setting out the reasons for the decision and indicating the period during which the equipment was switched off.

Reducing frequency of or temporarily stopping transmission

8. (1) The LRIT equipment fitted on a vessel to meet the requirements of section 4 shall be capable of

(a) being configured to transmit the LRIT information at a reduced frequency of once every 24 hours; and

(b) temporarily stopping the transmission of LRIT information.

Master

(2) While a vessel is undergoing repairs, modifications or conversions in dry dock or in port or is laid up, the vessel's master may, on his or her own initiative, and shall, if directed to do so by the Minister,

(a) reduce the frequency of the transmission of LRIT information to once every 24 hours; or

(b) temporarily stop the transmission of LRIT information.

Informing authorities

(3) If the master reduces the frequency of or temporarily stops the transmission of LRIT information under subsection (2), the master shall

(a) without undue delay inform a Marine Communications and Traffic Services centre of the Canadian Coast Guard and, if the vessel is in the waters of a contracting government, the relevant maritime authority of that government; and

(b) make an entry, in the record of navigational activities and incidents maintained in accordance with section 85 of the *Navigation Safety Regulations*, indicating the period during which the transmission of LRIT information was reduced in frequency or temporarily stopped, and whether or not the Minister directed the action.

Failure of system

9. If the Minister or the Canadian Coast Guard informs the master of a vessel that any part of the system used to receive LRIT information from the vessel or to disseminate the information has failed, the master shall make an entry, in the record of navigational activities and incidents maintained in accordance with section 85 of the *Navigation Safety Regulations*, setting out the date and time the master was informed.

Electromagnetic interference

10. LRIT equipment shall be installed so that electromagnetic interference does not affect the proper functioning of navigational equipment.

Issuance of proof of type approval or of certificate

11. (1) On application, the Minister shall issue a proof of type approval or a certificate for LRIT equipment if the Minister determines that the equipment meets the performance standards and functional requirements referred to in subsection 6(1).

Carry proof or certificate on board

(2) A vessel's master shall ensure that a proof of type approval or a certificate issued under subsection (1) for the LRIT equipment fitted on the vessel to meet the requirements of section 4 is

(a) in the case of a proof of type-approval, carried on board in the form of

(i) a label that is securely affixed to the equipment in a readily visible location, or

(ii) a document that is kept in a readily accessible location; and

(b) in the case of a certificate, carried on board in a readily accessible location.

COMING INTO FORCE

Registration date

12. These regulations come into force on the day on which they are registered.

4.2.3 Emergency Position Indicating Radio Beacons (406 MHz)

It is recommended that a float-free EPIRB be carried on board ships and pleasure crafts operating offshore. To be effective, 406 MHz EPIRBs must be registered with the Canadian Beacon Registry by telephone at 1-800-406-7671; facsimile 1-877-406-3298; or, on the Website at: www.cbr-rcb.ca. You may also reach the Canadian Beacon Registry by email at cbr@sarnet.dnd.ca

Note: Inmarsat discontinued their monitoring service of Inmarsat "E" EPIRB distress alerts as of December 1, 2006.

Mariners should check with Inmarsat for exchange of any currently held Inmarsat "E" EPIRBs. Further, mariners should only purchase and fit COSPAS-SARSAT 406 MHz EPIRBs.

- a) Float-free EPIRBs should not be fitted under ledges or structures that would impede their ability to float free. Do not install the EPIRB with lanyard attached to the superstructure of your vessel.
- b) Both manually activated EPIRBs and float-free EPIRBs should be readily accessible so that in the event of an emergency, it is available for immediate use.
- c) EPIRBs should be tested using the "TEST" button, by the operator every 6 months. This test should be recorded in the radio log.
- d) EPIRB battery packs and hydrostatic release units should be replaced per the manufacturer's recommendations.

A list of 406 MHz EPIRBs approved for use in Canada is available on the Website at: <http://www.tc.gc.ca/eng/marinesafety/oep-navigation-safety-apci-2298.htm>.

4.2.4 Ship Station (Radio) Regulations, 1999

- ☐ Ships ≥ 20 m and certified to carry >12 passengers, or ships ≥ 300 gt
☐ All other ships

- 1) Requirements for Safety Convention ships are not shown as they must comply with the Safety Convention.
- 2) Requirements for ships on inland voyages and minor waters voyages are not shown since there are no new requirements.
- 3) Regulations do not apply to a pleasure yacht not carrying a master or crew for hire, or a tow-boat in a booming ground.

Table 4-8 - Sea Area A1 or VHF

Equipment	Sea Area A1 or VHF
VHF Radio with DSC (SSRR)	Yes -unless ship operates within a VTS Zone, then will have until January 31, 2003, or until the sea area A1 is completed, whichever is latest.
	Yes - by February 1, 2003, or after sea area A1 completed, whichever is latest <ul style="list-style-type: none"> ships ≥ 8m in length and of closed construction, ships carrying >6 passengers, and tow boats -exempted are ships on a home-trade voyage, class IV in a VTS Zone -current VHF radiotelephone provisions remain in effect until then.
Inmarsat Ship Earth Station with EGC, and MF Radio with DSC, or	No
MF/HF Radio with DSC and NBDP (SSRR)	No
NAVTEX Receiver (no change to current requirement – SSRR)	No
	No
EPIRB (float-free) (SSRR)	Yes
	Yes <ul style="list-style-type: none"> if ≥ 20 m (and beyond home trade IV voyage) if tug >5gt and <20 m if voyage >50 miles long and >2 miles from shore if ≥ 15gt and go beyond home-trade III voyage limits i.e., 20 miles from shore by April 1, 2001 if ≥ 8m and go beyond home-trade III voyage limits on April 1, 2002 (Note: EPIRB does not have to be float-free if less than 15gt) -exempted are ships on home-trade voyages, class IV or minor waters voyages.
Radar Transponder(s) (SARTs) (SSRR, Life Saving Equipment Regulations, Large Fishing Vessel Inspection Regulations, and Small Fishing Vessel Inspection Regulations)	No
	Yes 1 if 20m in length or over on > HTII voyages; but, can continue to carry 2 Class II EPIRBs instead until one of the batteries expire.

Equipment	Sea Area A1 or VHF
Survival Craft VHF Portable Radio (Life Saving Equipment Regulations, Large Fishing Vessel Inspection Regulations)	Yes 3 are required, unless ship is certified to carry ≤12 passengers and is <500gt, then carry 2 (new requirement for ships on home-trade voyages, class III).
	No
Reserve Source of Energy	Yes
	Yes if ship is ≥20m, is carrying more than 6 passengers, or is a tow-boat.

Table 4-9 - Sea Area A3

Equipment	Sea Area A3
VHF Radio with DSC (SSRR)	Yes -unless ship operates within a VTS Zone, then will have until January 31, 2003, or until the sea area A1 is completed, whichever is latest.
	Yes - by February 1, 2003, or after sea area A1 completed, whichever is latest <ul style="list-style-type: none"> ships ≥8m in length and of closed construction, ships carrying >6 passengers, and tow boats -exempted are ships on a home-trade voyage, class IV in a VTS Zone -current VHF radiotelephone provisions remain in effect until then.
Inmarsat Ship Earth Station with EGC, and MF Radio with DSC, or	Yes (EGC required only if outside NAVTEX range)
MF/HF Radio with DSC and NBDP (SSRR)	No
NAVTEX Receiver (no change to current requirement – SSRR)	Yes
	Yes <ul style="list-style-type: none"> if ≥ 150gt tow boat if ≥ 300gt cargo ship if ≥24m fishing, or if passenger ship
EPIRB (float-free) (SSRR)	Yes
	Yes <ul style="list-style-type: none"> if ≥20 m (and beyond home trade IV voyage) if tug >5gt and <20 m if voyage >50 miles long and >2 miles from shore if ≥ 15gt and go beyond home-trade III voyage limits i.e., 20 miles from shore by April 1, 2001 if ≥ 8m and go beyond home-trade III voyage limits on April 1, 2002 (Note: EPIRB does not have to be float-free if less than 15gt) -exempted are ships on home-trade voyages, class IV or minor waters voyages.

Equipment	Sea Area A3
Radar Transponder(s) (SARTs) (SSRR, Life Saving Equipment Regulations, Large Fishing Vessel Inspection Regulations, and Small Fishing Vessel Inspection Regulations)	Yes 2 are required, unless ship is certified to carry ≤ 12 passengers and is $<500\text{gt}$, then carry 1
	Yes 1 if 20m in length or over on $>$ HTII voyages; but, can continue to carry 2 Class II EPIRBs instead until one of the batteries expire.
Survival Craft VHF Portable Radio (Life Saving Equipment Regulations, Large Fishing Vessel Inspection Regulations)	Yes 3 are required, unless ship is certified to carry ≤ 12 passengers and is $<500\text{gt}$, then carry 2 (new requirement for ships on home-trade voyages, class III).
	Yes 3 are required if ship is certified to carry >12 passengers and is $>5\text{gt}$.
Reserve Source of Energy	Yes
	Yes if ship is $\geq 20\text{m}$, is carrying more than 6 passengers, or is a tow-boat.

Table 4-10 - Sea Area A4

Equipment	Sea Area A4
VHF Radio with DSC (SSRR)	Yes -unless ship operates within a VTS Zone, then will have until January 31, 2003, or until the sea area A1 is completed, whichever is latest.
	Yes - by February 1, 2003, or after sea area A1 completed, whichever is latest <ul style="list-style-type: none"> ships $\geq 8\text{m}$ in length and of closed construction, ships carrying >6 passengers, and tow boats -exempted are ships on a home-trade voyage, class IV in a VTS Zone -current VHF radiotelephone provisions remain in effect until then.
Inmarsat Ship Earth Station with EGC, and MF Radio with DSC, or MF/HF Radio with DSC and NBDP (SSRR)	Yes MF/HF option only
	No
NAVTEX Receiver (no change to current requirement – SSRR)	No
	No

Equipment	Sea Area A4
EPIRB (float-free) (SSRR)	Yes
	Yes
	<ul style="list-style-type: none"> • if ≥ 20 m (and beyond home trade IV voyage) • if tug > 5gt and < 20 m if voyage > 50 miles long and > 2 miles from shore • if ≥ 15gt and go beyond home-trade III voyage limits i.e., 20 miles from shore by April 1, 2001 • if ≥ 8m and go beyond home-trade III voyage limits on April 1, 2002 (Note: EPIRB does not have to be float-free if less than 15gt) -exempted are ships on home-trade voyages, class IV or minor waters voyages.
Radar Transponder(s) (SARTs) (SSRR, Life Saving Equipment Regulations, Large Fishing Vessel Inspection Regulations, and Small Fishing Vessel Inspection Regulations)	Yes
	2 are required, unless ship is certified to carry ≤ 12 passengers and is < 500 gt, then carry 1
Survival Craft VHF Portable Radio (Life Saving Equipment Regulations, Large Fishing Vessel Inspection Regulations)	Yes
	1 if 20m in length or over on $>$ HTII voyages; but, can continue to carry 2 Class II EPIRBs instead until one of the batteries expire.
	Yes
Reserve Source of Energy	Yes
	if ship is ≥ 20 m, is carrying more than 6 passengers, or is a tow-boat.

DSC: digital selective calling
EGC: enhanced group calling
NBDP: narrow band direct printing

Additional requirements: emergency procedures card, operating and routine maintenance manuals, consumable spare parts, radio publications, time piece, weather facsimile (Arctic), spare antennas (some ships ≥ 20 m).

4.2.5 Guidance for Masters in Distress Situations and Alerting of SAR Authorities

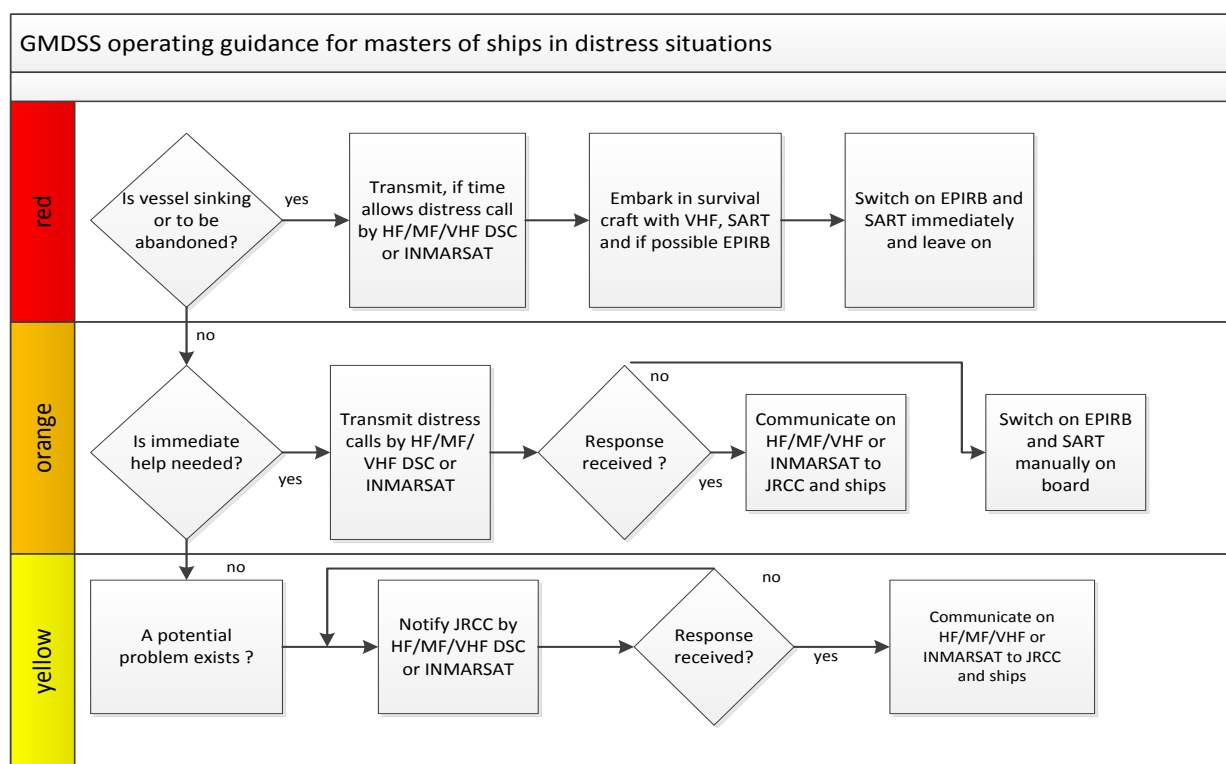
In 1992, the International Maritime Organization (IMO) prepared a flow chart providing GMDSS operating guidance for masters of ships in distress situations (COM/Circ.108). It was recommended that this chart be displayed on the ship's bridge.

Later, another circular (MSC/Circ.892) was prepared to strongly emphasize the importance for ships to alert SAR authorities at the earliest possible moment in any situation that may involve a danger to life or that has the potential of developing into such a situation.

The following is for the mariner's information and guidance:

- GMDSS Operating Guidance for Masters of Ships in Distress Situations; and
- Alerting the Search and Rescue Authorities.

Figure 4-1 - GMDSS Operating Guidance for Masters of Ships in Distress Situations



1. EPIRB should float-free and activate automatically if it cannot be taken into survival craft.

2. Where necessary, ships should use any appropriate means to alert other ships.

3. Nothing above is intended to preclude the use of any and all available means of distress alerting.

RADIO DISTRESS COMMUNICATIONS			
	Digital Selective Calling (DSC)	Radiotelephone	Radiotelex
VHF	Channel 70	Channel 16	
MF	2187.5 kHz	2182 kHz	2174.5 kHz
HF4	4207.5 kHz	4125 kHz	4177.5 kHz
HF6	6312 kHz	6215 kHz	6268 kHz
HF8	8414.5 kHz	8291 kHz	8376.5 kHz
HF12	12577 kHz	12290 kHz	12520 kHz
HF16	16804.5 kHz	16420 kHz	16695 kHz

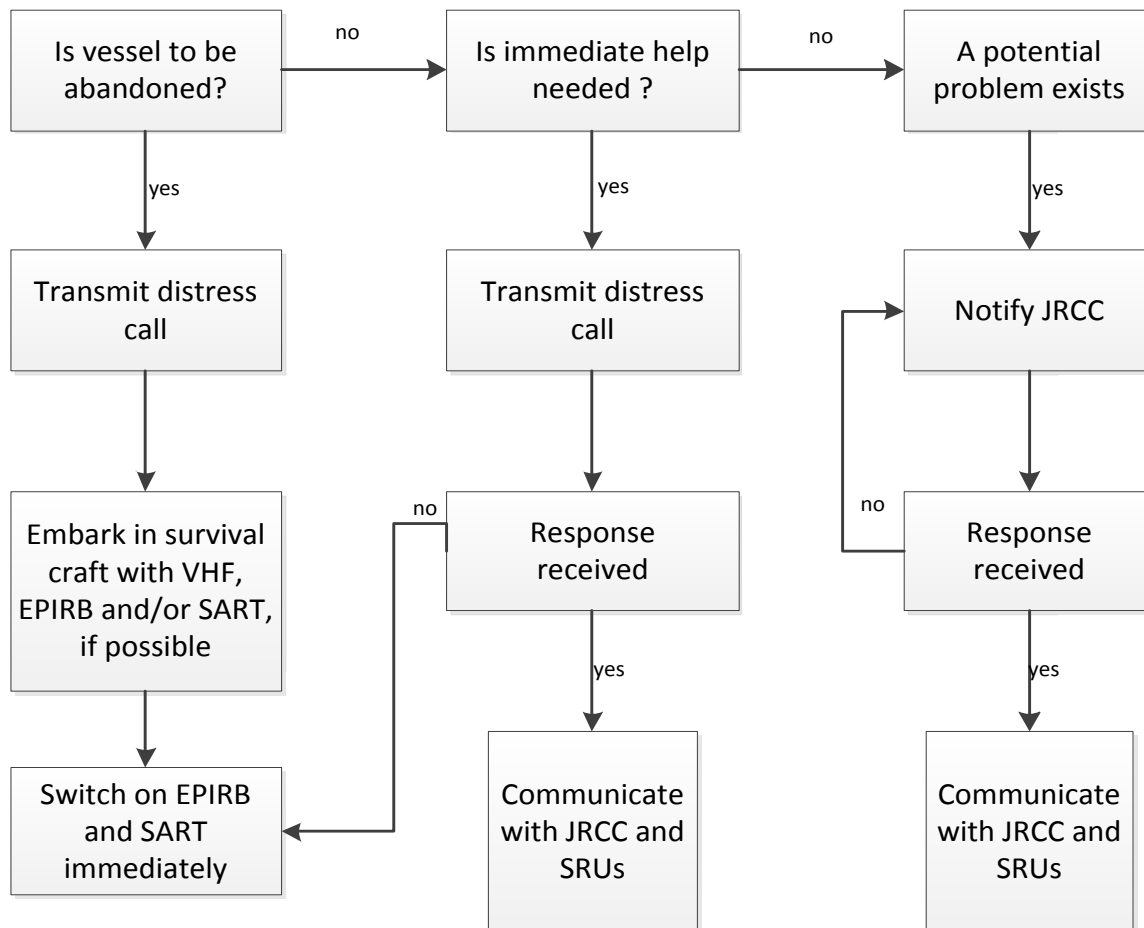
4.2.5.1 Alerting the Search and Rescue Authorities (MSC/Circ.892)

- 1) The need for the earliest possible alerting of the search and rescue (SAR) co-ordination authority to maritime emergencies cannot be over-emphasized.
- 2) It is essential to enable shore-based facilities to respond without delay to any situation which constitutes, or has the potential to constitute, a danger to life. Time lost in the initial stages of an incident may be crucial to its eventual outcome. It cannot be regained.
- 3) Factors to be considered include position (in relation to hazards and to shore-based or other SAR units); time of day; weather conditions (actual and forecast); the number of persons at risk or potentially at risk; specific assistance required, etc.
- 4) It is always best to consider the 'worst case scenario' and to alert the SAR organization accordingly. Depending on the circumstances, the co-ordinating authority may choose to alert or despatch SAR facilities as a precautionary measure and/or to reduce transit times. If assistance is not subsequently required, any such positive response can be easily curtailed. But time lost through delays in notification can never be regained.
- 5) It is therefore essential that the SAR co-ordinating authority be informed immediately of:
 - i) all maritime SAR incidents;
 - ii) any situation which may develop into a SAR incident; and
 - iii) any incident which may involve or lead to danger to life, the environment or to property which may require action from the SAR services and/or other authorities.

Operating guidance for masters of ships in distress or urgency situations. [To be considered in conjunction with IMO publication 969 - GMDSS Operating Guidance for Masters of Ships in Distress Situations (COM/Circ.108 of 23 January 1992).]

- 6) The following diagram shows standard procedures for distress/urgency message routing. It is for guidance only, and does not preclude the use of any and all available means of distress alerting.

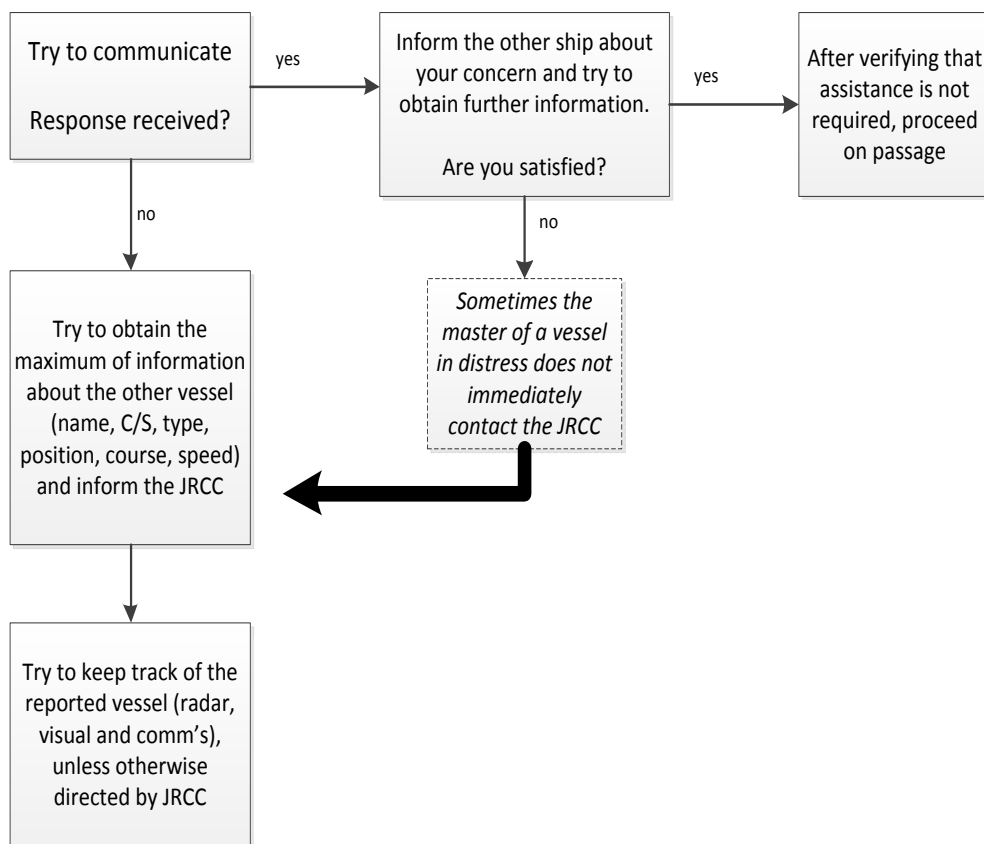
Figure 4-2 - Operating Guidance for Masters of Ships in Distress or Urgency Situations



Operation guidance for masters of ships observing another vessel apparently in danger

- 7) The following diagram shows suggested procedures for reporting concerns about the safety of another vessel (fire, smoke, adrift, navigating towards a danger, etc.).

Figure 4-3 - Operation Guidance for Masters of Ships Observing another Vessel Apparently in Danger



Note: For local JRCC contact information, refer to Section SEARCH AND RESCUE IN CANADIAN AREAS OF RESPONSIBILITY (Part 4 of this publication).

4.2.5.2 False Distress Alerts and Distress Relay Alerts

The GMDSS has been in force for ships on international voyages since February 1, 1999, following its seven-year phase-in. During this time, considerable experience was gained internationally in the operation of the GMDSS. While the GMDSS has proven its overall effectiveness, the high number of accidental distress alert activations and the inappropriate and unintended Digital Selective Calling (DSC) distress relay alerts, have detracted from the efficiency of the system. Excessive false alerts and distress relay alerts can create an unnecessary burden and workload for SAR services. They may also cause confusion and undermine mariner's confidence in the GMDSS. They could potentially have a serious impact on real distress situations.

With the aim of minimizing the number of false alerts and distress alert relays, the following information is provided:

- 1) "Instructions for Mariners and Others on How to Cancel a False Alert" (appendix to IMO Resolution A.814(19) entitled Guidelines for the Avoidance of False Distress Alerts);
- 2) "Procedure for Responding to DSC Distress Alerts by Ships" (COMSAR/Cir.25).

4.2.5.3 Instructions for Mariners and Others⁴ on How to Cancel a False Distress Alert⁵

(Appendix to IMO Resolution A.814(19))

DSC

1 VHF

1. switch off transmitter immediately⁶;
2. switch equipment on and set to Channel 16; and
3. make broadcast to "All Stations" giving the ship's name, call sign and MMSI number, and cancel the false distress alert.

Example

All Stations, All Stations, All Stations
This is NAME, CALL SIGN
MMSI NUMBER, POSITION

Cancel my distress of
DATE, TIME, UTC
= Master NAME, CALL SIGN
MMSI NUMBER, DATE, TIME UTC.

2 MF

1. switch off equipment immediately⁷;
2. switch equipment on and tune for radiotelephony transmission on 2182 kHz; and
3. make broadcast to "All Stations" giving the ship's name, call sign and MMSI number, and cancel the false distress alert.

Example

All Stations, All Stations, All Stations
This is NAME, CALL SIGN
MMSI NUMBER, POSITION.

Cancel my distress alert of
DATE, TIME, UTC,
= Master NAME, CALL SIGN,
MMSI NUMBER DATE, TIME UTC.

3 HF

As for MF, but the alert must be cancelled on all the frequency bands on which it was transmitted. Hence, in stage 2.2 the transmitter should be tuned consecutively to the radiotelephony distress frequencies in the 4, 6, 8, 12 and 16 MHz bands, as necessary.

⁴ Appropriate signals should precede these messages in accordance with the *ITU Radio Regulations* Chapter N1X.

⁵ [Appendix to IMO Resolution A.814 \(19\)](#)

⁶ This applies when the false alert is detected during transmission.

⁷ This applies when the false alert is detected during transmission.

4 Inmarsat-C

Notify the appropriate JRCC to cancel the alert by sending a distress priority message via the same CES through which the false distress alert was sent.

NAME, CALL SIGN, IDENTITY NUMBER,
POSITION

Cancel my Inmarsat-C distress
alert of DATE, TIME UTC
= Master +

5 EPIRBs

If for any reason an EPIRB is activated accidentally, the ship should contact the nearest coast station or an appropriate coast earth station or JRCC and cancel the distress alert.

6 General

- 6.1 Notwithstanding the above, ships may use any means available to them to inform the appropriate authorities that a false distress alert has been transmitted and should be cancelled.
- 6.2 No action will normally be taken against any ship or mariner for reporting and cancelling a false distress alert. However, in view of the serious consequences of false alerts, and the strict ban on their transmission, Governments may prosecute in cases of repeated violations.

4.2.6 Procedure for Responding to DSC Distress Alerts by Ships⁸

(COMSAR/Circ.25)

1. Introduction

The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR) decided that Digital Selective Calling (DSC) relays of distress alerts on all shipborne DSC equipment should be reduced and prepared a procedure for responding to VHF/MF and HF distress alerts, given in flow diagrams 1 and 2 which follow, recommending that it be displayed on the ship's bridge as A4 size posters. It also prepared the following guidance.

2. Distress relays

- 2.1 Radio personnel serving on ships should be made aware of the consequences of transmitting a distress relay call and of routing a DSC distress relay alert to other than coast stations (CS).
- 2.2 The number of unintended activations of DSC distress alerts and DSC distress relay alerts creates extra work load and confusion to (M) JRCCs and also causing delay in the response-time. The original distress alert from a ship in distress should not be disrupted by other ships, by transmitting a DSC distress relay alert.
- 2.3 Recommendation ITU-R M.541-8 on Operational procedures for the use of DSC equipment in the Maritime Mobile Service identifies only two situations in which a ship would transmit a distress relay call (distress relay alert):
 - i. on receiving a distress alert on a HF channel, which is not acknowledged by a coast station within 5 minutes. The distress relay call should be addressed to the appropriate coast station (Annex 1, paragraph 3.4.2 and Annex 3, paragraph 6.1.4); and
 - ii. on knowing that another ship in distress is not itself able to transmit the distress alert and the Master of the ship considers that further help is necessary. The distress relay call should be addressed to "all ships" or to the appropriate coast station (Annex 3, paragraph 1.4).
- 2.4 In no case is a ship permitted to transmit a DSC distress relay call on receipt of a DSC distress alert on either VHF or MF channels.
- 2.5 Distress relay calls on HF channels should be initiated manually.
- 2.6 Compliance with operational and technical provisions above would prevent transmissions of inappropriate distress relay calls.

3. All coast stations call

- 3.1 Recommendation ITU-R M.493-9 on DSC systems for use in the Maritime Mobile Service provides for "group calls" an address consisting of the characters corresponding to the station's Maritime Mobile Service identity (MMSI) and a number of administrations have already assigned a "group call" MMSI to their coast stations in addition to the coast station's individual MMSI.
- 3.2 By multilateral agreements, a "group call" MMSI could be assigned to all coast stations of a specific region, e.g., a JRCC area and could comply with IMO's requirement without need of introducing further modifications to GMDSS equipment.

⁸ [COMSAR/Circ.25](#)

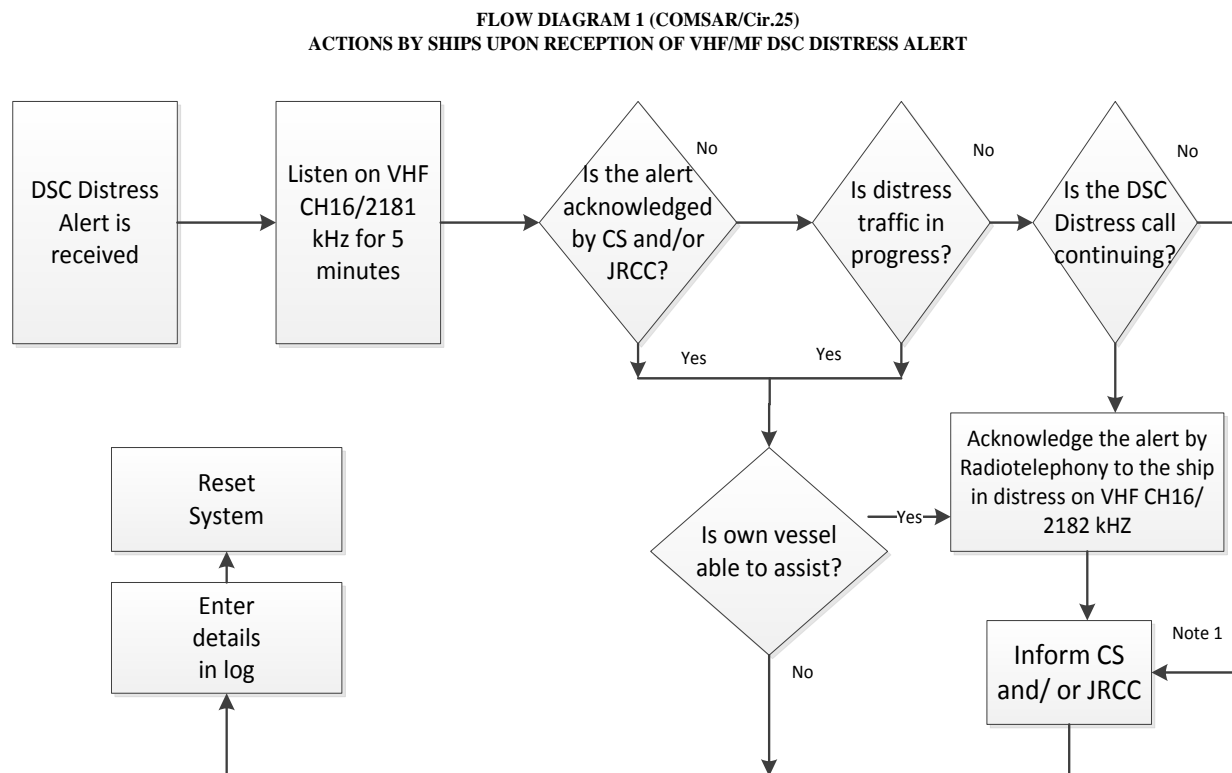
- 3.3 An alternative method to implement an "all coast stations" call without the need to modify Recommendation ITU-R M.493-9 could be to define one MMSI world-wide as an address for all coast stations, in accordance with Nos. S19.100 to S19.126 of the *ITU Radio Regulations*. However, this solution would also require a modification of the setup at each coast station participating in the GMDSS.

4. Authorization

It should be noted that on ships, distress alerts, distress acknowledgements and distress relay calls can only be transmitted with permission of the Master of the ship.

5. Flow diagrams

- 5.1 The simplified flow diagrams 1 and 2 describe actions to be taken aboard ships upon receipt of distress alerts from other ships. Administrations should give wide distribution of these flow diagrams to ships and training institutions.
- 5.2 Member Governments are invited to bring the above guidance and the attached flow diagrams to the attention of their ship owners, seafarers, coast stations, JRCCs and all others concerned.

Figure 4-4 - Flow Diagram 1 (COMSAR/Cir.25)**REMARKS:**

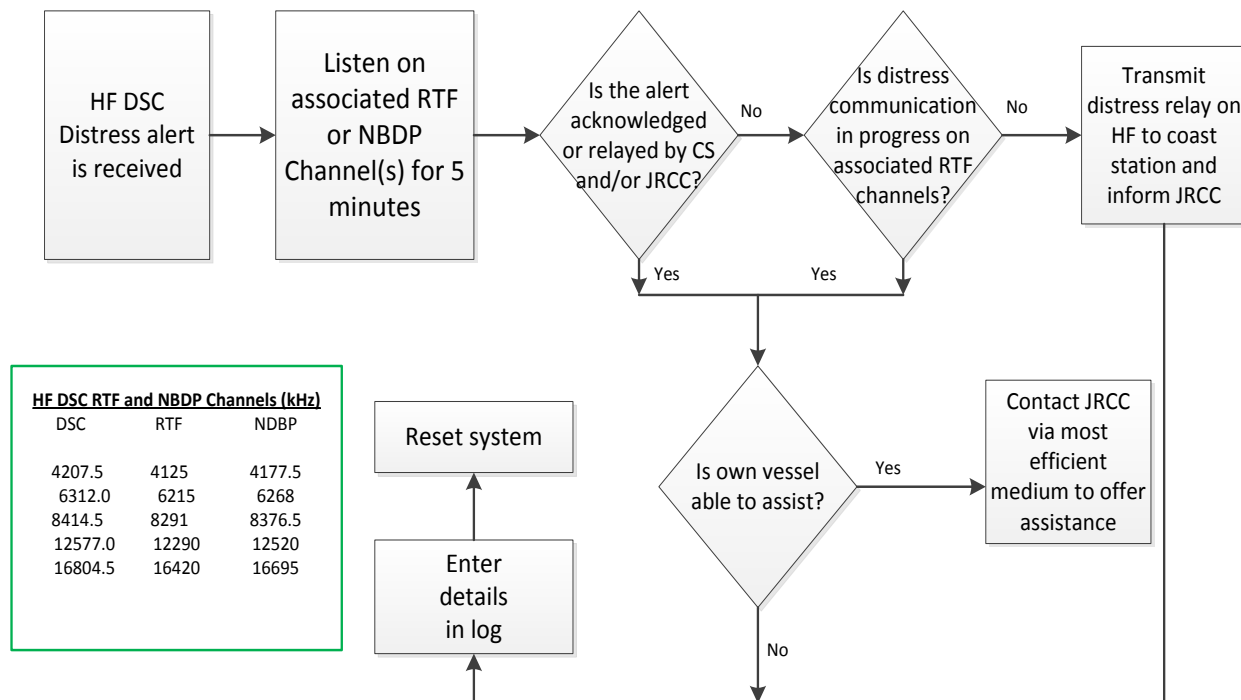
Note 1: Appropriate or relevant JRCC and/or Coast Station shall be informed accordingly. If further DSC alerts are received from the same source and the ship in distress is beyond doubt in the vicinity, a DSC acknowledgement may, after consultation with a JRCC or Coast Station, be sent to terminate the call.

Note 2: In no case is a ship permitted to transmit a DSC distress relay call on receipt of a DSC distress alert on either VHF channel 70 or MF Channel 2187.5 kHz

CS = Coast Station JRCC = Joint Rescue Co-ordination Center

Figure 4-5 - Flow Diagram 2 (COMSAR/Cir.25)

**FLOW DIAGRAM 2 (COMSAR/Cir.25)
ACTIONS BY SHIPS UPON RECEPTION OF HF-DSC DISTRESS ALERT**



REMARKS:


Note 1: If it is clear the ship or persons in distress are not in the vicinity and/or other crafts are better placed to assist, superfluous communications which could interfere with search and rescue activities are to be avoided. Details should be recorded in the appropriate logbook.

Note 2: The ship should establish communications with the station controlling the distress as directed and render such assistance as required and appropriate.

Note 3: Distress relay calls should be initiated manually.

CS = Coast Station **JRCC** = Joint Rescue Coordination Centre

Figure 4-6 - Distress and Safety Radiotelephone Procedures



Transport
Canada

DISTRESS AND SAFETY RADIOTELEPHONE PROCEDURES

TO BE DISPLAYED BESIDE RADIOTELEPHONE

Name of ship: _____

MMSI number: _____

BEFORE DEPARTING

- ▶ Have you left a sail plan with a responsible person ashore?
- ▶ Does your voyage plan take into consideration adverse weather, navigational hazards and fuel requirements?
- ▶ Have you verified that your radio equipment is operational?
- ▶ Have you charged and checked any batteries used to power radio equipment for emergency communications?
- ▶ If equipped with VHF-DSC (Digital Selective Calling), do you have a valid MMSI* number and have you connected the radio to your GPS?
- ▶ If equipped with an EPIRB, have you registered* your EPIRB with the Canadian beacon registry?
- ▶ Do you have suitable visual distress signals onboard? (flares, signaling light, etc)

DISTRESS PROCEDURES

For use only when in grave and imminent danger and IMMEDIATE ASSISTANCE is required.

1. Send DSC Alert
2. Send distress call on VHF CH16
3. Activate EPIRB

1- Send DSC Alert

Ensure radio is switched on. Press and hold the red "distress" button for 5 seconds.

2- Send distress call on VHF CH16

Switch to VHF CH16 and transmit distress call and message:

MAYDAY MAYDAY MAYDAY

THIS IS _____ (Vessel name 3 times)
MAYDAY followed by vessel name and MMSI number

POSITION _____
NATURE OF DISTRESS _____
AID REQUIRED _____
NUMBER OF PERSONS ON BOARD _____

If outside of VHF coverage, send the distress message on 2182 kHz or use other suitable means of communication.

3- Activate EPIRB

Activate EPIRB (or PLB) by following directions printed on beacon body.
Take EPIRB with you to the survival craft.
Ensure EPIRB is vertical, with antenna pointed upward.

EARLY ALERTING OF SAR

Transport Canada strongly recommends you report, without delay, any situation that has the potential to constitute a danger to life. Time lost in the initial stages of a potential distress incident cannot be regained and may be crucial to the outcome. See example for URGENCY (PAN PAN) message.

EXAMPLE OF DISTRESS PROCEDURE (MAYDAY)

Press distress alert button followed by distress message "MAYDAY, MAYDAY, MAYDAY. This is NONSUCH, NONSUCH. MAYDAY NONSUCH MMSI 316999999, position 49° 04.1' North 123° 18.8' West. Ship has taken on water and is in danger of capsizing. I require immediate assistance. 4 persons on board, are taking to liferaft, Over."

EXAMPLE OF URGENCY PROCEDURE (PAN PAN)

"PAN PAN, PAN PAN, PAN PAN, St. John's Coast Guard Radio, This is NONSUCH, NONSUCH, NONSUCH. MMSI 316999999, 5 miles East of Cape Breton, we have taken on water in bilge and are presently trying to pump out excess water, Over."

Distress, Urgency and Safety Signals

MAYDAY means a mobile unit or person is threatened by grave and imminent danger and requests immediate assistance.

MAYDAY RELAY means the calling station is relaying a distress message on behalf of a mobile unit or person is threatened by grave and imminent danger.

PAN PAN means the calling station has a very urgent message to transmit concerning the safety of a mobile unit or a person.

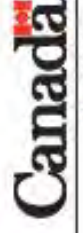
SÉCURITÉ means the calling station has an important navigational or meteorological warning to transmit.

Canceling a False VHF-DSC Distress Alert

Transmit on VHF CH16: All stations, All stations, this is _____ West, (vessel name) MMSI number _____, position _____ North, _____ West, Cancel my distress alert of date and time. This is _____, (vessel name) MMSI number _____, Out.

Phonetic Alphabet

A	Alfa	I	India	O	Oscar	Y	Yankee
B	Baker	J	Juliett	P	Papa	Z	Zulu
C	Charlie	K	Kilo	S	Sierra		
D	Delta	L	Lima	T	Tango		
E	Echo	M	Mike	U	Uniform		
F	Foxtrot	N	November	V	Victor		
G	Gufo	D	Quebec	W	Whiskey		
H	Hotel	P	Papa	X	X-Ray		



TF 8836E (12/2005)

4.2.7 Amver – Automated Mutual-Assistance Vessel Rescue System

Note: A 96-hour pre-arrival report to U.S. ports is required under 33 CFR 160.

The Amver System, operated by the United States Coast Guard, is a maritime mutual assistance program that provides important aid to the development and coordination of search and rescue (SAR) efforts in the oceans of the world. Merchant vessels of all nations making offshore passages of more than 24 hours are encouraged to send sail plans and periodic position reports to the Amver Center in Martinsburg, WV. There is no charge for these radio messages when they are sent through MCTS Centres. Information from these messages is entered into a computer that generates and maintains dead reckoning positions for participating vessels throughout their voyages. The predicted locations and SAR characteristics of all vessels known to be within a given area are furnished upon request to recognized SAR agencies of any nation for use during an emergency. Predicted vessels' locations are disclosed only for reasons related to maritime safety.

Amver is a free and voluntary program. An Amver participant is under no greater obligation to render assistance during an emergency than a vessel that is not participating. Benefits to shipping include:

- a) improved likelihood of rapid aid in emergencies;
- b) reduced number of calls for assistance to vessels not favourably located;
- c) reduced time lost for vessels responding to calls for assistance. An Amver participant is under no greater obligation to render assistance during an emergency than a vessel that is not participating.

Details of Amver System operations may be obtained from Amver Maritime Relations Office, U.S. Coast Guard, Battery Park Building, 1 South Street, New York, NY 10004-1499 (Telephone: 212-668-7764, Fax 212-668-7684). Amver instructions are also available at Coast Guard Captain of the Port and Marine Safety Offices in major United States coastal ports. The instructions are published in the following languages: Chinese, Danish, Dutch, English, French, German, Greek, Italian, Japanese, Norwegian, Polish, Portuguese, Spanish, and Swedish. Requests for instructions should state the language desired if other than English.

Amver Website: <http://www.amver.com/>

Ship Station (Radio) Technical Regulations, 1999 now specify compulsory participation in Amver for certain ships when departing on an offshore voyage of more than 24 hours duration.

The provisions apply to all Canadian ships and to all non-Canadian ships engaged in the coasting trade of Canada. Of this group, the following are exempted:

- a) fishing vessels engaged in fishing;
- b) ships operated by the Canadian government on law enforcement duties;
- c) vessels whose voyages will be within the waters of an Arctic Shipping Safety Control Zone, Hudson Bay, James Bay or Ungava Bay; and
- d) vessels in other waters provided their voyages are within VHF or MF coverage areas.

It should be noted that the above exemptions do not amount to a prohibition; and that all other ships proceeding on an offshore voyage of more than 24 hours duration are encouraged to participate in Amver.

4.2.7.1 To Participate

Any merchant vessel of one thousand gross tons or more on a voyage of greater than twenty-four hours to anywhere on the globe is to be part of the Amver system. International participation is voluntary regardless of vessel's or company's flag, country of origin, or destination.

4.2.7.2 The Information Reported

Information voluntarily provided by vessels to Amver is kept strictly confidential and is protected by the Coast Guard (USA). It will be released only for safety purposes.

4.2.7.3 What and When You Report

- a) Sail plan message should be sent on or before departure;
- b) Position Reports should be sent within twenty-four hours of departure and subsequently no less frequently than every forty-eight hours until arrival;
- c) Arrival Reports should be sent immediately prior to or upon arrival at the Port of Destination;
- d) Reports are to be sent during the Radio Officer's normal duty hours; and
- e) At the discretion of the vessel, reports may be sent more frequently than the above schedule, as, for example, in heavy weather or under other adverse conditions.

4.2.7.4 Report Format

As previous Amver participants will note, the format described below represents a change which serves two purposes: First, the new format will permit the automated data processing system to enter your information into Amver more accurately and efficiently. Second, the new format conforms with the International Maritime Organization (IMO) proposed standard, thus reducing the number of different formats in use. As other systems also adopt the IMO format, we will have moved closer to a single format worldwide.

4.2.7.5 Amver System Communications Network

The following methods are recommended for ships to transmit Amver Sail Plan, Position, Deviation and Arrival reports. Details are available on the Amver Website at

<http://www.amver.com>.

The email address for Amver is: amvermsg@amver.com.

AMVER/SEAS "Compressed Message" via Inmarsat-C via TELENOR: Amver address: NOAA telephone number entered in the ADDRESSBOOK. For information, please see the instruction sheet for your brand of Inmarsat-C transceiver. AMVER/SEAS software can be downloaded from the Internet at:

http://www.aoml.noaa.gov/phod/goos/seas/amverseas_software.php

or requested from:

TELENOR Satellite Services
1101 Wootton Parkway
Rockville, Maryland 20852
1-301-838-7800

Email: customercare@telenor.com

HF Radiotelex Service of U.S. Coast Guard Communications Stations: Full information on how to send Amver messages this way can be found at: <http://www.navcen.uscg.gov/>.

HF Radio at no cost via Coast Guard Contractual Agreements with the following companies:

- a) Mobile Marine Radio (WLO)
- b) Mobile (WCL)
- c) Marina Del Ray (KNN)
- d) Seattle (KLB)

Telex: Amver Address: (0) 230 127594 AMVERNYK

Telefax: To the USCG Operations Systems Center in Martinsburg: 1-304-264-2505

If messages are relayed through Canadian Coast Guard Ships no ship charge will be assessed. All Amver messages forwarded via the stations listed should be addressed to Amver Vancouver, rather than COAST GUARD New York, to ensure that no charge is applied in delivery.

4.2.7.6 Amver Voyage Report Types

There are four types of Amver Reports – Sail, Arrival, Position, and Deviation Reports.

- a) Reporting format. Each line of Amver Report text starts with a line identifier. Line identifiers are “Amver” or a single letter. The line identifier and the data items on the line are each separated from each other by a single slash (“/”). Lines are terminated by two slashes (“//”).
- b) Reporting data. Amver participants need to be familiar with four types of reports - Sail, Arrival, Position, and Deviation Reports. Note that Amver permits sail plan and departure to be combined into a single report. Amver accepts sail plan information separately - for example, several days prior to departure. Report identifiers are as follows:

AMVER/SP//	Sail Plan and Departure
AMVER/PR//	Position Report
AMVER/FR//	Final Arrival Report
AMVER/DR//	Deviation Report

- c) Details. Paragraph IX includes a discussion of each report type. Each example is followed by an explanation. Note that not all the lines in the example are necessary for each type of report. The required and optional lines are discussed in each section.

4.2.7.7 Other Required Information

Amver also needs other information which might be useful in an emergency. This includes data such as the ship length, communications equipment, radio watch schedule, speed, rig, and so forth. This information is collected separately once, by completion of the Search and Rescue Questionnaire (SAR-Q) found on the Amver Website at <http://www.amver.com/> which is then retained in the automatic data processing system, periodically validated, and used only for search-and-rescue purposes.

4.2.7.8 Release of Information

All voluntary information collected under these instructions will be only released to recognized search-and-rescue authorities. Information regarding vessels required to participate in Amver will be forwarded to the U.S. Maritime Administration, via the keyword MAREP on the Y-Line.

4.2.7.9 Description of Voyage Reports

An example and explanation of each of the four types of Amver reports follows. Numbers in parentheses refer to footnotes at the end of the section.

Sail Plan and Departure Report. The “L” lines contain routing and “turnpoint” information needed by Amver. Amver needs data about every intended turnpoint, but also accepts information about any points along the intended track, even though they might not be turnpoints. Turnpoint information is needed by Amver to maintain plot accuracy.

Table 4-11 - Sail Plan and Departure Report Example

EXAMPLE
AMVER/SP//
A/SANDY JOAN//ABCD//
B/110935Z//
E/145//
F/126//
G/NORVOROSK/4510N/03820E//
I/GIBRALTERGI/3600N/00600W/140730Z//
L/RL/140/4130N/02910E/112000Z//
L/RL/140/4010N/02620E/112300Z//
L/RL/140/3630N/02330E/120330Z//
L/RL/140/3650N/01520E/121500Z//
L/RL/140/3800N/01000E/130100Z//
L/LR/060//
M/GKA/GKM//
V/MD/NURSE//
X/NEXT/REPORT/120900Z//
Z/SITOR/INSTALLED/SELCALL/NUMBER/IS/99999//
Z//EOR
EXPLANATION
<u>Required</u>
AMVER/SP//
A /vessel/name/International Radio Call Sign//
B /intended time of departure or departure time// (1)
G /port of departure/latitude//longitude// (2)
I /port of destination/latitude//longitude/estimated time of arrival// (1) (2) (3)
L / route information ...// (1) (3) (4)
Z // end of report.
<u>Optional</u>
E /current course// (5)
F /estimated average speed// (6)
M /current coastal radio station//next coastal radio station, if any//
V /onboard medical resources// (7)
X /up to 65 characters of amplifying comments// (8) (9)

Table 4-12 - Final Arrival Report Example

EXAMPLE
AMVER/FR//
A/SANDY/JOAN/ABCD//
K/NEW YORK/US/4040N/07420W/180600Z//
X/PROBLEMS WITH MF XMTR AGENT/ADVISED//
Z//EOR
EXPLANATION
<u>Required</u>
AMVER/FR//
A /vessel name/International Radio Call Sign//
K /port name/latitude/longitude/time of arrival//(1) (3)
Z //end of report.
<u>Optional</u>
X /up to 65 characters of amplifying comments// (8) (9)

Table 4-13 - Position Report Example

EXAMPLE
AMVER/PR//
A/SANDY/JOAN/ABCD//
B/120300Z//
C/3630N/02330E//
E/145//
F/126//
M/GKM//
X/NEXT REPORT/131800Z//
Z//EOR
EXPLANATION
<u>Required</u>
AMVER/PR//
A /vessel name/International Radio Call Sign//
B /time at position// (1)
C /latitude/longitude// (3)
Z //end of report.
<u>Optional</u>
E /current course //(5)
F /average speed //(6)
M /current coastal radio station/ next coastal radio station, if any//
X / up to 65 characters of amplifying comments// (8) (9)

Table 4-14 - Example of a Deviation Report Used to Report Sail Plan and Other Changes

EXAMPLE
AMVER/DR//
A/SANDY/JOAN/ABCD//
B/120300Z//
E/095//
F/220//
G/NORVOROSK/4470N/03780E//
I/NEW YORK US/4040N/07420W/180800Z//
L/GC/220//
M/GKA/WSL/NMN//
V/MD/NURSE//
X/DIVERTING BEST SPEED TO NEW YORK US//
Z//EOR
EXPLANATION
<u>Required -</u>
AMVER/DR//
A /vessel name/International/ Radio Call Sign//
Z //end of report.
<u>One or more of the following optional items</u>
B /intended time of departure// (1)
E /intended course // (5)
F /intended average speed// (6)
G /port of departure/latitude/longitude// (2)
I /port of destination/latitude/longitude/estimated time of arrival/(1) (2) (3)
L /.....route information// (1) (3) (4)
M /current coastal radio station/next coastal radio station, if any//
V /onboard medical resources// (7)
X /up to 65 characters of amplifying comments// (8) (9)

Footnotes:

- 1) All times must be expressed as a six-digit group giving date of month (first two digits), hours and minutes (last four digits). Only Coordinated Universal Time (i.e. Greenwich Mean Time) is to be used. The six-digit date-time-group is to be followed by either Z or GMT. The month is optional, and may be added, if appropriate. The first three digits of the English-language month are used. The following examples are acceptable:

290900Z 290900 Z 290900Z DEC

- 2) Port latitude longitude refers to the geographic position of the pilot station. Both port name and geographic position are required from U.S. flag vessels.
- 3) Latitude is a four-digit group expressed in degrees and minutes, and suffixed with "N" for north or "S" for south. Longitude is a five-digit group expressed in degrees and minutes, and suffixed with "E" for east or "W" for west.

For example: C/4000N/03500W//

- 4) The "L" lines contain most of the sail plan information. As many "L" lines as needed may be used. The "L" lines contain routing data to each of the intermediate points, and to the destination. Data about all turnpoints are required, unless the voyage will follow a great circle with no delays at intermediate points. In addition to turnpoint information, data about other points along each leg are useful. Following, is the information desired for each intermediate point: navigation, method, leg speed, latitude, longitude, port or landmark name ETA estimated time of departure.

For example:

```
L/RL/125/0258N/07710W/ABACO/111200Z//  
L/RL/125/0251N/07910W/NWPROVCHAN/112145Z//  
L/RL/125/0248N/08020W/120255Z//  
L/RL/125//
```

NAVIGATION METHOD IS REQUIRED. It is either "GC" for great circle, or "RL" for rhumb line.

LEG SPEED is useful, but is not required. See footnote (6).

LATITUDE LONGITUDE IS REQUIRED. See footnote (3).

PORT OR LANDMARK NAME is useful, but is not required.

ETA IS REQUIRED. See footnote (1).

ESTIMATED TIME OF DEPARTURE IS REQUIRED, if the ship will lay over at the intermediate point.

A final NAVIGATION METHOD is required to route the ship to its destination. A final LEG SPEED is useful, but not required.

- 5) True course is a three-digit group.
- 6) Speed is a three-digit group in knots and tenths of knots. For example, 20.5 knots would be written as 205, without a period or decimal point.
- 7) If the optional "V" line is used, one or more of the following is required:
- | | |
|---------|---------------------------|
| /MD/ | for physician |
| /PA/ | for physician's assistant |
| /NURSE/ | |
| /NONE/ | |
- For example: V/DOCTOR/NURSE//
- 8) Any information provided in the Remarks line will be stored in the Amver's automatic data processing system for later review. However, no immediate action will be taken, nor will the information be routinely passed to other organizations. The remarks line cannot be used as a substitute for sending information to other search-and-rescue authorities or organizations. However, Amver will, at the request of other SAR authorities, forward remarks line information to the requesting agencies.
- 9) Next report information is not currently used by the Amver System, but is expected to aid in future development.

4.2.8 Differential Global Positioning System (DGPS)

Since May 2000 the Canadian Coast Guard DGPS service has been available from 19 DGPS stations located on the East and West coasts of Canada and parts of the Great Lakes. DGPS corrections are broadcast from medium frequency (MF) radiobeacon transmitters located to cover selected marine areas and waterways. The broadcasts are in accordance with international standards for radiobeacon DGPS services. DGPS provides continuous precise positioning of better than 10 metres for 95% or better of the time (provided that suitable DGPS receiver equipment is utilized, properly installed and maintained).

Additional information on the use of the DGPS service will be announced through Notices to Mariners. General information is also available from the Canadian Coast Guard Website:

<http://www.ccg-gcc.gc.ca/CCG-DGPS/Marine-Differential-Global-Positioning-System>.

The corrections from the DGPS service are calculated at the reference station in the NAD 83 coordinates. To process the information properly, DGPS receivers should be adjusted to the WGS 84 setting. Although WGS 84 and NAD 83 are essentially the same (only a few centimetres difference), it is highly recommended that all DGPS receivers be set to WGS 84 to take full advantage of the precision of DGPS. When utilizing charts other than NAD 83, DGPS latitude and longitude positions must be adjusted to the appropriate datum using the information contained in the charts.

The table that follows provides information on existing DGPS broadcasts. A list of United States Coast Guard (USCG) DGPS transmitters providing coverage in Canadian waters may be obtained directly from the USCG <http://www.navcen.uscg.gov/>.

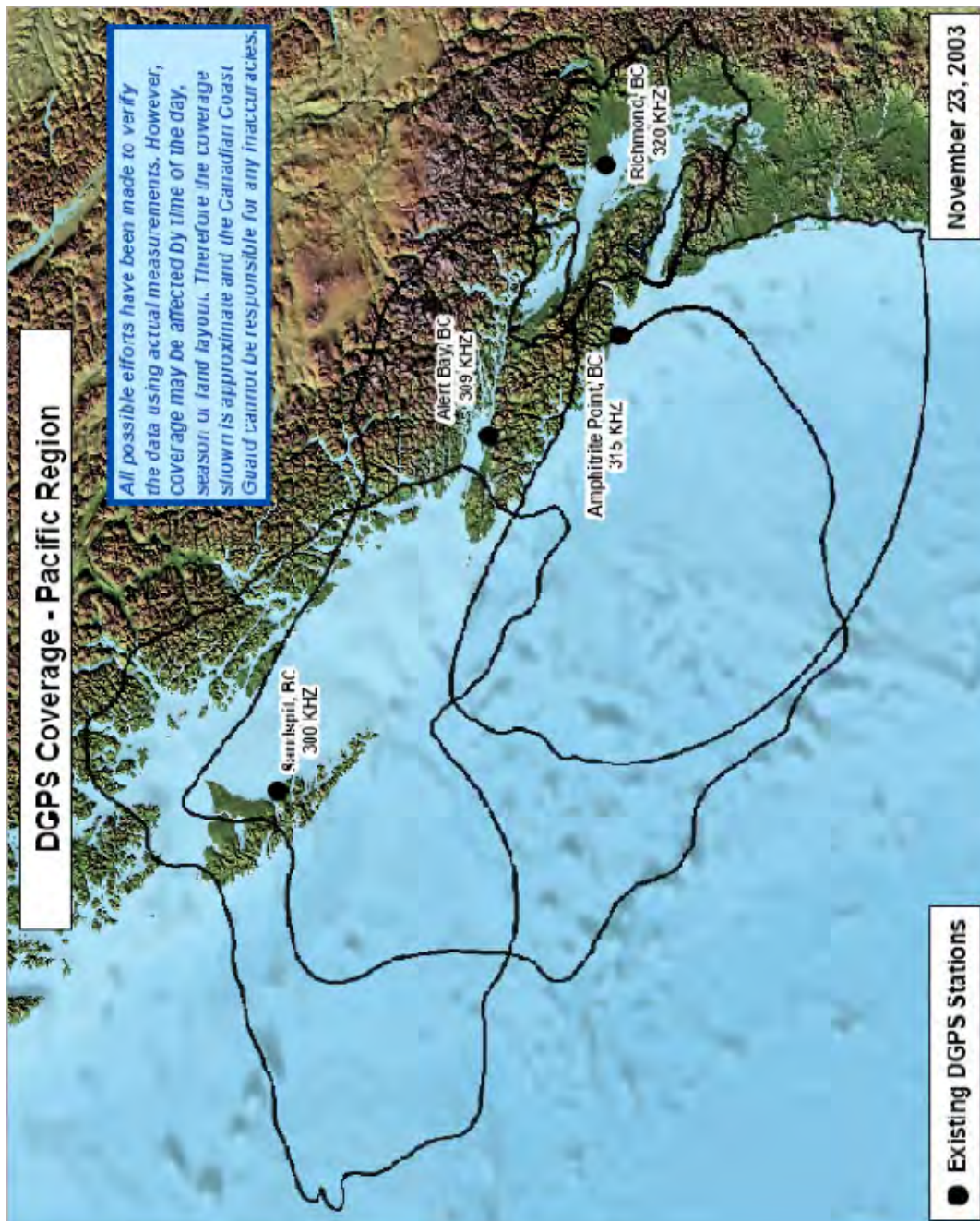
Figure 4-7 shows the nominal coverage from existing broadcast stations. Users should be aware that coverage is subject to short and long term variations due to environmental and seasonal conditions.

4.2.8.1 Canadian Coast Guard DGPS Broadcasts

Table 4-15 - Pacific Coast

Station Name	Location NAD 83	Frequency and Transmission Rate	IALA Reference Station ID	IALA Radio Beacon ID	Remarks
Alert Bay, BC	50°35'N 126°55'W	309 kHz 200 bps	300, 301	909	Full Operational Service.
Amphitrite Point, BC	48°55'N 125°33'W	315 kHz 200 bps	302, 303	908	Full Operational Service.
Richmond, BC	49°06'N 123°11'W	320 kHz 200 bps	304, 305	907	Full Operational Service.
Sandspit, BC	53°14'N 131°49'W	300 kHz 200 bps	306, 307	906	Full Operational Service.

Figure 4-7 - DGPS Coverage - Pacific Region



4.2.9 Pre-Arrival Information Report (PAIR)

Note: pursuant to the Marine Transportation Security Regulations, the following pre-arrival information requirement does not apply to vessels operating solely on the Great Lakes or to the portions of a vessel's voyage on the Great Lakes after pre-arrival information has been given prior to its entrance into the St. Lawrence Seaway, neither, to fishing vessels, pleasure craft and government vessels.

The master of the following vessels, engaged on a voyage from a port in one country to a port in another country:

- a) SOLAS vessel of 500 tons gross tonnage or more or is carrying more than 12 passengers;
- b) NON-SOLAS vessel that is more than 100 tons gross tonnage, other than a towing vessel;
- c) NON-SOLAS vessel that carries more than 12 passengers; or
- d) NON-SOLAS vessel that is a towing vessel engaged in towing a barge astern or alongside or pushing ahead, if the barge is carrying certain dangerous cargoes.

shall ensure their vessel does not enter Canadian waters unless the master submits their pre-arrival information to a Canadian Marine Communications and Traffic Services (MCTS) Centre before entering Canadian waters.

All pre-arrival information must be provided at least 96 hours prior to entering Canadian waters unless the total duration of the voyage before entering Canadian waters is less than 96 hours in which case the notification must be provided at least 24 hours prior to entering Canadian waters.

If the duration of the segment of the voyage before entering Canadian waters is less than 24 hours, vessels are required to send a pre-arrival report as soon as practicable before entering Canadian waters but no later than the time of departure from their last port of call.

The pre-arrival information must be sent to one of the addresses below:

- a) Vessels planning to enter Canadian waters inbound to a Canadian port on the West Coast shall send pre-arrival information to Transport Canada Marine Security Operations Centre:
Email: marsecw@tc.gc.ca
- b) Vessels planning to enter Canadian waters inbound to a Canadian port on the East Coast including a Canadian or American port in the Great Lakes shall send pre-arrival information to ECAREG Canada via one of the following methods listed below:

Halifax MCTS Centre

Facsimile: 902-426-4483

Telegraphic Identifier: CCG MRHQ DRT

Email: hlxecareg1@innav.gc.ca

- c) Vessels planning to enter Canadian waters inbound to a Canadian port within the Canadian Arctic Zone shall send pre-arrival information to NORDREG Canada via one of the following methods listed below:

Iqaluit MCTS Centre

Telephone: 867-979-5724
Facsimile: 867-979-4264
Telex (Telefax): 063-15529
Telegraphic Identifier: NORDREG CDA
Email: iganordreg@innav.gc.ca
Operational from approximately mid-May to late December

Prescott MCTS Centre

Telephone: 613-925-4471
Facsimile: 613-925-4519
Email: iganordreg@innav.gc.ca
Operational from approximately late December to mid-May

It is the responsibility of the Master of the vessel to ensure all information provided to the Government of Canada (Transport Canada) in the pre-arrival information is complete and accurate. Masters of vessels subject to the *Marine Transportation Security Regulations* (as described above) failing to submit or submitting an incomplete or inaccurate pre-arrival information risk subjecting their vessel to control actions such as, but not limited to: inspection, detention, redirection or expulsion from Canadian waters.

Vessels can obtain a blank template of the 96 hour pre-arrival report by sending an email to 96@tc.gc.ca.

The Master of a vessel shall ensure that the following pre-arrival information in respect of the vessel is reported:

- a) its name;
- b) its country of registry;
- c) the name of its registered owner;
- d) the name of its operator;
- e) the name of its classification society;
- f) its international radio call sign;
- g) its International Ship Security Certificate, Canadian Vessel Security Certificate or ship security compliance document number;
- h) its International Maritime Organization number, if it is a SOLAS ship;
- i) the date of issuance, date of expiry and name of the issuing body of its International Ship Security Certificate, Canadian Vessel Security Certificate, or ship security compliance document;
- j) confirmation that the vessel has an approved vessel security plan;
- k) the current MARSEC level;
- l) a statement of when its last 10 declarations of security were completed;
- m) details of any security threats to the vessel during the last ten calls at marine facilities;
- n) a statement as to whether the vessel consents to tracking by the Canadian Government;

- o) details of any deficiencies in its security equipment and systems, including the communication systems, and the way in which the master of the vessel intends to correct them;
- p) if applicable, the name of its agent and their 24-hour telephone and facsimile numbers;
- q) if applicable, the name of the vessel's charterer;
- r) its position and time at which it reached that position;
- s) its course and speed;
- t) its destination and estimated time of arrival at its destination;
- u) the name of a contact person at the marine facility that it will visit and their 24-hour telephone and facsimile numbers;
- v) the following information in respect of its last ten marine facilities visited:
 - i) the receiving facility;
 - ii) the marine facility visited;
 - iii) the city and country;
 - iv) the date and time of arrival, and
 - v) the date and time of departure;
- w) a general description of the cargo, including cargo amount; and
- x) if applicable, the presence and description of any dangerous substances or devices on board.

If the master reported pre-arrival information more than 24 hours before entering Canadian waters, the master of a vessel shall ensure that the vessel does not enter Canadian waters unless the master reports any change in that information 24 hours before entering Canadian waters to the MCTS Centre in accordance with the instructions set out in the most recent edition of the Canadian Coast Guard *Radio Aids to Marine Navigation*.

It is recommended that a complete copy of the vessel's Interim International Ship Security Certificate (IISCC), International Ship Security Certificate (ISSC), Interim Canadian Vessel Security Certificate (ICVSC), Canadian Vessel Security Certificate (CVSC) or Ship Security Compliance document, and any pages containing the Endorsement information, is to be included with the Pre Arrival Information Report.

4.3 SERVICES

4.3.1 Notices to Shipping

Notices to Shipping (NOTSHIPS) issued for the west coast of Canada and the Arctic are assigned an alphanumeric designator. The alphanumeric designator consists of an alpha character which identifies the Canadian Coast Guard NOTSHIP issuing authority. The alpha character is followed by a number commencing with the number 001 on January 1 each year and subsequently increases throughout the year. Alpha designators utilized in Canadian NOTSHIPS are as follows:

- A - Arctic
- P - Western
- H - Athabasca-Mackenzie Watershed

4.3.1.1 Broadcast NOTSHIPS

Broadcast times and radio frequencies for NOTSHIP broadcasts by Canadian Coast Guard MCTS Centres are listed in PART 2 of this publication.

4.3.1.2 Written NOTSHIPS

A Written NOTSHIP contains information which is anticipated to remain in effect for an extended period of time. These notices have previously been broadcast in full for an initial period of 48 hours and then placed, for an additional period of 5 days, on the Active NOTSHIP List which lists the NOTSHIP number and provides a brief description. Written NOTSHIPS bear the same number as the corresponding broadcast NOTSHIP.

Written NOTSHIPS are available as listed below:

Table 4-16 - Distribution of Written Notices to Shipping

Designator	NOTSHIP Authority	Internet
A	Central and Arctic Region	http://www.ccg-gcc.gc.ca/eng/CCG/Notship-Home
P	Western Region	http://www.ccg-gcc.gc.ca/eng/CCG/Notship
H	Central and Arctic Region	http://www.ccg-gcc.gc.ca/eng/CCG/Notship-Home

Masters are reminded of the regulatory requirement to report any danger, potential danger or hazard to navigation which they may encounter. Reports should be forwarded to the appropriate MCTS Centre as soon as possible to ensure the widest distribution to mariners through broadcast NOTSHIPS.

4.3.1.3 Information Updates

Notices to Mariners contain information which serves to correct charts and related publications. Up-to-date information is available to vessels inbound for Canadian waters on any changes which have occurred between the date of issue of the most recent monthly edition of Canadian Notices to Mariners held on board. Vessels wishing to avail themselves of this service should send their request directly to VTS.RUPERT@INNAV.GC.CA or NORDREG CANADA. Requests may also be routed via any MCTS Centre as listed in PART 2 of this document.

When making this request the following information shall be included:

- ship's name and call sign;
- present position, destination and intended route;
- most recent monthly edition of Canadian Notices to Mariners held on board; and
- list of recent Notices to Shipping held on board.

Ice information, ice routing and icebreaker assistance may be obtained from the Northern Canada Vessel Traffic Services (NORDREG CANADA). Refer to Notice Number 6 of the Annual Edition, Notices to Mariners or the publication "Ice Navigation in Canadian Waters" for additional information.

4.3.2 Canadian NAVTEX Service**Table 4-17 - Transmitting sites where NAVTEX Service is available:**

Controlled by	Site	Position	Range (NM)	ID 518 kHz (English)	ID 490 kHz (French)
Prince Rupert MCTS	Amphitrite Point	48°55'N 125°32'W	300	H	
Prince Rupert MCTS	Digby Island	54°17'N 130°25'W	300	D	
Iqaluit MCTS	Iqaluit	63°43'N 068°33'W	300	T	S

The above noted NAVTEX services are provided on a time-shared basis for the broadcast of the following subject indicator content:

- (A) Navigational Warnings
- (B) Meteorological Warnings
- (C) Ice Reports
- (D) Search and Rescue Information/Tsunami
- (E) Meteorological Forecasts
- (G) AIS Service Messages
- (J) GPS Messages

Broadcast time and content is shown in individual MCTS Centre listings.

Figure 4-8 - NAVTEX Coverage Western Region

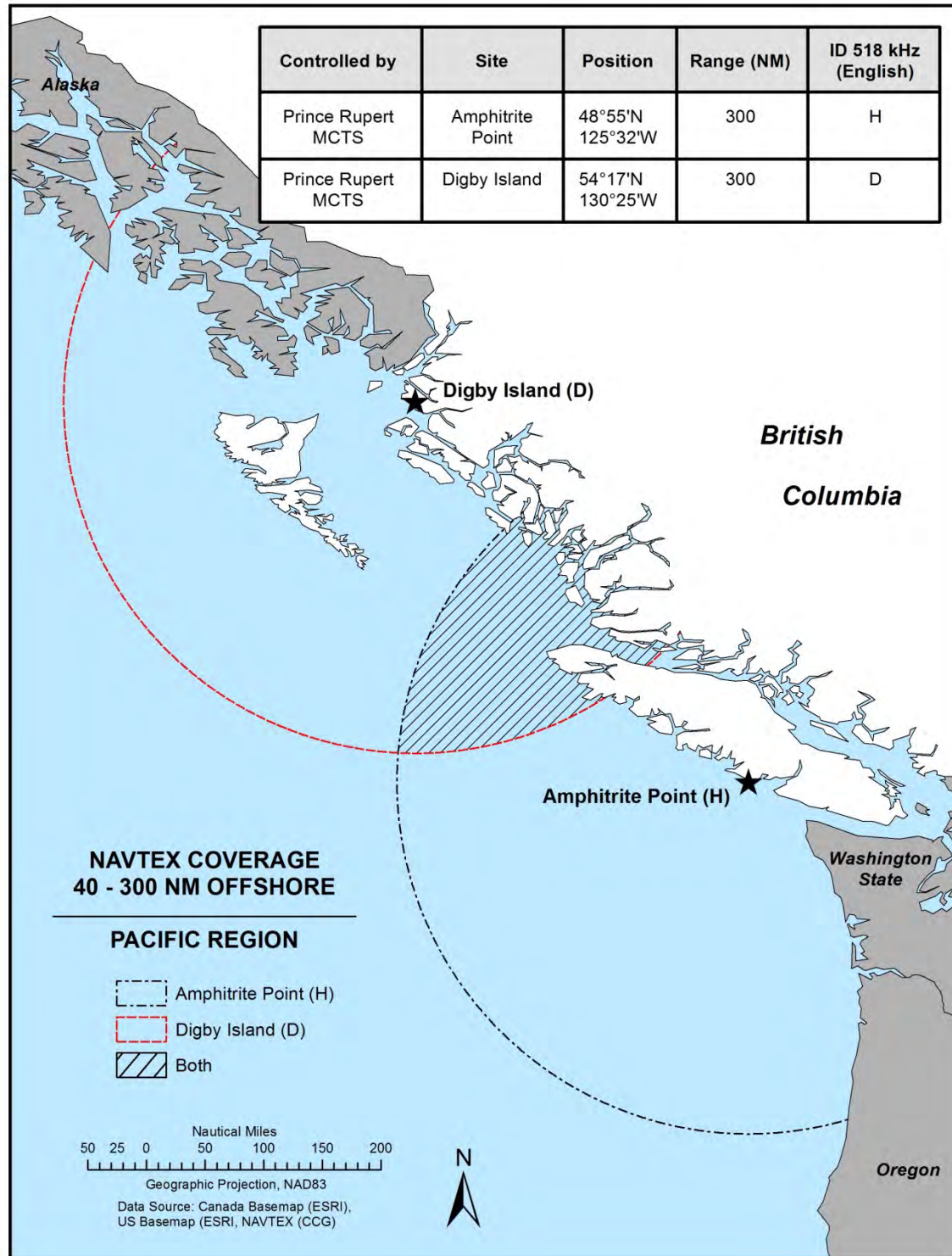


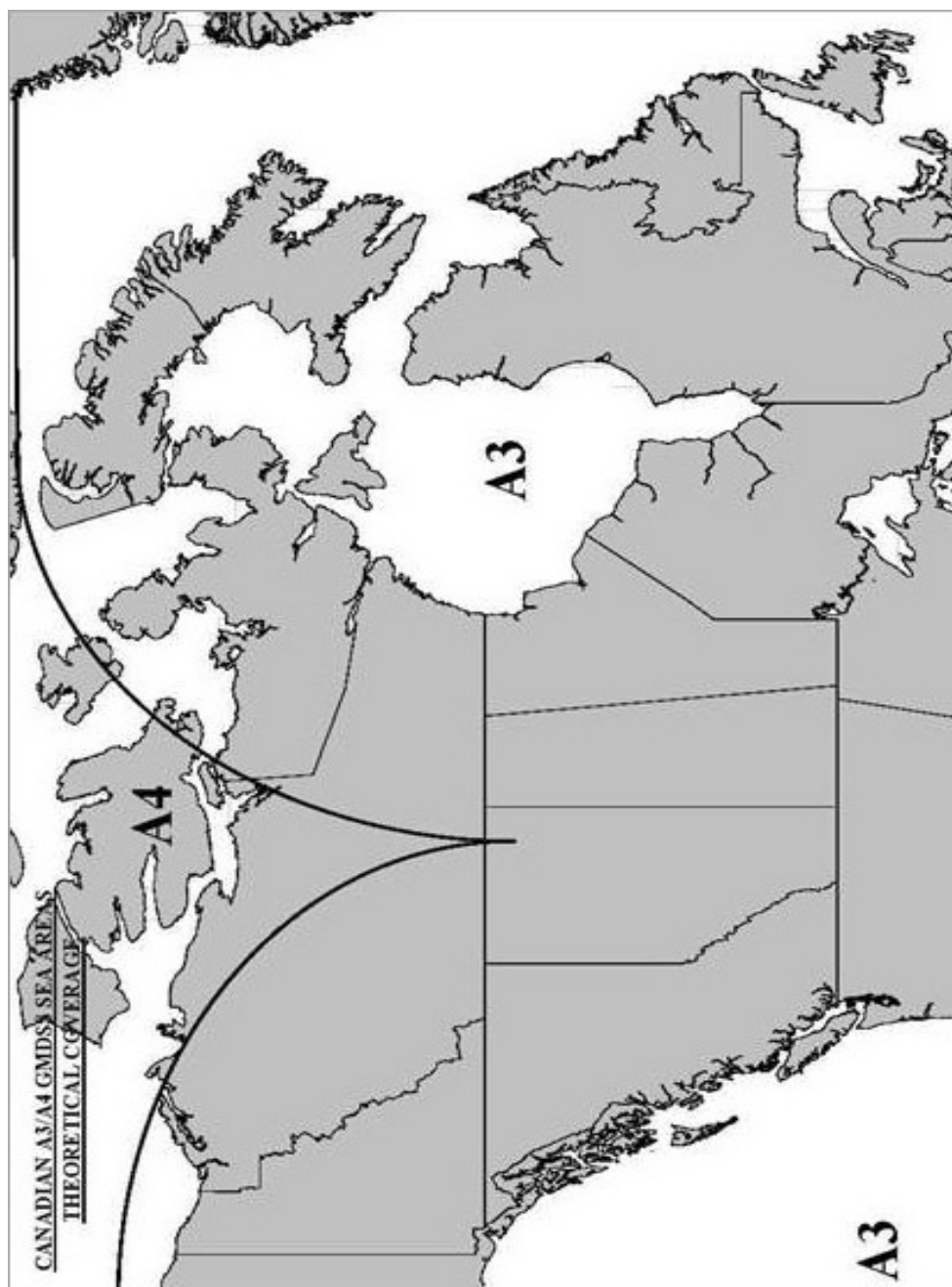
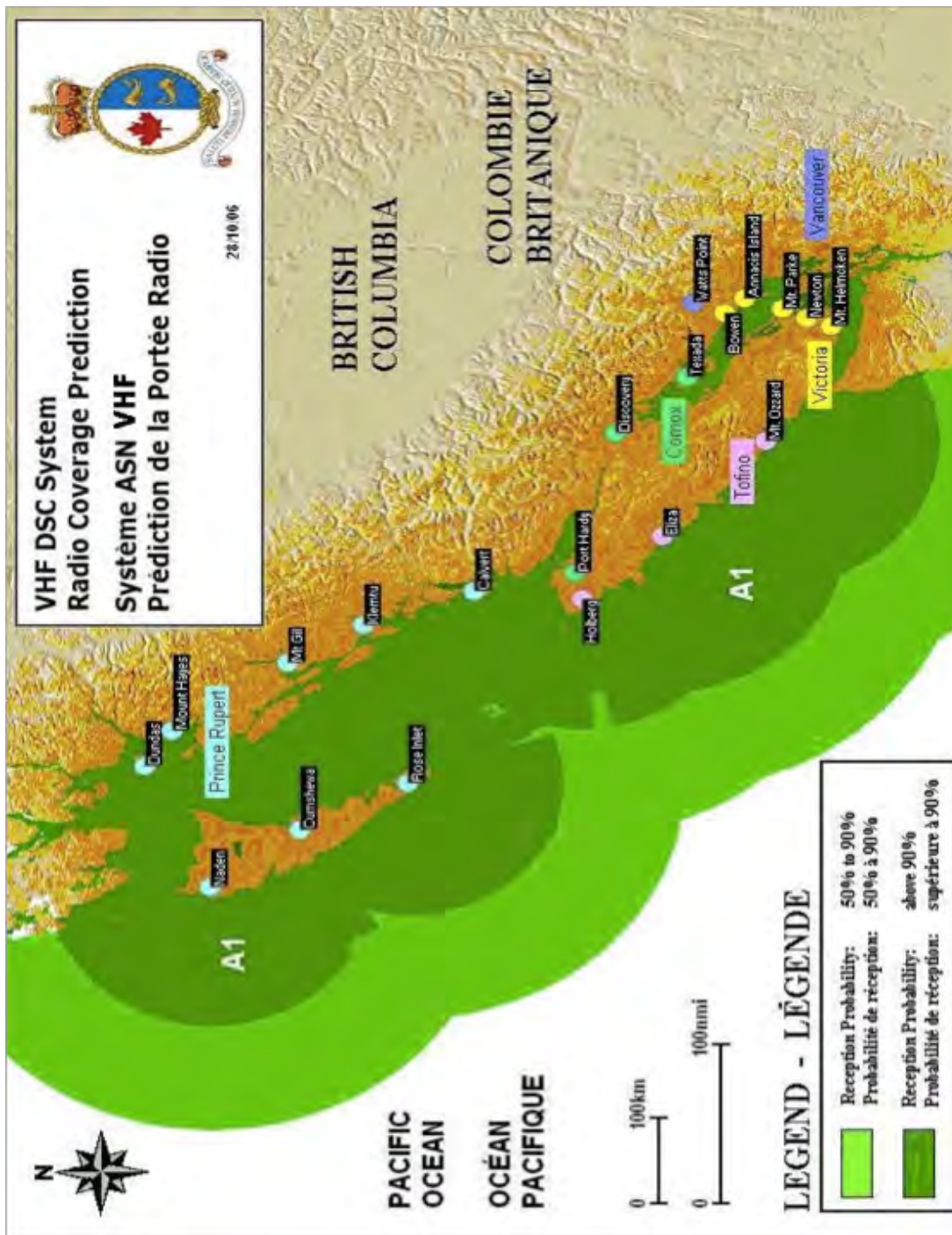
Figure 4-9 - Canadian A3/A4 GMDSS Sea Areas Theoretical Coverage

Figure 4-10 - VHF DSC System Radio Coverage Prediction - Pacific Ocean



4.3.3 World-Wide Navigational Warning Service (WWNWS)

4.3.3.1 NAVAREAS XVII and XVIII: Navigational Warnings

The Canadian Coast Guard has assumed the responsibility of NAVAREA coordination for NAVAREAS XVII and XVIII as part of the World-Wide Navigational Warning Service (WWNWS). The service was declared to be in "Full Operational Condition" as of June 1, 2011.

NAVAREAS XVII and XVIII warnings are broadcast in the English language using the following rectangular areas until SafetyNET Inmarsat-C or mini-C Maritime terminals operating in the arctic waters have been updated:

NAVAREA XVII	NAVAREA XVIII
82°00N 175°00E	82°00N 120°00W
82°00N 120°00W	82°00N 035°00W
62°00N 120°00W	62°00N 035°00W
62°00N 175°00E	62°00N 120°00W

Reception of rectangular addressed messages should be automatic providing the ship's position is inside the addressed area. However, mariners should check their manufacture's operation manuals to obtain information on the setting of their EGC equipment to receive relevant SafetyNET messages.

NAVAREA XVII (POR): 11:30 UTC and 23:30 UTC
NAVAREA XVIII (AOR-W): 11:00 UTC and 23:00 UTC

During the Arctic navigational season, NAVAREA XVII and XVIII warnings applicable to the Canadian Search and Rescue boundaries for waters North of 70 degrees latitude are broadcast (with limits to coverage area and reliability) using High Frequency Narrow Band Direct Printing (HF-NBDP) on 8416.5 kHz at 03:30 UTC and 15:30 UTC. Refer to Iqaluit MCTS, Part 2 for details about the broadcast content.

Comments concerning the reception of NAVAREA XVII and XVIII broadcasts, especially above 75°N, would be appreciated and should be sent to:

NAVAREA XVII and XVIII
Prescott MCTS Centre
Telephone: 613-925-0666
Facsimile: 613-925-4519
Email: navarea17.18@innav.gc.ca

4.3.3.2 NAVAREAS IV and XII

The United States of America is responsible for NAVAREAS IV and XII.

NAVAREA IV covers the North Atlantic Ocean West of 35°W and north of 7°N. NAVAREA IV warnings are broadcasts over the AOR-W satellite at 10:00 UTC and 22:00 UTC. Ice reports for the North Atlantic are broadcast at 12:00 UTC. NAVAREA IV warnings are broadcast over NBDP from: Boston (NMF) at 01:40 UTC on 6314 kHz, 8416.5 kHz and 12579 kHz (FIB) and at 16:30 UTC on 8416.5 kHz, 12579 kHz, and 16806.5 kHz (FIB).

NAVAREA XII covers the North Pacific Ocean east of 180° and north of the equator, plus the area north of 3°25'S and east of 120°W. NAVAREA XII warnings are broadcasts over the POR satellite at 10:30 UTC and 22:30 UTC. These messages are broadcast over NBDP by Honolulu (NMO) at 03:30 and 17:30 UTC daily, on 8416.5 kHz, 12579 kHz, and 22376 kHz (FIB).

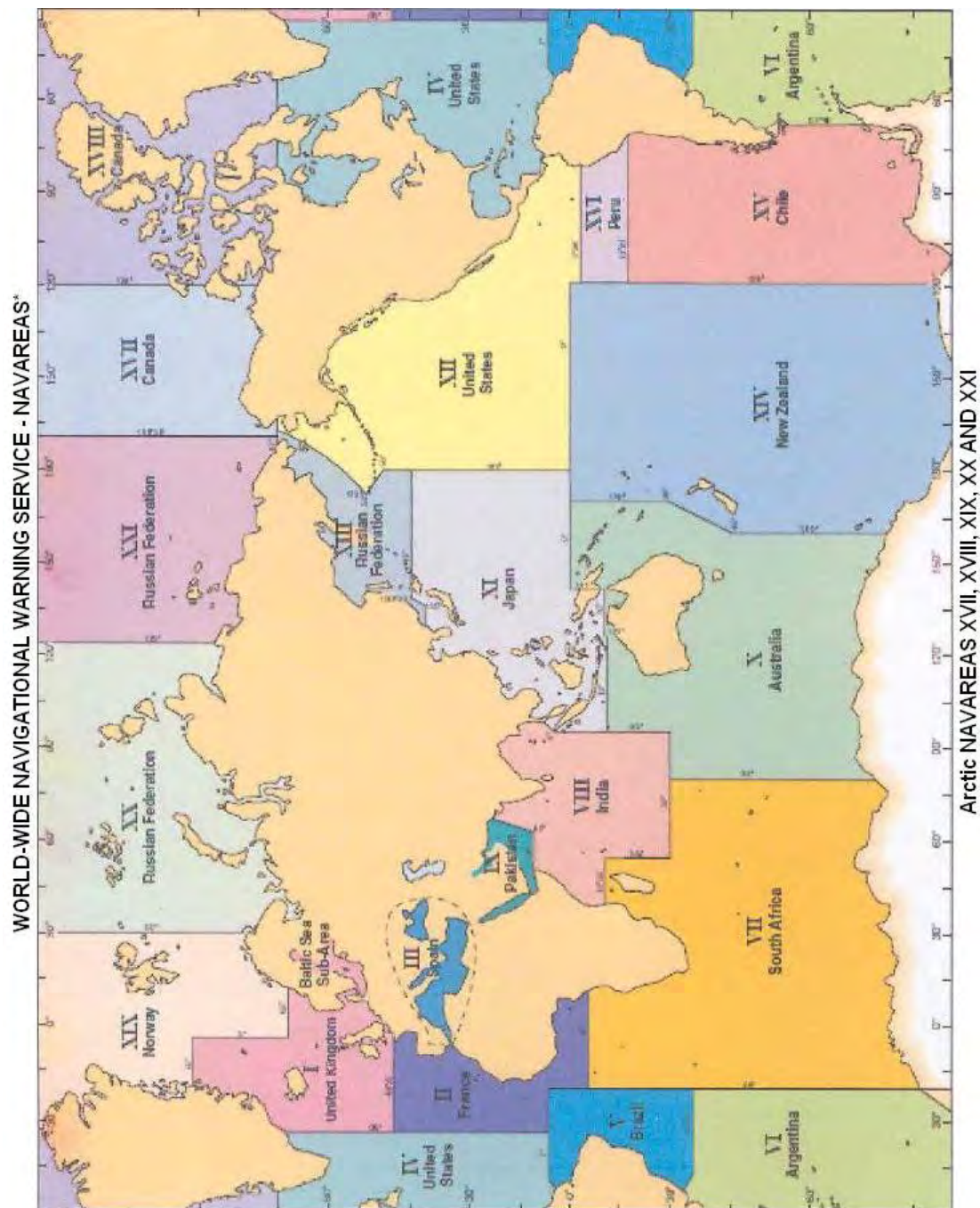
Consult the publication NP283 (2) *Admiralty List of Radio Signals* Volume 3 Part 2, for the listing of all NAVAREA Coordinators and broadcast schedules.

The NAVAREA warning system should normally be sufficient for the ships which proceed along the main oceanic routes of an Area. However, in some waters knowledge of the coastal warnings may prove necessary.

4.3.3.3 Subject Matter for NAVAREA Warnings Messages

The following subjects are considered suitable for broadcast as NAVAREA warnings. This list is not exhaustive and should be regarded only as a guideline. Furthermore, it presupposes that sufficiently precise information about the item has not previously been disseminated in a Notice to Mariners:

- a) casualties to lights, fog signals and buoys and other aids to navigation affecting main shipping lanes;
- b) the presence of dangerous wrecks in or near main shipping lanes and if relevant, their marking;
- c) establishment of major new aids to navigation or significant changes to existing ones when such establishment or change might be misleading to shipping;
- d) the presence of large unwieldy tows in congested waters;
- e) drifting hazards including derelict ships, ice, mines, containers and other large items;
- f) areas where search and rescue (SAR) and anti-pollution operations are being carried out (for avoidance of such areas);
- g) the presence of newly-discovered rocks, shoals, reefs and wrecks likely to constitute a danger to navigation, and, if relevant, their marking;
- h) unexpected alteration or suspension of established routes;
- i) cable or pipe-laying activities, the towing of large submerged objects for research or exploration purposes, the employment of manned or unmanned submersibles, or other underwater operations constituting potential danger in or near shipping lanes;
- j) the establishment of research or scientific instruments in or near shipping lanes;
- k) the establishment of offshore structures in or near shipping lanes;
- l) significant malfunction of radio-navigation services and shore-based maritime safety information and radio services;
- m) information concerning special operations which might affect the safety of shipping, sometimes over wide areas, e.g. naval exercises, missile firings, space missions, nuclear tests, ordnance dumping zones, etc. It is important that where the degree of hazard is known, this information is included in the relevant warning. Whenever possible, such warnings should be originated not less than five days in advance of the scheduled event and reference may be made to relevant national publications in the warning;
- n) acts of piracy and armed robbery against ships;
- o) tsunamis and other natural phenomena, such as abnormal changes to sea level;
- p) World Health Organization (WHO) health advisory information; and
- q) security-related requirements, in accordance with the requirements of the International Ship and Port Facility Security Code only.

Figure 4-11 - World-Wide Navigational Warning Service - NAVAREAS

4.3.4 Cellular Phone (*16) Service – Marine Emergencies

MCTS Centres in certain parts of Canada are connected to the cellular telephone network system where cellular telephone users can, in an emergency situation only, dial *16 or #16 (dependent upon the service provider) on their cellular telephone to access a MCTS Centre in order to obtain assistance.

Mariners are cautioned that a cellular telephone is not a good substitute for a marine radio because the maritime mobile radio safety system in the southern waters of Canada is based principally on VHF communications. Furthermore, VHF has the advantage that a call can be heard by the closest MCTS Centre(s) and by ships in the vicinity which could provide immediate assistance. On the other hand, the telephone cellular network is a party-to-party system and the benefit of the broadcast mode in an emergency situation cannot be obtained.

Mariners are reminded that the use of marine radio distress frequencies to obtain assistance in an emergency situation is the best option and that cellular phone should be used only as an alternative should the VHF radiotelephone set not be available. Standard distress alerting equipment, such as marine radio and EPIRBs should never be replaced by cellular telephone alone.

Note: Details of this service may be obtained by contacting local cellular telephone companies; however, mariners are cautioned that not all cellular telephone companies provide this service.

4.3.5 Direction Finding (VHF/DF) Service

MCTS Centres in certain parts of Canada are provided with VHF/DF equipment, primarily to determine or confirm the bearing, from a DF facility, of a vessel requiring assistance in a distress or other emergency situation. In addition, an estimated line of position from a DF facility can be provided to vessels that are uncertain of their locations. Location of VHF/DF facilities will be found in the appropriate centre listings in Part 2 of this publication. The intent of this service is not to provide a navigation service. Positions must be regarded as estimates only. Mariners are cautioned that any information provided shall be used at their own discretion.

4.3.5.1 Direction Finding Bearings

Any MCTS Centre will, on request, transmit signals that will enable a ship to take a radio bearing with its own direction finder. It is pointed out to masters of ships fitted with direction finding equipment employing DF loops that serious error may result in bearings taken if metallic material or equipment (poles, wires, winches, etc.) are erected in proximity to the DF antenna equipment after calibration.

Masters of ships are urged to exercise caution in the use of commercial radio broadcasting stations as radio beacons. Bearings taken on such stations may be very inaccurate owing to errors caused by coastal refraction and the calibration of the Direction Finder employed may vary considerably due to the wide difference in frequencies used, (i.e. the standard broadcast band spreads over approximately 1060 kHz). In addition, it is advisable to make certain that the position of the broadcast transmitter (not the studio) is accurately known before using it as a navigation aid.

4.3.6 Sail Plan Service

All small craft operators, including those making day trips, are encouraged to file a Sail Plan with a responsible person. This person should be instructed to call the Joint Rescue Coordination Centre (JRCC) if the vessel becomes overdue. The telephone number can be found at the front of most telephone books and should be included with the Sail Plan. In circumstances where it is not possible to file a Sail Plan with a responsible person, a Sail Plan may be filed by telephone, radio or in person with any Coast Guard MCTS Centre. While at sea, masters/operators who have filed a sail plan with a MCTS Centre are encouraged to file a daily position report during long trips. Upon your return, be sure to close (or deactivate) the sail plan you filed earlier. Forgetting to do so can result in an unwarranted search for you.

The information to be provided should be in accordance with the listing below:

- a) vessel identification (boat's name and license number);
- b) sail or power;
- c) vessel size and type;
- d) colour of hull, deck, and cabin;
- e) type of engines;
- f) other distinguishing features;
- g) radios and channels monitored (MF / HF / VHF);
- h) Maritime Mobile Service Identity (MMSI);
- i) satellite and/or cellular telephone number;
- j) description of life rafts or small boats available;
- k) number and type of flares;
- l) number of lifejackets, PFDs and/or survival suits;
- m) other safety equipment;
- n) name, address, and telephone number of vessel owner;
- o) other information;
- p) date and time of departure;
- q) number of people on board;
- r) departure point;
- s) route and stop-over points;
- t) destination;
- u) estimated date and time of arrival at destination; and
- v) telephone number of an emergency contact person.

4.3.7 Search and Rescue in Canadian Areas of Responsibility

The Canadian Forces (CF) in co-operation with the Canadian Coast Guard has overall responsibility for coordination of federal aeronautical and maritime Search and Rescue (SAR) activities in Canada, including Canadian waters and the high seas off the coasts of Canada. The CF provides dedicated SAR aircraft in support to marine SAR incidents. The Canadian Coast Guard coordinates maritime SAR activities within this area and provides dedicated maritime SAR vessels in strategic locations. Joint Rescue Coordination Centres (JRCC) are maintained at Victoria, BC, Trenton, ON and Halifax, NS. These centres are staffed 24 hours a day by Canadian Forces and Canadian Coast Guard personnel. Each JRCC is responsible for an internationally agreed upon designated area known as a Search and Rescue Region (SRR). In addition, a Maritime Rescue Sub-Centre (MRSC), staffed by Canadian Coast Guard personnel is maintained at Québec, QC to coordinate local marine SAR operations.

Joint Rescue Coordination Centre (JRCC)

JRCC Victoria, British Columbia

Telephone: 1-800-567-5111 British Columbia and Yukon
250-413-8933 Satellite, Local or out of area
727 Cellular

Email: jrccvictoria@sarnet.dnd.ca

JRCC Trenton, Ontario

Telephone: 1-800-267-7270 In Canada
613-965-3870 Satellite, Local or out of area

Facsimile: 613-965-7279

Email: jrcctrenton@sarnet.dnd.ca

4.3.7.1 Canadian Coast Guard Auxiliary (also known as Royal Canadian Marine Search and Rescue in British Columbia)

The Canadian Coast Guard Auxiliary (CCGA) or Royal Canadian Marine Search and Rescue (RCM-SAR) is an association of approximately 4500 dedicated volunteers operating close to 1300 vessels to support the Canadian Coast Guard in Marine Search and Rescue.

For more information on maritime SAR services in Canada, refer to Section 28 of the Annual Edition of Notices to Mariners, published by the Canadian Coast Guard, Marine Navigation Services.

4.3.8 Marine Communications and Traffic Services Message Service

4.3.8.1 Messages no longer accepted:

- a) ships' business messages;
- b) private messages.

4.3.8.2 Messages handled without charge by MCTS Centres:

- a) messages pertaining to weather or ice information and ice routing;
- b) messages concerning aids to navigation;
- c) Amver Messages, addressed AMVER HALIFAX;
- d) radiomedical messages;
- e) messages reporting pollution;
- f) messages addressed to a port or a member of the Canadian Coast Guard that involves a report of a ship movement, position or condition;
- g) messages addressed to a Joint Rescue Co-ordination Centre (JRCC) or Maritime Rescue Sub-Centre (MRSC);
- h) pilotage messages;
- i) official Naval messages;
- j) quarantine messages addressed to "Quarantine"; and
- k) messages requesting a doctor to meet the ship on arrival.

4.3.8.3 Weather Messages

Weather reports in the international meteorological code, made at the standard synoptic hours of 00:00, 06:00, 12:00 and 18:00 UTC, are solicited from ships of all nationalities which have been recruited by their own national weather service, or other weather services, to make weather reports on a regular basis. These reports should be made and transmitted to the nearest MCTS Centre, irrespective of the ship's position. In fact, reports made close to, or even within sight of land, are equally important to reports made offshore, due to the greater variability of weather conditions in proximity to a coastline.

4.3.8.4 Pollution Messages

All vessels plying Canadian and adjacent waters are requested to report oil slicks or pollution of any type to the nearest MCTS Centre.

4.3.8.5 Medical Advice Messages

Masters of ships may obtain medical advice by addressing a radiotelegram to "Radiomedical" and routing it via the nearest MCTS Centre which will refer the message to the nearest medical authority and transmit the reply to the ship.

4.3.8.6 Quarantine Messages

1. In the following circumstances only, the person in charge of a vessel shall, by radio, at least 24 hours prior to the vessel's estimated time of arrival at its port of destination, notify or cause the notification of a quarantine officer at the quarantine station designated in paragraph (3) for that port of the occurrence.

Where, in the course of a voyage of a vessel:

- a) a member of the crew or a passenger on board the vessel exhibits one or more of these signs or symptoms:
 - i. appears obviously unwell;
 - ii. cough with blood;
 - iii. fever or chills (profuse sweating, unusually flushed or pale skin, shivering); and
 - iv. shortness of breath or difficulty breathing;

- v. repeated coughing;
- vi. diarrhea;
- vii. headache;
- viii. recent confusion;
- ix. skin rash;
- x. bruising or bleeding without injury; and
- xi. death.

That person(s) should be isolated in order to minimize the exposure of crew and passengers.

- b) the person in charge of the vessel is, during the period:
 - i. of four weeks preceding the estimated time of arrival of the vessel; or
 - ii. since he last submitted a declaration of health as required by section 16, whichever is the lesser, aware of any instance of illness among the crew or passengers that he suspects is of a communicable nature and may lead to the spread of disease.
 - c) a certificate establishing that the vessel has been de-ratted or exempted from de-ratting procedures has expired or is about to expire.
2. At the same time, the person in charge of a vessel shall, by radio, provide the quarantine officer with the following information:
- a) the name and nationality of the vessel;
 - b) the ports called at during the voyage of the vessel;
 - c) the nature of the cargo on board the vessel;
 - d) the number of persons comprising the crew of the vessel;
 - e) the number of passengers on board the vessel;
 - f) the port of destination of the vessel and the name of the vessel's owner or, if the owner is not in Canada, the name of the vessel's agent in Canada;
 - g) the condition of all persons on board the vessel and details of any death or illness occurring during the voyage;
 - h) whether the body of any person is being carried on the vessel;
 - i) the estimated time of arrival of the vessel at the port of destination; and
 - j) the date and place of issuance of any de-ratting certificate or de-ratting exemption certificate applicable to the vessel.
3. For the purposes of paragraph (1), the quarantine station for vessels bound for a port in the Province of British Columbia or a port in the Yukon Territories is the Vancouver Quarantine Station at 604-317-1720 (24 hour phone line) or can email at quarantinewest@phac-aspc.gc.ca if notification is 48 hours or greater prior to arrival.
4. The person in charge of a vessel who wishes to change his port of destination after receiving instructions from the quarantine officer shall notify him of such change and request new instructions.

4.3.8.7 Pilotage Messages

For detailed information on Notices to Obtain Pilot, Notices of Departure, Notices of Movage, Optional Notices and Required Information, please refer to Section 23 of the latest Annual Edition of Notices to Mariners, published by the Canadian Coast Guard, Marine Navigation Services.

4.3.8.8 Official Naval Messages

For detailed information on Naval Messages to Canadian and Commonwealth ships in Canadian areas, please refer to Section 39 of the latest Annual Edition of Notices to Mariners, published by the Canadian Coast Guard, Marine Navigation Services.

4.3.9 Icebreaking and Ice Routing Services

4.3.9.1 Ice Navigation in Canadian Waters

The nautical publication "*Ice Navigation in Canadian Waters*" is published by the Canadian Coast Guard in collaboration with Transport Canada, Canadian Ice Service, and the Canadian Hydrographic Service. The *Charts and Nautical Publications Regulations* require this publication to be carried on board if the vessel is making a voyage during which ice may be encountered.

The publication is available to download, free-of-charge, from

http://www.ccg-gcc.gc.ca/Ice_home/Ice_Publications/Ice-Navigation-in-Canadian-Waters.

There are a variety of icebreaking and support services available to ships transiting Canadian ice-covered waters. Ice Operations Centres are in operation seasonally as ice conditions dictate.

These Centres work in conjunction with Marine Communications and Traffic Services Centres to provide up-to-date ice information, to suggest routes for ships to follow through or around ice, and to co-ordinate icebreaker assistance to shipping.

Ice Operations Centres are in contact with icebreakers at all times and monitor progress of shipping within their area of responsibility. In addition, Environment Canada's Canadian Ice Service (CIS) has fully qualified Ice Service Specialists and ice reconnaissance aircraft who are involved with Ice Operations Centres on a full-time basis throughout the ice navigation season. The Coast Guard Icebreaking Superintendents have a complete and current picture of the prevailing ice conditions in their area and the anticipated trend of conditions and are therefore well equipped to provide reasoned advice on the best routes to pursue.

To obtain the maximum benefit from the service, it is essential that Masters report to the Canadian Coast Guard before their ships enter waters where ice may be encountered. These initial reports and subsequent position reports from ships will ensure a continuing watch on the ship's progress by the CCG Ice Operations Centres and, in the event icebreaker support becomes necessary, this can be provided with a minimum of delay. There are a limited number of icebreakers available to support shipping. Masters are encouraged to follow the recommended route with which they are provided. They may also assist and support this service by providing reports on the ice they encounter.

4.3.9.2 Joint Industry-Government Guidelines

Recognizing that special risks of ice damage may exist in certain waters off the East Coast of Canada during winter and spring months and that these may affect safety and contribute to marine pollution, the *Joint Industry-Government Guidelines for the Control of Oil Tankers and Bulk Chemical Carriers in Ice Control Zones of Eastern Canada (JIG) – TP15163* were developed and have been in effect since November 1979.

These Guidelines apply to all laden oil tankers and to tankers carrying liquid chemicals in bulk when proceeding through an active Ice Control Zone in Eastern Canadian waters and fishing zones south of 60° north. The Canadian Coast Guard may declare any ice control zone to be an active Ice Control Zone and promulgate this information via Notice to Shipping and Notices to Mariners. When proceeding through an active Ice Control Zone, all ships to which the Guidelines apply should have on board a copy of the guidelines and at least one "Ice Advisor", who meets the requirements as prescribed in JIGs.

The following may be contacted for information on ice control zones:

Ice Atlantic

Canadian Coast Guard Ice Operations Centre
P.O. Box 5667
St. John's NL A1C 5X1
Telephone: 709-772-2078 / 1-800-565-1633
Iceatl@dfo-mpo.gc.ca

For ice routing contact, ECAREG at:
Telephone: 902-426-4956
hlxecareg1@innav.gc.ca

Ice Montreal

Canadian Coast Guard Ice Operations Centre
Telephone: 1-855-201-0086/ US-Canada line: 1-844-672-8037
Facsimile: 514-283-1752
Ice-Montreal.XLAU@dfo-mpo.gc.ca

MARINFO Website: <http://www.marinfo.gc.ca/en/glaces/index.asp>
Icebreaking Website: <http://www.ccg-gcc.gc.ca/Icebreaking/home>

General Information Email: ice-glace@dfo-mpo.gc.ca

The complete version of JIG TP 15163 B (2011) is available at:
<http://www.tc.gc.ca/eng/marinesafety/tp-tp15163-menu-4025.htm>

4.3.10 Canadian Hydrographic Service

4.3.10.1 Conversion of Charts to North American Datum 1983 (NAD 83)

The Canadian Hydrographic Service is converting navigational charts to the North American Datum 1983 (NAD 83).

NAD 83 is considered equivalent to the World Geodetic System 1984 (WGS 84) recently adopted as the horizontal datum for world-wide use. The advantage of the new datum is its compatibility with the NAVSTAR (GPS) satellite positioning system.

The difference in the position of the same point when quoted on the former NAD 27 and the new NAD 83 is up to 60 metres on the Atlantic coast, about 110 metres on the Pacific coast and almost zero near Chicago although there can be local discrepancies from these approximations.

Horizontal positions obtained from satellite receivers are based on NAD 83 (WGS 84) and must be converted to the horizontal chart datum (if not NAD 83) before being used.

A note has been added to nearly all existing charts indicating the datum on which the chart is based, and providing the increase or decrease required to convert the latitude and longitude from NAD 83 to the chart datum.

New Charts and New Editions being produced are now almost always based on NAD 83.

Note: Latitude and longitude positions given in this publication are in NAD 83 unless otherwise indicated.

4.3.11 Inspection of Radio Apparatus

The Canadian Coast Guard, on behalf of Transport Canada, is responsible for the conduct of ship radio inspections pursuant to the *Canada Shipping Act, 2001*. Queries concerning the standards governing inspections of radio apparatus fitted in ships for safety purposes may be sent to:

Program Manager, Ship Radio Inspection
Fisheries and Oceans Canada
Canadian Coast Guard
200 Kent Street, 7th Floor, Station 7S001
Ottawa, ON K1A 0E6
Inquiries: InfoPol@dfo-mpo.gc.ca

Owners and masters of Canadian ships, that are required to be fitted with a radio installation under the provisions of the *Canada Shipping Act, 2001* are reminded that:

The master of a ship, other than a Safety Convention ship, shall ensure that the ship station is inspected by a radio inspector:

- a) within the 30 days before the ship puts to sea for the first time, if the ship is:
 - i) 20 m or more in length;
 - ii) a tow-boat; or
 - iii) carrying more than 12 passengers on a voyage any part of which is in a VHF coverage area or more than five miles from shore;
- b) at least once every 48 months, in the case of a ship referred to in paragraph (a) that is certified for home-trade voyages, Class IV, or minor waters voyages, Class II; and
- c) at least once every 12 months, in the case of a ship referred to in paragraph (a) that is certified for voyages other than a home-trade voyage, Class IV, or a minor waters voyage, Class II.

The master of a ship that is required to be inspected under the *Agreement between Canada and the United States of America for Promotion of Safety on the Great Lakes by Means of Radio, 1973* need not comply with paragraphs (1)(b) or (c), but shall ensure that the ship station is inspected by a radio inspector before the ship enters the Great Lakes Basin for the first time and at least once every 13 months thereafter while continuing to navigate in the Great Lakes Basin.

A non-Canadian ship which does not have a valid Radio Safety Certificate on board may be detained by a port Customs Officer until a valid certificate has been obtained.

A fee for the conduct of ship radio inspections is levied in accordance with *the Ship Radio Inspection Fees Regulations*. The fee is payable upon completion of the inspection.

Applications for radio inspections of Canadian ships should be filed with the Canadian Coast Guard. The form entitled: [Application for Radio Inspection, Compulsory Fitted Ships \(FP-5286-E\)](#) should be used for this purpose. Such request by owners, agents or masters should be received by the Canadian Coast Guard at least three working days in advance of the date requested for inspection.

The owners, agents or masters of Canadian ships requiring radio inspection while outside of Canada should make application by fax or letter to:

Transport Canada
Director General
Marine Safety Directorate
Tower C, Place de Ville
330 Sparks Street
Ottawa ON K1A 0N8

Telephone: 613-998-0610

Facsimile: 613-954-1032

Non-Canadian ships (except Liberian ships) may obtain a cargo Ship Safety Radio Certificate (GMDSS) in Canada. Applications should originate with the owners, ship agents or masters of the ships concerned and be supported by confirmation from the Consul or other official representative of the country in which the ship is registered. Confirmation shall be in writing. It is the responsibility of the owner, agent or master to contact the Consul or official representative and arrange to submit the necessary confirmation to the local Canadian Coast Guard inspection office. Where time is limited, a verbal request for an inspection may be accepted from the Consul or official representative (a person who has a document from an Administration giving him the official power to act on their behalf), provided that the confirmation is submitted later.

Applications for radio inspections of Canadian ships wintering in U.S. Great Lakes ports should be made by the owners, agents or masters on FCC form 809 and filed directly with the FCC Field Engineering office nearest to the port of which the inspections are desired. Copies of form 809 are available from any of the FCC offices serving the Great Lakes.

4.3.11.1 Ship Radio Inspection Contacts

Hay River, Northwest Territories

Supervisor of Technical Maintenance
Fisheries and Oceans Canada
Canadian Coast Guard Ships Electronics Workshop
42037 MacKenzie Highway
Hay River Northwest Territories X0E 0R9

Telephone: 867-874-5530

Facsimile: 867-874-5532

Richmond, British Columbia

Supervisor of Technical Maintenance
Fisheries and Oceans Canada
Canadian Coast Guard Ships Electronic Workshop
4270 Inglis Drive
Richmond British Columbia V7B 1L7

Telephone: 604-666-2311

Facsimile: 604-666-1786

Victoria, British Columbia

Supervisor of Technical Maintenance
Fisheries and Oceans Canada
Canadian Coast Guard Ships Electronic Workshop
25 Huron Street
Victoria British Columbia V8V 4V9

Telephone: 250-480-2644
Facsimile: 250-480-2666

Lazo, British Columbia

Supervisor of Technical Maintenance
Fisheries and Oceans Canada
Canadian Coast Guard Ships Electronic Workshop
299 Wireless Road
P.O. Box 220
Lazo British Columbia V0R 2K0

Telephone: 250-339-5211
Facsimile: 250-339-7922

Prince Rupert, British Columbia

Supervisor of Technical Maintenance
Fisheries and Oceans Canada
Canadian Coast Guard Ships Electronic Workshop
P.O. Box 906
Prince Rupert British Columbia V8J 4B7

Telephone: 250-627-3073
Facsimile: 250-624-6518

4.3.12 Radio Station Licensing and MMSI Numbers

To obtain further information on radio station licensing and Maritime Mobile Service Identity (MMSI) numbers contact Industry Canada at:
<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01742.html> or locate the nearest Industry Canada office through the local telephone directory

4.3.13 Marine Telephone Service

4.3.13.1 Radiomedical Calls

Mariners may obtain medical advice by calling a Marine Communications and Traffic Services (MCTS) Centre and requesting to be connected to a medical professional. The Canadian Coast Guard will connect the vessel to an appropriate medical professional via the Marine Telephone System.

For mariners who wish to make their own arrangements for medical advice, radiomedical services are available in numerous languages to vessels flying any flag at any location through the International Radio-Medical Centre (CIRM) in Rome, Italy. This centre is staffed 24/7/365 by specially trained physicians and radio operators who also have access to specialists in all medical branches. The CIRM can be contacted via the following means:

Telephone: 39 6 54223045
Mobile: GSM 39 348 3984229
Facsimile: 39 6 5923333
Telex: 043 612068 CIRM I
Email: telesoccorso@cirm.it
Website: <http://www.cirm.it/>

PART 5 ENVIRONMENT CANADA'S MARINE AND ICE WARNING AND FORECAST PROGRAMS

5.1 BACKGROUND

Environment Canada's Meteorological Service of Canada (MSC) is the agency responsible for delivering Canada's weather service. The MSC offers a broad range of products and services that are designed to help mariners make informed decisions on how weather will affect them. The Canadian Coast Guard plays an important role in disseminating forecasts and warnings and in collecting and relaying weather information from volunteer observers and ships.

The constant stream of data coming from both automated and manned coastal observation stations, as well as ships and weather buoys, is supplemented by satellite imagery, weather radar and a full set of numerical weather products adapted for marine operations.

5.2 MARINE WARNING PROGRAM

Warnings of extreme weather events that pose a threat to life and property at sea such as strong winds, freezing spray, high coastal waters, squall lines and other localized phenomena shall be issued for the offshore economic zone including the St. Lawrence Seaway and major inland waters.

Major inland waters are defined as having significant marine activity and where time to reach safe harbour is comparable to the marine weather warning lead time. The criteria for issuing weather warnings is based on national guidelines, but determined regionally to account for regional climatology and the nature of the regional marine community. The following table describes the warning program:

Table 5-1- Synoptic Warnings

Synoptic Warnings*	Warning Criteria
Strong wind warning ¹	Winds ² 20 to 33 knots inclusive occurring or expected to occur in any portion of a marine area including any portion defined by a local effect or an "except" statement.
Gale warning	Winds ² 34 to 47 knots inclusive occurring or expected to occur in any portion of a marine area including any portion defined by a local effect or an "except" statement.
Storm warning	Winds ² 48 to 63 knots inclusive occurring or expected to occur in any portion of a marine area including any portion defined by a local effect or an "except" statement.
Hurricane force wind warning	Winds ² 64 knots or above occurring or expected to occur in any portion of a marine area including any portion defined by a local effect or an "except" statement.
Freezing spray warning	Ice accretion rate of 0.7 cm/hr or more occurring or expected to occur in any portion of a marine area including any portion defined by a local effect or an "except" statement.

Notes:

*These warnings are included in the body of the text forecast.

1. The strong wind warning program is active on a regional basis as required for coastal and inland waters during the recreational boating season. A warning is not required when the wind is described using the range 15-20 knots. This range is normally used for greater accuracy.

2. *Gusts are excluded from the definition.*

Range: *With the exception of Note (1) above, when a range is used to describe the wind speed, the upper value of the range determines the warning category.*

Table 5-2 - Localized Warnings and Watches

Localized Warnings / Watches*	Warning Criteria
Squall watch	Advance notice of conditions that are favourable to the development of squalls.
Squall warning	Wind gust \geq 34 knots associated with a line or an organized area of thunderstorms.
Tornado watch	Advance notice of conditions that are favourable to the development of tornados.
Tornado warning	Evidence of tornado formation (radar, report from a reliable source, etc.) over a marine area, or an existing tornado moving from land to an adjacent marine area.
Waterspout watch**	Advance notice of conditions that are favourable to the development of cold-air waterspouts.
High water level warning***	Issued to warn mariners and coastal populations of potentially hazardous impacts due to abnormally high water levels or waves along coastal areas.
Special marine warning/watch	Used to describe conditions other than those defined above that may have potentially hazardous impacts on navigation.

Notes: * These warnings/watches are delivered using separate messages.

** Waterspout warnings are not issued.

*** High water level warnings are not currently issued for Pacific and Arctic waters.

Ice warnings: refer to the Canadian Ice Service, Section 5.10

5.3 MARINE AND ICE FORECAST PROGRAM

Marine forecasts are issued for the offshore economic zone including the St. Lawrence Seaway and major inland waters.

For sea ice, ice forecasts are issued for offshore marine areas as well as the Great Lakes. The production schedule is detailed in each regional section of this part. The forecast program includes the following bulletins:

Table 5-3 - Marine Forecast Program

Forecast or Bulletin Name	Details
Technical marine synopsis	Provides the positions and trends of the main weather systems for the forecast period covering Days 1 and 2.
Marine forecast (or Regular marine forecast)	Provides information on: synoptic warnings, wind, visibility, precipitation and freezing spray. It may include air temperature as appropriate. Valid for Days 1 and 2.
Recreational boating marine forecast	Tailored to the needs of recreational boaters, it is available on a seasonal basis and only in specific regions.
Marine weather statement	Issued when deemed necessary, it provides additional information on marine conditions.
Marine weather advisory	Issued when deemed necessary, it provides information on potentially hazardous marine conditions.

Forecast or Bulletin Name	Details
Wave height forecast	Provides information on significant wave heights valid for Days 1 and 2 (not available for northern and Arctic lakes or inland waterways).
Extended marine forecast	Meant for longer-range planning purposes, it provides an extended marine wind outlook for Days 3, 4, and 5.
Iceberg bulletin	Provides information on distribution of icebergs valid for the time of issue of the bulletin.
Ice forecasts	Provides information on hazardous ice conditions valid for Days 1 and 2.
NAVTEX ¹	International Maritime Organization (IMO)-compliant NAVigational Telex bulletin issued with each regular marine forecast or ice forecasts in a standardized abbreviated format - see Section 5.7.1 for Abbreviations.
MAFOR ¹	This is a specialized coded marine forecast produced for Québec and Ontario regions.

Note (1): More details on NAVTEX are provided in section 5.7.

5.3.1 Monitoring the Forecast

Forecasts are monitored, and amended as necessary, to reflect unexpected or changing weather conditions according to criteria based on the following principles:

- a) when safety or security is at risk;
- b) when inconvenience to the marine community will be extensive; or
- c) when the product could adversely affect the credibility of the marine forecast program.

5.3.2 Marine and Ice Forecast Areas

Marine forecasts and ice forecasts are issued for marine and ice areas as outlined in the regional maps. The sizes and boundaries of these areas are determined regionally based on the following considerations:

- a) marine traffic density;
- b) the ability to forecast to the proposed resolution;
- c) the degree to which, climatologically, marine weather varies; and
- d) the ability to distribute the information effectively to the marine community.

5.3.3 Current Conditions

Current weather data is available to Canadians for their local area. The frequency and quality of the data will be consistent with the standards established by the World Meteorological Organization (WMO). The data may include, as appropriate:

- a) wind speed and direction;
- b) atmospheric pressure;
- c) sky conditions;
- d) precipitation type;
- e) restrictions to visibility;
- f) wave height;
- g) current temperature.

General information on current sea-ice will be provided to the marine community once a week to provide an adequate planning tool for those considering entering ice-encumbered waters.

5.3.4 Emergency Response

Meteorological support is provided during emergencies and includes the provision of meteorological information and forecasts. In the case of a pollution event, Environment Canada adheres to the "polluter pay" policy for the provision of all services. Where agreements are in place, Environment Canada will make its distribution systems available to transmit vital information during emergency situations.

5.3.5 Delivery of Marine Warning and Forecast Services

Delivery of marine warning and forecast services to mariners navigating waters within Environment Canada's forecast areas of responsibility is primarily by mass communication in order to reach the greatest number of mariners through the standard communications technologies available to mariners. The following principles apply, regardless of the specific available technologies:

- a) Marine forecasts and warnings comprising the meteorological Maritime Safety Information (met MSI) issued by Environment Canada will be made available to the marine community via the Canadian Coast Guard Marine Communications and Traffic Services according to established procedures within the framework of the Global Maritime Distress and Safety System (see RAMN, Section 4.2.1 General Procedures – Systems – GMDSS).
- b) Internet access via the World-Wide Web. All forecast and warning information will be found at the following address: http://www.weather.gc.ca/canada_e.html. Mariners should note, however, that the internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest marine forecasts and warning information. Access to the internet may be interrupted or updated information delayed without prior notice.
- c) Marine and Environmental Advisories, Watches and Warnings are distributed through various mechanisms including partnerships with national and regional media distributors and local emergency measures organizations.
- d) In addition to the aforementioned mediums, basic services to mariners and Canadians in general shall also be delivered by mass distribution in partnership with media, relying on current and developing technologies in radio, television, newspaper and the Internet. These distribution mechanisms represent the primary methods by which most Canadians receive their weather information, now and in the future.

5.4 VOLUNTARY OBSERVING SHIP (VOS) PROGRAM

The VOS program has been discontinued within Canada. Environment Canada currently supports the Automated Voluntary Observing Ship program (AVOS) program and will support visiting VOS ships from other jurisdictions on a "best efforts" basis. Contact your regional PMO for further information.

5.5 BUOYS PROGRAM

In order to complement the observational network, Environment Canada operates a network of buoys across the country. This data becomes part of the collection of weather reports sent to the distribution network and is used to improve marine forecasting. The location, WMO identifiers and names of the Environment Canada buoys are given in the regional annexes.

Mariners are requested to use caution when approaching buoys as mooring chains are normally not detectable from a ship and can be damaged or even severed if there is contact. Such a mishap could possibly result in the buoy going adrift thus requiring a costly effort to recover the platform. Please keep the regional PMO informed of any incidents involving buoys.

Buoy locations: buoy positions are described in each specific regional annex.

5.6 PORT METEOROLOGICAL OFFICERS (PMOs)

In addition to a variety of other duties, PMOs also act as a liaison between Environment Canada and ships involved in the VOS and AVOS programs. This is to encourage vessels to report weather and ice conditions, to instruct observers about procedures and the use of code; to supply observing forms, handbooks (free of charge); to calibrate equipment; and, in some cases, to install, on loan, meteorological or oceanographic instrumentation. The PMO is also responsible for recruiting new vessels to participate in the AVOS program.

If a PMO visits your ship, feel free to ask questions about observing and coding, and reporting weather and ice conditions. Inform the PMO of any concerns you may have with forecasts, warnings, or facsimile products, especially if you have specific problems. The PMO will contact the appropriate party for investigation. Keep the PMO informed of your contact information.

5.6.1 Port Meteorological Officers (PMOs)

Great Lakes

Shawn Rickard, PMO
Environment and Climate Change Canada, MSC
87 Lakeshore Road
Burlington ON L7S 1A1
Telephone: 905-336-4672
Cellular: 905-512-5862
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Atlantic - Maritimes

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St-Lawrence – Québec

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Email: denis.erdely@canada.ca
Email: dragan.radovic@canada.ca

Great Slave Lake / Lake Athabasca / Western Arctic

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Bruce Lowry, PMO
Environment and Climate Change Canada, MSC
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Manitoba Lakes

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5.7 NAVTEX

MSC will provide Canadian Coast Guard with marine forecast information in NAVTEX format for coastal and offshore areas of responsibility based on IMO standards. Marine forecast information provided will include:

- a) warnings (winds and ice accretion);
- b) synopsis (major features); and
- c) forecasts (wind, visibility, ice accretion, wave height).

Each bulletin will contain a WMO telecommunication header, a valid period, notes on parameters used within the bulletin, a synopsis section, a weather forecast section and a wave forecast section. Below is a sample of a partial NAVTEX produced for Canadian Coast Guard Sydney MCTS. Note that NAVTEX will make use of abbreviations: this is necessary in order to comply with the physical limitations of the NAVTEX system. In the example, text in superscript indicates how abbreviations are used. Section 5.7.1 provides a detailed list used by NAVTEX.

NAVTEX service sample (518 kHz)	
Header	FQCN34 CWHX 171400
Title (part one)	NAVTEX/1 FOR SYDNEY VCO AT 10:00 AM AST FRI ^{Friday} 17 NOV November 2006.
►	
Weather forecast	
Parameters	VLD ^{valid period} 17/14Z-19/03Z, WND(KT) ^{wind in knots} , VIS(NM) ^{visibility in nautical miles} ABV ^{above} 1 NM UNL IND ^{unless indicated} , FOG IMPLIES VIS 1 NM OR LESS.
►	
Synopsis	SYNOPSIS: 17/14Z STRM ^{storm} 980 MB OVR SRN NFLD ^{over southern Newfoundland} 18/14Z STRM ^{storm} 985 MB OVR NRN NFLD. ^{over northern Newfoundland} 17/14Z RIDG OVR WRN QUE. ^{ridge over western Québec} 18/14Z RIDG OVR WRN GU ST LAW. ^{ridge over western Gulf of St Lawrence}
►	
Area name	EASTERN SHORE, FOURCHU:
Warning	WNG ^{warning} : NIL.
Wind forecast	WND: SW ^{southwest} 10-15. 17/18Z SE ^{southeast} 15-20. 18/06Z V15. 18/12Z SW ^{southwest} 15-20. 18/18Z SW20-25. 19/00Z SW15-20.
Visibility forecast	VIS: 17/13Z-19/03Z PTH-FG ^{fog banks} {... other marine areas }
End of weather	END/
Wave height forecast	
Parameters	WAVES(M) ^{metres} VLD 17/09Z-18/10Z.
Area name	EASTERN SHORE, SABLE, EAST SCOTIAN SLOPE-N ^{northern half} , FOURCHU, BANQUEREAU:
Height in meters	1-2. {.... Other marine areas }
End of waves and part one	END/
►	
NAVTEX service sample (518 kHz)	
Header ►	FQCN34 CYQX 171330
Title (VCO part two)	NAVTEX/2 FOR SYDNEY VCO.
►	
Weather forecast	
Parameters	VLD 17/13Z-19/03Z.
Marine areas ►	GULF-PORT AU PORT, SOUTHWEST COAST:
Warning ►	WNG: NIL.
Wind ►	WND: S10-15G20. 17/23Z S10-15. 18/11Z S15-20. 18/18Z SW20.
Visibility ►	VIS: 17/12Z-19/02Z FG-PTH.

		{... other marine areas}
End of weather		END/
▶		
Wave height forecast		
Parameters	▶	WAVES(M) VLD 17/09Z-18/09Z.
Marine areas	▶	GULF PORT AU PORT:
Waves	▶	1-2. 18/06Z 0-1.
		{... other marine areas}
End of waves and part two	▶	END/

Mariners navigating northern and Arctic waters are advised that marine forecast bulletins issued for MSC's METAREAs marine forecast service uses similar abbreviated text formatting as is used in the NAVTEX marine weather bulletins issued by the MSC. Further information regarding the MSC's METAREAs forecast program is provided in RAMN Part 5, Section 5.9, Northern Canada.

5.7.1 Abbreviations Used by MSC within NAVTEX and METAREAs Bulletins**Table 5-4 - Date/Time Standards**

April	APR	June	JUN	September	SEP
August	AUG	March	MAR	Sunday	SUN
December	DEC	May	MAY	Thursday	THU
February	FEB	Monday	MON	Today	TDY
Friday	FRI	November	NOV	Tonight	TNGHT
January	JAN	October	OCT	Tuesday	TUE
July	JUL	Saturday	SAT	Wednesday	WED

Table 5-5 - Marine Forecast Area Dividing Standards

eastern half	E	northwestern half	NW	southwestern half	SW
northeastern half	NE	southeastern half	SE	western half	W
northern half	N	southern half	S		

Table 5-6 - Forecast Parameters

valid	VLD	unless	UNL	milibar	MB
indicated	IND	knots	KT	nautical mile	NM
implies	IMPL	meters	M		

Table 5-7 - Wind Elements

east	E	south	S	west	W
north	N	southeast	SE	light	LGT
northeast	NE	southwest	SW	with gust to	G
northwest	NW	variable	VRB	warning	WNG

Table 5-8 - Freezing Spray Qualifier

freezing spray	FRZ-SPR	risk	RSK	outside the ice edge	OUT-EDGE
moderate	MOD	severe	SEV	over open water	OVR-OW
at times	OCNL				

Table 5-9 - Wave Elements

Ice covered	ICE
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Table 5-10 - Weather Elements

blizzard	BZ	hail	HL	mist patches	PTH-MIST
blowing snow	BS	heavy rain	HVY-RA	rain	RA
drizzle	DZ	heavy snow	HVY-SN	rain and snow mixed	MIX-RASN
flurries	LGT-SN	heavy thunderstorm	HVY-TS	scattered	SCT
fog	FG	ice fog	IFG	showers	SHWRS
fog banks	PTH-FG	ice pellets	IP	snow	SN
freezing drizzle	FRZ-DZ	light snow	LGT-SN	thunderstorm	TSTM
freezing rain	FRZ-RA	mist	MST	waterspout	WTSPT

Table 5-11 - Weather/Visibility Elements (qualifier)

at times	OCNL	as low as 1 mile	NR 1	one mile or less	0-1
heavy	HVY	in precipitation	IN-PRECIP	above one mile	ABV 1
occasional	OCNL	near zero	NR 0	visibility	VIS
very poor*	VERY POOR	poor*	POOR	moderate*	MOD
good*	GOOD				

Table 5-12 - Trend Descriptors (synopsis)

building	BLDN	intensifying	INTSF	splitting	SPLIT
dissipating	DISS	merging	MERG	weakening	WKN
deepening	DPN	quasi-stationary	QSTNR		

Table 5-13 - Systems Descriptors (synopsis)

cold front	C-FRONT	hurricane	HURR	ridge	RIDGE
col	COL	low	LOW	storm	STRM
disturbance	DISTURB	trough	TROUGH	tropical depression	TROP-DEP
flat low	FLAT LOW	post tropical storm	POST-TROP-STRM	tropical storm	TS
frontal system	FRONT	high	HIGH	warm front	W-FRONT

Table 5-14 - Position Descriptors (synopsis)

cape	CAP	lake	LK	pacific	PAC
coastal	CSTL	longitude	LONG	peninsula	PEN
from	FM	near	NR	river	RIV
island	IS	located on a line	ON LINE	strait	STR
latitude	LAT	over	OVR		

Table 5-15 - Cardinal Point Descriptors (synopsis)

central	CENTRAL	northeast-southwest	NE-SW	southeast	SE
east	E	northern	NRN	southeastern	SERN
eastern	ERN	north - south	N-S	southern	SRN
east - west	E-W	northwest	NW	southwest	SW
from	FM	northwestern	NWRN	southwestern	SWRN
north	N	northwest-southeast	NW-SE	west	W
northeast	NE	south	S	western	WRN
northeastern	NERN				

Table 5-16 - Territorial References (synopsis)

Alberta	ALTA	New Brunswick	NB	Ontario	ONT
British Columbia	BC	Newfoundland	NFLD	Prince Edward Island	PEI
Great Lakes	GRT LKS	Newfoundland and Labrador	NL	Québec	QUE
Gulf of St Lawrence	GU ST LAW	Nova Scotia	NS	Saskatchewan	SASK
Labrador	LAB	Northwest Territories	NWT	Yukon Territory	YT
Manitoba	MAN				

5.7.2 Ice Elements**Table 5-17 - Ice Concentration**

1 tenth	1	6 tenths	6	berg water	BW
10 tenths	10	7 tenths	7	consolidated	CONS
2 tenths	2	8 tenths	8	ice free	IF
3 tenths	3	9 plus tenths	9+	open water	OW
4 tenths	4	9 tenths	9	trace of	TR
5 tenths	5	9 to 10 tenths (lake ice)	9-10		

Table 5-18 - Ice Type

fast ice	FI	multi-year ice	MYI	thick lake ice	TKI
first year ice	FYI	new lake ice	NI	thin lake ice	THI
grey ice	GI	new ice	NI	very thick lake ice	VTKI
grey-white ice	GW	old ice	OI		
medium lake ice	MEDI	second year ice	SYI		

Table 5-19 - Ice Qualifier

light	LGT	pressure	PRESS	strong	STRG
moderate	MOD	rotten	ROTN		

Table 5-20 - Ice General

conditions	CDNS	except	EXC	including	INCL
edge	EDGE	ice	ICE	along the coast	ALNG CST
estimated	EST				

Table 5-21 - Ice Direction

eastward	EWD	northwestward	NWWD	southwestward	SWWD
northeastward	NEWD	southeastward	SEWD	westward	WWD
northward	NWD	southward	SWD		

* The visibility ranges associated with descriptive visibility terms as used in METAREAs visibility forecasts are given in the following table:

Table 5-22 - Visibility Category and Range

Visibility Category (NAVTEX term)	Visibility Range (nautical miles)
Very poor (VERY POOR)	Less than 0.5 ($\text{vis} < 0.5$)
Poor (POOR)	0.5 or greater and less than 2 ($0.5 \leq \text{vis} < 2$)
Moderate (MOD)	2 or greater and 5 or less ($2 \leq \text{vis} \leq 5$)
Good (GOOD)	Greater than 5 ($5 < \text{vis}$)



Environment Canada

Environnement Canada

SUGGESTIONS / COMMENTS / COMMENTAIRES

Help us to serve you: Make us aware of your comments regarding the Environment Canada Marine and Ice Services	Aidez-nous à mieux vous servir: Faites-nous parvenir vos commentaires concernant le programme de prévisions maritimes d'Environnement Canada
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Officer/Officier:		Return to / Envoyer à: National Service Operations Division – Marine and Transportation / Division des services opérationnels nationaux – marine et transports Environnement Canada / Environnement Canada PO Box / Case Postale 370 Gander, NL A1V 1W7 Fax / Télécopieur: 709-256-6627 Email / Courriel: Tom.King@canada.ca
Ship/Navire:		
Position Latitude:		
Position Longitude:		
Date:		

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5.8 PACIFIC COAST

5.8.1 Marine Weather Forecast Program

The Pacific Storm Prediction Centre (PSPC) located in Vancouver, BC issues regular marine forecast and technical synopsis 4 times daily at the same time throughout the year. The forecasts are valid out to midnight of the following day. Additional products include a 3 to 5 day marine wind outlook and a wave height forecast issued twice daily.

Table 5-23 - Production Schedule – Text Format

Forecast Name	Issue Time	Time Zone	Marine Region
Technical marine synopsis	04:00, 10:30, 16:00, 21:30	PDT / PST	Pacific waters
Marine forecast	04:00, 10:30, 16:00, 21:30	PDT / PST	Pacific waters
Marine weather statement	As needed	PDT / PST	Pacific waters
Marine weather advisory	As needed	PDT / PST	Pacific waters
Wave height forecast	04:00, 16:00	PDT / PST	Pacific waters
Extended marine forecast	04:00, 16:00	PDT / PST	Pacific waters

Table 5-24 - Production Schedule - NAVTEX format (refer to PART 2 for the MCTS broadcast schedule)

MCTS Centre	NAVTEX Transmitter	Header	Issue Time
Prince Rupert / VAJ	Amphitrite Point	FQCN33 CWVR	04:00, 10:30, 16:00, 21:30 PDT/PST
	Digby Island	FQCN35 CWVR	04:00, 10:30, 16:00, 21:30 PDT/PST

Marine Weather Warnings (refer to Table 5-1).

Note the following regional particularities:

	Warning Types	Comments
1	Strong wind warning	Issued only from March 20 to Remembrance Day. Applies to the inner waters only: Queen Charlotte Strait, Johnstone Strait, Strait of Georgia, Howe Sound, Haro Strait and Strait of Juan de Fuca.

5.8.2 Marine Weather Observations and Forecast Bulletins

Local weather observations are available for several stations including lighthouses, ocean buoys, automatic weather reporting stations and other stations of the regular weather network. The broadcast listing provides more information on available stations and broadcast times. Marine forecast bulletins are updated at regular intervals or whenever necessary. These bulletins are available on MSC's Automated Telephone Answering Device (ATAD), as well as Weatheradio and Canadian Coast Guard's continuous marine broadcast.

5.8.3 Weatheradio Canada

Weatheradio is a public service designed to make weather information available over VHF or FM radio continuously. Weatheradio is dedicated to transmitting up to the minute weather reports and forecasts directly to all users including the marine community.

Environment Canada Weatheradio operates four main stations serving Pacific region. These are:

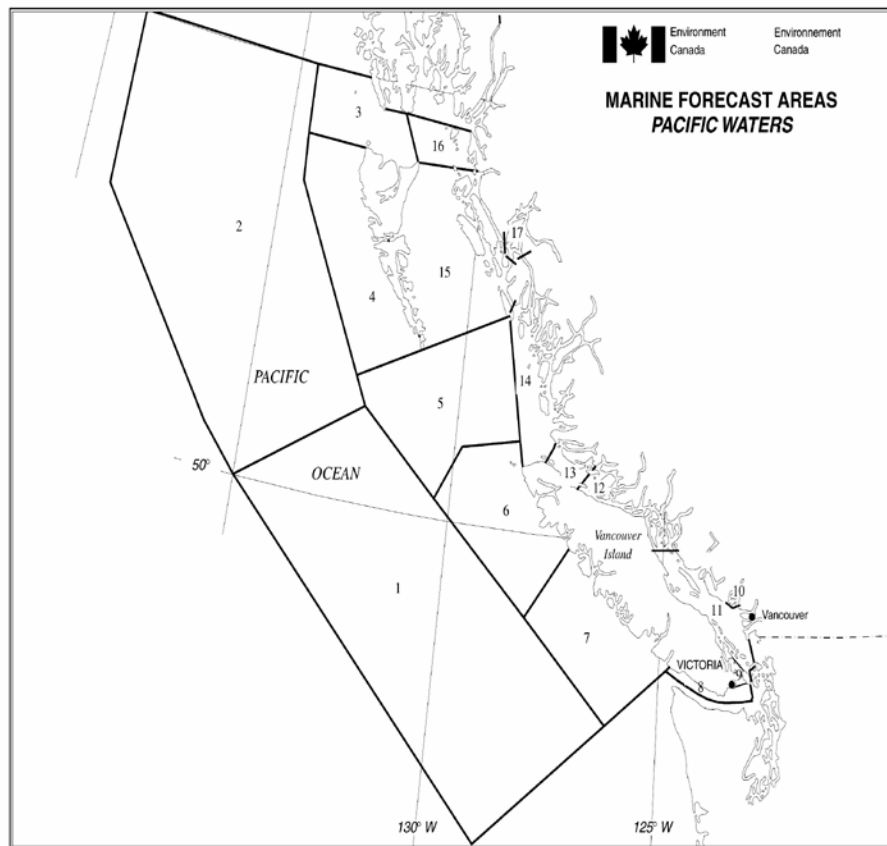
Stations	Call Sign	Frequency (MHz)	Note
Vancouver - Victoria	XKK506	162.400	Continuous broadcast
Port Hardy (FM)	CBPD-FM	103.700	Continuous broadcast
Port Hardy	VFM839	162.525	Continuous broadcast
Ucluelet	CIZ319	162.525	Continuous broadcast
Port Alberni	VFM825	162.525	Continuous broadcast
Prince Rupert	VXB571	162.525	Continuous broadcast
Masset	CKK900	162.425	Continuous broadcast

Further information regarding EC's Weatheradio network can be obtained via the Internet at

<http://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=792F2D20-1>

Table 5-25 - Buoy Positions – Northeast Pacific

WMO#	Name	LAT (deg)	LONG (deg)
46004	Middle Nomad	50.930 N	136.095 W
46036	South Nomad	48.355 N	133.938 W
46131	Sentry Shoal	49.906 N	124.985 W
46132	South Brooks	49.738 N	127.931 W
46145	Central Dixon Entrance	54.366 N	132.417 W
46146	Halibut Bank	49.340 N	123.727 W
46147	South Moresby	51.828 N	131.225 W
46181	Nanakwa Shoal	53.833 N	128.831 W
46183	North Hecate Strait	53.617 N	131.105 W
46184	North Nomad	53.915 N	138.851 W
46185	South Hecate Strait	52.425 N	129.792 W
46204	West Sea Otter	51.368 N	128.750 W
46205	West Dixon Entrance	54.165 N	134.283 W
46206	La Perouse Bank	48.835 N	125.998 W
46207	East Dellwood	50.874 N	129.916 W
46208	West Moresby	52.515 N	132.692 W

Figure 5-1 - Marine Forecast Areas: Pacific Waters

5.8.4 Marine Forecast Areas

Table 5-26 - Pacific Waters

Offshore		North Coast		South Coast	
Area	Area Name	Area	Area Name	Area	Area Name
001	Explorer	003	Dixon Entrance West	006	West Coast Vancouver Island North
002	Bowie	004	West Coast Haida Gwaii	007	West Coast Vancouver Island South
		005	Queen Charlotte Sound	008	Juan de Fuca Strait
		014	Central Coast from McInnes Island to Pine Island	009	Haro Strait
		015	Hecate Strait	010	Howe Sound
		016	Dixon Entrance East	011	Strait of Georgia
		017	Douglas Channel	012	Johnstone Strait
				013	Queen Charlotte Strait

5.8.5 Marine Weather Observations

Table 5-27 - Lighthouse Reports, (Type L), Automatic Reporting Stations (Type A), Ocean Buoys reports (Type B)

Area Name	Area Name	Area Name	Area Name
Addenbroke Island - L	Egg Island - L	Middle Nomad - B	Sheringham Point - A
Ballenas Island - A	Entrance Island - A, L	Nanakwa Shoal - B	Sisters Island - A
Bella Bella - A	Esquimalt Harbour - A	Nootka - L	Smith Island (USA)* - B
Boat Bluff - L	Estevan Point - A, L	North Hecate Strait - B	Solander Island - A
Bonilla Island - A, L	Fanny Island - A	North Nomad - B	South Brooks - B
Cape Beale - L	Friday Harbour (USA)* - A	Pachena Point - L	South Hecate Strait - B
Cape Flattery (USA)* - B	Green Island - L	Pam Rocks - A	South Moresby - B
Cape Lazo - L	Grey Islet - A	Pine Island - L	South Nomad - B
Cape Mudge - L	Grief Point - A	Point Atkinson - A	Tatoosh Island (USA)* - A
Cape Scott - L	Halibut Bank - B	Point Wilson (USA)* - L	Trial Island - L
Cape St James - A	Herbert Island - A	Port Angeles (USA)* - L	Triple Island - L
Carmanah Point - L	Holland Rock - A	Prince Rupert - A	Tsawwassen - L
Cathedral Point - A	Ivory Island - L	Pulteney Point - L	Tsawwassen Ferry- A
Central Dixon Entrance - B	Kelp Reef - A	Quatsino - L	Victoria Harbour - A
Chatham Point - L	Kindakun Rocks - A	Race Rocks - A	Victoria/Gonzales Pt - A
Chrome Island - L	La Perouse - B	Rose Spit - A	West Dixon Entrance - B
Cumshewa Island - A	Langara Island - A, L	Sandheads - A	West Moresby - B
Discovery Island - A	Lennard Island - L	Sartine Island - A	West Sea Otter - B
Dryad Point - L	Lucy Island - A	Saturna Island - A	

Area Name	Area Name	Area Name	Area Name
East Point - A	McInnes Island - L	Scarlett Point - L	
East Dellwood - B	Merry Island - L	Sentry Shoal – B	

** Note that the following stations are located in Washington USA: Cape Flattery, Friday Harbour, Point Wilson, Port Angeles, Smith Island, Tatoosh Island.*

5.9 NORTHERN CANADA

Includes: Western and Eastern Arctic, Hudson Bay and Major Inland Lakes of Manitoba, Northern Saskatchewan and Northwest Territories.

5.9.1 Marine Weather Forecast Program

The Prairie and Arctic Storm Prediction Centre (PASPC), which is jointly located in Edmonton and Winnipeg, provides marine weather forecasts in support of Arctic marine activity during the open water season from summer into parts of the fall. Wave height forecasts are provided for salt water areas. The PASPC-Edmonton forecast area encompasses Lake Athabasca, Great Slave Lake, the Mackenzie River, as well as the waterways of the Western and High Arctic, and Baffin Bay.

The PASPC-Winnipeg provides marine forecasts for Hudson Bay, Hudson Strait, Foxe Basin, Ungava Bay, and Davis Strait. Marine forecasts are also provided for Lake Winnipeg (north and south basins), Lake Manitoba and Lake Winnipegosis during the open water season in support of pleasure and commercial activities.

The forecast program for the Manitoba Lakes continues through the winter months as a public rather than a marine forecast in aid of commercial ice fishing. Minimum and maximum temperatures along with wind chill are included in the forecast.

Table 5-28 - Production schedule – Text Format

Forecast Name	Issue Time	Time Zone	Marine Region
Technical marine synopsis	06:30, 18:30	MDT / MST	Western Arctic
	06:30, 18:30	MDT / MST	Central Arctic
	04:45, 16:45	EDT / EST	Hudson Bay and Eastern Arctic
Marine forecast	08:00, 16:30, 21:30	CDT / CST	Manitoba
	05:00, 17:00	MDT / MST	Inland waters (Lake Athabasca, Great Slave Lake, the Mackenzie River)
	07:00, 19:00	MDT / MST	Western Arctic Waterway
	05:30, 17:30	EDT / EST	Arctic
	05:00, 17:00	CDT / CST	Hudson Bay
	05:30, 17:30	EDT / EST	Southern Nunavut
	05:00, 17:00	EDT / EST	Eastern Nunavut
Extended forecast	05:00, 17:00	MDT / MST	Inland waters
	07:00, 19:00	MDT / MST	Western Arctic Waterway
	05:30, 17:30	EDT / EST	Arctic
	05:00, 17:00	CDT / CST	Hudson Bay
	05:30, 17:30	EDT / EST	Southern Nunavut
	05:00, 17:00	EDT / EST	Eastern Nunavut
Wave height forecast	07:00, 19:00	MDT / MST	Western Arctic Waterway
	05:30, 17:30	EDT / EST	Arctic
	05:00, 17:00	CDT / CST	Hudson Bay
	05:30, 17:30	EDT / EST	Southern Nunavut
	05:00, 17:00	EDT / EST	Eastern Nunavut

Forecast Name	Issue Time	Time Zone	Marine Region
Marine weather statement	As needed	MDT / MST EDT / EST	Central Arctic Eastern Arctic
Marine weather advisory	As needed	MDT / MST EDT / EST	Central Arctic Eastern Arctic

Table 5-29 - Production Schedule - NAVTEX Format (refer to Part 2 for the MCTS broadcast schedule)

MCTS Centre	NAVTEX Transmitter	Header	Issue Time
Iqaluit / VFF	Iqaluit	FQCN36 CWNT	05:30, 17:30 EDT / EST

Marine Weather Warnings (refer to Table 5-1- Synoptic Warnings).

Note the following particularities:

	Warning Types	Comments
1	Strong wind warning	Applies to Manitoba Lakes, Lake Athabasca, Great Slave Lake and Mackenzie River

5.9.2 Weather and Ice Messages

Ship weather and ice reports in the international meteorological code, taken at the standard synoptic hours of 00:00, 06:00, 12:00 and 18:00 UTC are solicited from ships of all nationalities which have been recruited by their own national weather service, or other weather services. These reports should be transmitted directly to the circuit using Inmarsat. Alternatively, the observation should be passed to the nearest MCTS Centre, irrespective of the ship's position. Reports made close to, or even within sight of land, are as important as reports made offshore, due to the greater variability of weather conditions in proximity to a coastline. Such reports contribute to the overall knowledge of Arctic weather from both a real-time operational perspective and from a climate perspective.

The PASPC also welcomes weather, sea, and ice observations from the lakes. Real-time observations, and those up to a few hours after the event, are most valuable. Pass observations to 1 800 66STORM (1 800-667-8676).

Table 5-30 - Buoys Deployed During the Open Water Season

WMO#	Location/Information	LAT (deg)	LONG (deg)
45140	Lake Winnipeg South Basin (moored buoy)	50.48 N	96.44 W
45141	Great Slave (moored buoy 25 nm northeast of Hay River)	61.11 N	115.19 W
45144	Lake Winnipeg North Basin (moored buoy)	53.15 N	98.15 W
45145	Lake Winnipeg between North and South Basins	51.24 N	96.420 W
45150	Great Slave (moored buoy - immediate west of Inner Whaleback Rocks)	61.55 N	113.45 W
48021	Tuktoyaktuk (moored buoy - Beaufort Sea)	70.35 N	133.00 W

The Great Slave Lake buoys are deployed in early July and retrieved in late September or early October. They provide hourly wind, air temperature, surface water temperature and wave data.

The Lake Winnipeg South Basin buoys are deployed annually in May or June and retrieved in October. They provide hourly wind, air temperature, surface water temperature and wave data.

The Tuktoyaktuk buoy is deployed in early August and retrieved in late September. It provides hourly wind, air temperature, surface water temperature, and wave data.

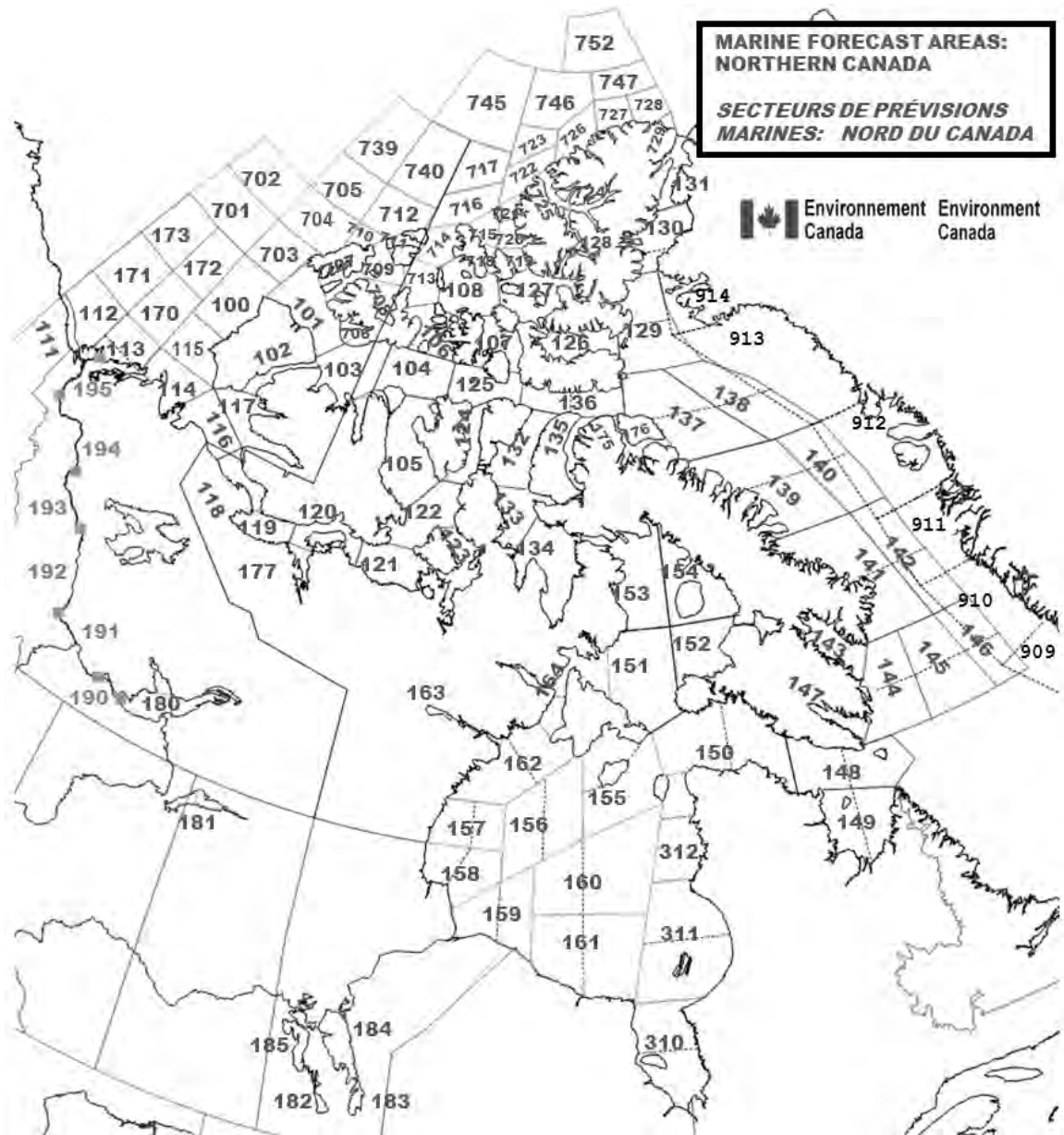
5.9.3 Weatheradio Canada

Weatheradio is a public service designed to make weather information available over VHF or FM radio continuously. Weatheradio is dedicated to transmitting up to the minute weather reports and forecasts directly to all users including the marine community.

Environment Canada Weatheradio operates several stations serving Northern region. These are:

Station	Call Sign	Frequency (MHz)	Effective Radiated Power (Watts)	Location
Arviat	CKO583	162.400	27	Arviat
Behchoko	CHR950	162.475	302	Behchoko
Cap Dorset (Kingait)	XJS717	162.550	25	Cap Dorset (Kingait)
Dauphin	VBA814	162.550	123	Moon Lake
Fort McPherson	CHR956	162.450	245	Fort McPherson
Fort Providence	CHR951	162.425	303	Fort Providence
Fort Simpson	CHR952	162.400	76	Fort Simpson
Fort Smith	CFM468	162.425	309	Fort Smith
Hay River	CIE211	162.550	245	Hay River
Inner Whaleback Rocks	XKI403	161.650	8	Inner Whaleback Rocks
Inuvik	VBU996	162.400	54	Hidden Lake
Iqaluit	VEV284	162.550	30	Iqaluit
Iqaluit (FM)	CIQA	93.3	42	Iqaluit Airport
Long Point*	VCI386	162.550	72	Long Point
Nahanni Butte	CHR957	162.525	224	Nahanni Butte
Norman Wells	CHR953	162.400	269	Norman Wells
Pine Point	XJS786	162.475	389	Pine Point
Rankin Inlet (Kangiqliniq)	XJS716	162.400	40	Rankin Inlet (Kangiqliniq)
Riverton*	XL471	162.400	195	Riverton
Tuktoyaktuk	CHR955	162.475	269	Tuktoyaktuk
Winnipeg*	XL538	162.550	126	Trizic Building
Yellowknife	VBC200	162.400	148	Yellowknife Seismic Station

**Note: Winnipeg, Riverton and Long Point provide continuous broadcast of marine weather forecasts and warnings for the Manitoba Lakes, and of marine weather observations when available. Further information regarding EC's Weatheradio network can be obtained via the Internet at <http://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=792F2D20-1>.*

Figure 5-2 - Marine Forecast Areas: Northern Canada

5.9.4 Marine Forecast Areas**Table 5-31 - Eastern and Western Arctic Waters, and Hudson Bay**

Number	Area Name	Forecast Availability Period*	Number	Area Name	Forecast Availability Period*
100	Prince Alfred	Shipping season	155	Coats	Shipping season
101	McClure	Shipping season	156	Central	Shipping season
102	Prince of Wales	Shipping season	157	Arviat	Shipping season
103	Melville	Shipping season	158	Churchill	Shipping season
104	Rae	Shipping season	159	York	Shipping season
105	McClintock	Shipping season	160	South-Central Hudson	Shipping season
106	Byam	Shipping season	161	South Hudson	Shipping season
107	Queens	Shipping season	162	Rankin	Shipping season
108	Maclean	Shipping season	163	Baker	Shipping season
109	(unused)		164	Roes Welcome	Shipping season
110	(unused)		170	North Tuktoyaktuk	Shipping season
111	Yukon Coast	Shipping season	171	North Mackenzie	Shipping season
112	Mackenzie	Shipping season	172	West Prince Alfred	Shipping season
113	Tuktoyaktuk	Shipping season	173	Northwest Beaufort	Shipping season
114	Baillie	Shipping season	175	Navy Board	Shipping season
115	Banks	Shipping season	176	Pond	Shipping season
116	Amundsen	Shipping season	177	Bathurst	Shipping season
117	Holman	Shipping Season	310	James Bay	Shipping season
118	Dolphin	Shipping season	311	Belcher	Shipping season
119	Coronation	Shipping season	312	Puvirnituq	Shipping season
120	Dease	Shipping season	701	CT4	Shipping season
121	Maud	Shipping season	702	CU4	Shipping season
122	St-Roch	Shipping season	703	South Prince-Patrick	Shipping season
123	Larsen	Shipping season	704	Prince Patrick	Shipping season
124	Peel	Shipping season	705	North Prince Patrick	Shipping season
125	Barrow	Shipping season	706	Liddon	Shipping season
126	Jones	Shipping season	707	Fitzwilliam	Shipping season
127	Norwegian	Shipping season	708	Griper	Shipping season
128	Eureka	Shipping season	709	Ballantyne	Shipping season
129	Clarence	Shipping season	710	Brock	Shipping season
130	Kane	Shipping season	711	Wilkins	Shipping season
131	Robeson	Shipping season	712	Borden	Shipping season
132	Regent	Shipping season	713	Hazen	Shipping season
133	Boothia	Shipping season	714	Gustaf	Shipping season

Number	Area Name	Forecast Availability Period*	Number	Area Name	Forecast Availability Period*
134	Committee	Shipping season	715	Peary	Shipping season
135	Admiralty	Shipping season	716	South Ellef Ringnes	Shipping season
136	Lancaster	Shipping season	717	Ellef Ringnes	Shipping season
137	West Baffin	Shipping season	718	Hassel	Shipping season
138	East Baffin	Shipping season	719	Massey	Shipping season
139	West Clyde	Shipping season	720	South Sverdrup	Shipping season
140	East Clyde	Shipping season	721	North Sverdrup	Shipping season
141	West Davis	Shipping season	722	South Axel Heiberg	Shipping season
142	East Davis	Shipping season	723	Axel Heiberg	Shipping season
143	Cumberland	Shipping season	724	Greely	Shipping season
144	West Brevoort	Shipping season	725	Nansen	Shipping season
145	Central Brevoort	Shipping season	726	Ellesmere	Shipping season
146	East Brevoort	Shipping season	727	Ward Hunt	Shipping season
147	Frobisher Bay	Shipping season	728	Bartlett	Shipping season
148	Resolution	Shipping season	729	Alert	Shipping season
149	Ungava	Shipping season	739	CV4	Shipping season
150	Nottingham	Shipping season	740	CV5	Shipping season
151	West Foxe	Shipping season	745	CW3	Shipping season
152	East Foxe	Shipping season	746	CW4	Shipping season
153	Igloolik	Shipping season	747	CW5	Shipping season
154	Prince Charles	Shipping season	752	CX4	Shipping season

** If required, marine forecasts may also be made available outside the regular availability period upon user request.*

Table 5-32 - Inland Waters

Number	Area Name	Availability Period
180	Great Slave Lake	Open water season
181	Lake Athabasca	Open water season
182	Lake Manitoba	Open water season
183	Lake Winnipeg - south basin	Open water season
184	Lake Winnipeg - north basin	Open water season
185	Lake Winnipegosis	Open water season
190	Wrigley Harbour (mile 0) to Axe Point (mile 91)	Open water season
191	Axe Point (mile 91) to Camsell Bend (mile 290)	Open water season
192	Camsell Bend (mile 290) to Tulita (mile 512)	Open water season
193	Tulita (mile 512) to Fort Good Hope (mile 684)	Open water season
194	Fort Good Hope (mile 684) to Point Separation (mile 913)	Open water season
195	Point Separation (mile 913) to Kittigazuit Bay (mile 1081)	Open water season

Table 5-33 - Danish Marine Forecasts for Baffin Bay Waters available via *Danish Meteorological Institute*, Copenhagen, Telephone: (45) 39 15 7500

Number	Area Name	Period	Number	Area Name	Period
907	Nunap Isuata Kitaa	Year round	911	Attu	Year round
908	Nuuarsuit	Year round	912	Uiffaq	Year round
909	Narsalik	Year round	913	Qimusseriarsuaq	Year round
910	Meqqitsoq	Year round	914	Kiatak	Year round

Table 5-34 - Marine Weather Observations - Manned Station Reports

Area Name	Area Name	Area Name
Alkalik	Gjoa Haven	Lake Winnipeg: Berens River
Cape Dorset	Hall Beach	Norman Wells
Churchill	Hay River	Resolute Bay
Coral Harbour	Inuvik	Sachs Harbour
Fort MacPherson	Iqaluit	Tuktoyaktuk
Fort Resolution	Kugluktuk	Yellowknife

Table 5-35 - Marine Weather Observations - Automatic Reports

Area Name
Inner Whale Back Island auto-station
Egg Island auto-station (Lake Athabasca)
Regent: Fort Ross
West Baffin (northern half): Cape Liverpool
McClintock: Gateshead Island
Lake Winnipeg: Gimli
Lake Winnipeg: Grand Rapids
Lake Winnipeg: George Island
Lake Winnipeg: Norway House
Lake Winnipeg: Victoria Beach
Lake Manitoba: Oak Point

Table 5-36 - Marine Weather Observations - Buoy Reports

Area Name
Great Slave Lake Buoy #45141
Great Slave Lake Buoy #45150
Tuktoyaktuk #48021
Lake Winnipeg Narrows Buoy #45145
Lake Winnipeg Buoy #45140 (South Basin)
Lake Winnipeg Buoy #45144 (North Basin)

5.9.5 Marine Forecast Service to METAREAs XVII, XVIII, and Northwestern Sections of METAREA IV (Hudson Bay and Approaches)

Environment Canada's METAREAs Forecast Program provides marine forecast service to METAREAs XVII, XVIII, and northwestern sections of METAREA IV during the northern and Arctic shipping season.

The geographical boundaries of METAREA XVII are as follows: from 67°N 168° 58'W to 90°N to 67°N 120°W then back to 67°N 168° 58'W.

The geographical boundaries of METAREA XVIII are as follows: from 67°N 120°W to 90°N to 67°N 035°W then back to 67°N 120°W.

Forecast service to waters comprising northwestern sections of METAREA IV including Hudson Bay and Approaches covers all sea-areas that lay within the geographical region bounded by 67°N to the north, 071°W to the east, 51°N to the south, and 095°W to the west.

Marine Forecast service to these METAREAs is tailored to ensure compliance with the relevant standards for this type of service within the framework of the Global Maritime Distress and Safety System (GMDSS). Meteorological Maritime Safety Information (met MSI) consisting of marine weather warnings and forecasts, wave height forecasts, and sea-ice conditions for waters within these METAREAs is regularly issued twice-daily and updated as required – see maps:

Figure 5-3 - Marine Forecast Areas: METAREAs XVII and XVIII

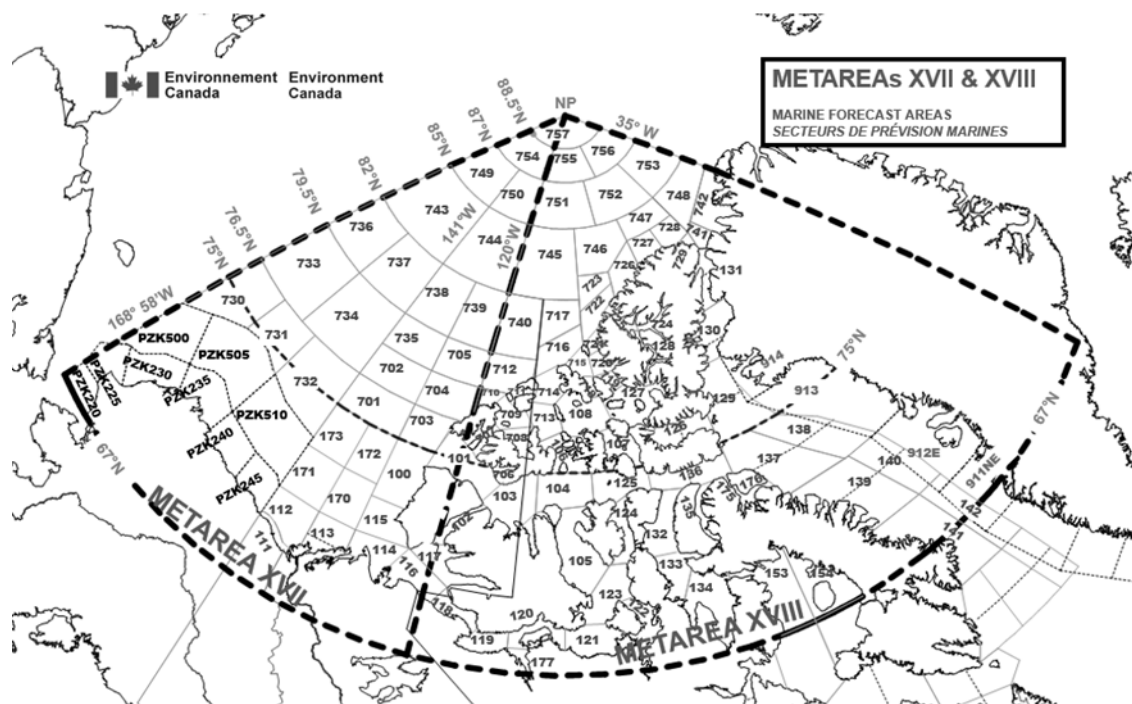
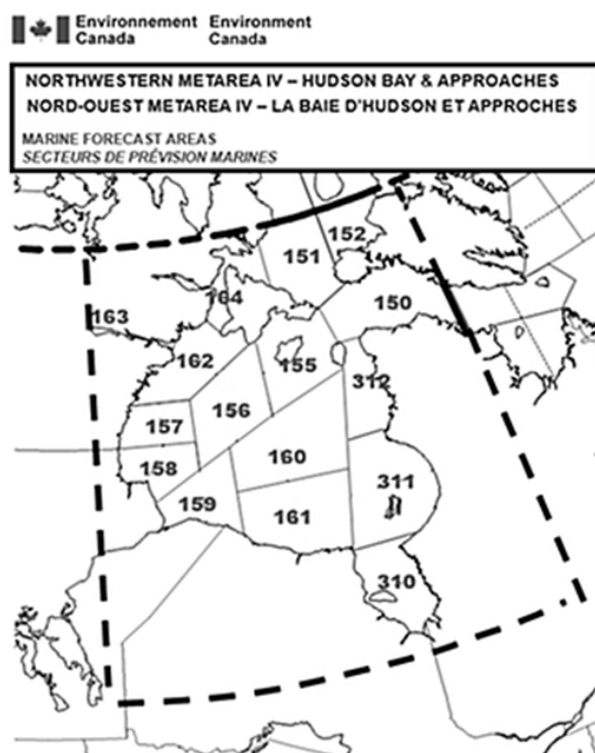


Figure 5-4 - Marine Forecast Areas: Northwestern METAREA IV



5.9.6 Serviced Forecast Zones

Environment Canada currently provides marine weather warnings and forecast, wave height forecasts, and sea-ice conditions, to the following marine zones within METAREAs XVII, XVIII and northwestern sections of METAREA IV:

Table 5-37 - FQCN01 CWA0 - Marine Forecasts and FICN01 CWIS - Ice Bulletin for METAREA XVII North of 75°N

Number	Area Name	Number	Area Name
101	McClure	736	CV1
701	CT4	737	CV2
702	CU4	738	CV3
703	South Prince Patrick	739	CV4
704	Prince Patrick	743	CW1
705	North Prince Patrick	744	CW2
730	CT1	749	CX1
731	CT2	750	CX2
732	CT3	754	CY1
733	CU1	757	CZ1
734	CU2		
735	CU3		

Table 5-38 - FQCN02 CWA0 - Marine Forecasts and FICN02 CWIS - Ice Bulletin for METAREA XVII South of 75°N

Number	Area Name	Number	Area Name
100	Prince Alfred	117	Holman
101	McClure	170	North Tuktoyaktuk
111	Yukon Coast	171	North MacKenzie
112	MacKenzie	172	West Prince Alfred
113	Tuktoyaktuk	173	Northwest Beaufort
114	Baillie	730	CT1
115	Banks	731	CT2
116	Amundsen	732	CT3

Table 5-39 - FQCN03 CWA0 - Marine Forecasts and FICN03 CWIS - Ice Bulletin for METAREA XVIII North of 75°N

Number	Area Name	Number	Area Name
101	McClure	720	South Sverdrup
106	Byam	721	North Sverdrup
107	Queens	722	South Axel Heiberg
108	MacLean	723	Axel Heiberg
126	Jones	724	Greely
127	Norwegian	725	Nansen

Number	Area Name	Number	Area Name
128	Eureka	726	Ellesmere
129	Clarence	727	Ward Hunt
130	Kane	728	Bartlett
131	Robeson	729	Alert
707	Fitzwilliam	740	CV5
708	Griper	741	CV6
709	Ballantyne	742	CV7
710	Brock	745	CW3
711	Wilkins	746	CW4
712	Borden	747	CW5
713	Hazen	748	CW6
714	Gustaf	751	CX3
715	Peary	752	CX4
716	South Ellef Ringnes	753	CX5
717	Ellef Ringnes	755	CY2
718	Hassel	756	CY3
719	Massey	757	CZ1

Table 5-40 - FQCN04 CWA0 - Marine Forecasts and FICN04 CWIS - Ice Bulletin for METAREA XVIII South of 75°N

Number	Area Name	Number	Area Name
101	McClure	133	Boothia
102	Prince of Wales	134	Committee
103	Melville	135	Admiralty
104	Rae	136	Lancaster
105	McClintock	137	West Baffin
116	Amundsen	138	East Baffin
117	Holman	139	West Clyde
118	Dolphin	140	East Clyde
119	Coronation	141	West Davis
120	Dease	142	East Davis
121	Maud	153	Igloodik
122	St. Roch	154	Prince Charles
123	Larsen	175	Navy Board
124	Peel	176	Pond
125	Barrow	177	Bathurst
132	Regent	706	Liddon

Table 5-41 - FQCN05 CWA0 - Marine Forecasts and FICN05 CWIS - Ice Bulletin for Northwestern Sections of METAREA IV including Hudson Bay and Approaches

Number	Area Name	Number	Area Name
150	Nottingham	160	South-Central Hudson
151	West Foxe	161	South Hudson
152	East Foxe	162	Rankin
155	Coats	163	Baker
156	Central	164	Roes Welcome
157	Arviat	310	James Bay
158	Churchill	311	Belcher
159	York	312	Puvirnituq

Forecast service to U.S. waters within METAREA XVII is provided by the National Weather Service. Forecast service to Greenlandic waters within METAREA XVIII is provided by the *Danish Meteorological Institute*. Further information may be obtained by contacting these agencies directly.

Detailed information regarding the geographic locations and boundaries associated with the METAREAs forecast zones may be obtained by contacting the Meteorological Service of Canada at the following:

Telephone: 709-256-6612
 Facsimile: 709-256-6627
 Email: metareas17.18@canada.ca

Additional information may be obtained by consulting the Joint Commission on Oceanography and Marine Meteorology (JCOMM) web site at <http://weather.gmdss.org> or by consulting the Canadian Coast Guard notices to mariners (NOTMAR) web site at <http://notmar.gc.ca>.

5.9.7 METAREAs Forecast Transmission

During the navigation season, met MSI for sections of METAREA XVII and XVIII south of 75°N, and northwestern sections of METAREA IV, is broadcast via Inmarsat-C SafetyNET over Inmarsat's Pacific Ocean Region (POR) or Atlantic Ocean Region-West (AOR-W) satellite network. Scheduled broadcast times are:

METAREA XVII (POR) at 03:00 UTC and 15:00 UTC daily.

METAREA XVIII (AOR-W) at 03:00 UTC and 15:00 UTC daily.

Northwestern METAREA IV (AOR-W) at 03:00 UTC and 15:00 UTC daily.

Met MSI for METAREAs XVII and XVIII will be transmitted using rectangular addressed messaging that encompasses waters comprising these two METAREAs until Inmarsat-C receivers or Mini-C terminals operating in Arctic waters have been updated to recognize the SafetyNET address code $C_3 = 17$ and 18 for METAREAs XVII and XVIII respectively. Users should note that meteorological MSI received by their sat-C terminals may be labeled as navigational MSI.

Met MSI for the northwestern sections of METAREA IV is transmitted using rectangular addressed messaging that encompasses waters comprising Hudson Bay and Approaches. The SafetyNET address code for this rectangular area is $C_3 = 50n098w18030$. Thus only those Inmarsat-C receivers aboard vessels navigating within the boundaries defined by this rectangular area will print out met MSI for the northwestern sections of METAREA IV.

During the navigation season met MSI for sections of METAREA XVII and XVIII north of 70° N is broadcast via High Frequency Narrow Band Direct Printing (HF NBDP) on 8416.5 kHz from the Canadian Coast Guard Marine Communications and Traffic Services (MCTS) Centre in Iqaluit NU. Scheduled broadcast times are 03:30 UTC and 15:30 UTC daily. Mariners should note that actual HF service provision dates will be announced by Canadian Coast Guard Notice to Shipping.

Mariners navigating northern or Arctic waters may also obtain METAREAs forecast bulletin via internet by accessing Environment Canada's Datamart web page. However, users are cautioned that the internet is not part of the GMDSS MSI dissemination system and should never be relied upon as the only means to obtain the latest marine forecast and warning information. Access to the internet may be interrupted from time to time, or updates may be delayed. Mariners are advised to refer to the appropriate GMDSS-approved marine communication systems such as Inmarsat-C SafetyNET, HF NBDP, or international NAVTEX for the latest information. When accessing Environment Canada's Datamart web page please ensure the page you are viewing is updated and not from your web browser's cache. If in doubt, use your web browser's Refresh or Reload button to update the web page.

Internet link to the FQCN01 CWAQ forecast for METAREA XVII north of 75°N:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FQ&issuer=CWAQ&location=CN01

Internet link to the FICN01 CWIS ice bulletin for METAREA XVII north of 75°N:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FI&issuer=CWIS&location=CN01

Internet link to the FQCN02 CWAQ forecast for METAREA XVII south of 75°N:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FQ&issuer=CWAQ&location=CN02

Internet link to the FICN02 CWIS ice bulletin for METAREA XVII south of 75°N:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FI&issuer=CWIS&location=CN02

Internet link to the FQCN03 CWAQ forecast for METAREA XVIII north of 75°N:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FQ&issuer=CWAQ&location=CN03

Internet link to the FICN03 CWIS ice bulletin for METAREA XVIII north of 75°N:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FI&issuer=CWIS&location=CN03

Internet link to the FQCN04 CWAQ forecast for METAREA XVIII south of 75°N:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FQ&issuer=CWAQ&location=CN04

Internet link to the FICN04 CWIS ice bulletin for METAREA XVIII south of 75°N:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FI&issuer=CWIS&location=CN04

Internet link to the FQCN05 CWAQ forecast for northwestern sections of METAREA IV:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FQ&issuer=CWAQ&location=CN05

Internet link to the FICN05 CWIS ice bulletin for northwestern sections of METAREA IV:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FI&issuer=CWIS&location=CN05

Internet link to the FICN07 CWIS ice bulletin for Greenlandic waters within METAREA XVIII:

http://dd.weather.gc.ca/cgi-bin/bulletin_search.pl?product=FI&issuer=CWIS&location=CN07

5.10 CANADIAN ICE SERVICE (CIS)

5.10.1 Ice Forecasts

Ice forecasts are produced where there is marine activity. The intent is to advise users of ice conditions including warnings that are in effect or that could develop during the day, the evening and the following day, in marine areas. Forecasts also provide a point by point description of the ice edge.

The iceberg bulletin is produced once a day. The purpose is to convey routine, general information on the iceberg distribution off the Canadian East Coast. The bulletin provides the estimated limit of all known icebergs and a general description of the number of icebergs for each marine area.

Table 5-42 - Production Schedule - Ice Bulletins Text Format

Forecast Name	Issue Time	Time Zone	Marine Region
Iceberg bulletin	11:00	EDT / EST	East Coast Waters
Ice forecasts	10:00	EDT / EST	Western and Central Arctic
	11:00	EDT / EST	Hudson and Foxe
	11:00	EDT / EST	Eastern and Northern Arctic
	10:00	EDT / EST	Gulf of St. Lawrence
	10:00	EDT / EST	East Newfoundland and Labrador waters
	12:00	EDT / EST	Great Lakes

Table 5-43 - Production Schedule - NAVTEX Format (refer to PART 2 for the MCTS broadcast schedule)

MCTS Centre	NAVTEX Transmitter	Header	Issue Time
Placentia / VCP	Robin Hood Bay	FICN33 CWIS	17:50 (W), 21:50 (S) UTC
Sydney / VCO	Chebogue	FICN34 CWIS	22:10 UTC
Labrador / VOK	Cartwright	FICN35 CWIS	23:20 UTC
Iqaluit / VFF	Iqaluit	*FICN36 CWIS	07:00, 19:00 UTC
Prescott / VBR	Ferndale	FICN38 CWIS	00:40, 12:40 UTC
Sarnia / VBE	Pass Lake	FICN39 CWIS	06:00, 18:00 UTC

** Ice NAVTEX FICN36 is being broadcast from Iqaluit MCTS since November 20, 2013.*

Table 5-44 - Ice Warning Criteria

	Warning Name	Warning Criteria
1	Ice Pressure warning	Reported or forecast strong ice pressure.
2	Rapid Closing of Coastal Leads Warning	Rapid closing of coastal leads is expected to occur. Leads are corridors of mainly ice-free water surrounded by pack ice.
3	Special Ice Warning	When one tenth or more of grey-white ice or older is expected to move into areas when that ice is not normally present, or for any unusual or significant ice event that may present a hazard to navigation.

5.10.2 Ice Program

Ice forecasts are issued for daily, monthly and seasonal time scales.

5.10.3 Ice Reports or Observations

Ice reports from ships or aircraft are normally relayed through MCTS Centres for broadcast. These reports are all assimilated in the daily ice charts produced by CIS.

5.10.4 Ice Charts

Current ice charts are produced daily. The area covered by the chart depends on the time of season and these charts are normally broadcast at times specified in tables below.

Once a week, CIS produces Regional ice charts. These charts are intended to be used as a planning tool rather than a tactical support tool and are available on the CIS Website at <http://www.ice-glaces.ec.gc.ca/> and through commercial communication lines. They are not broadcast through MCTS Centres.

5.10.5 Weatheradio Canada

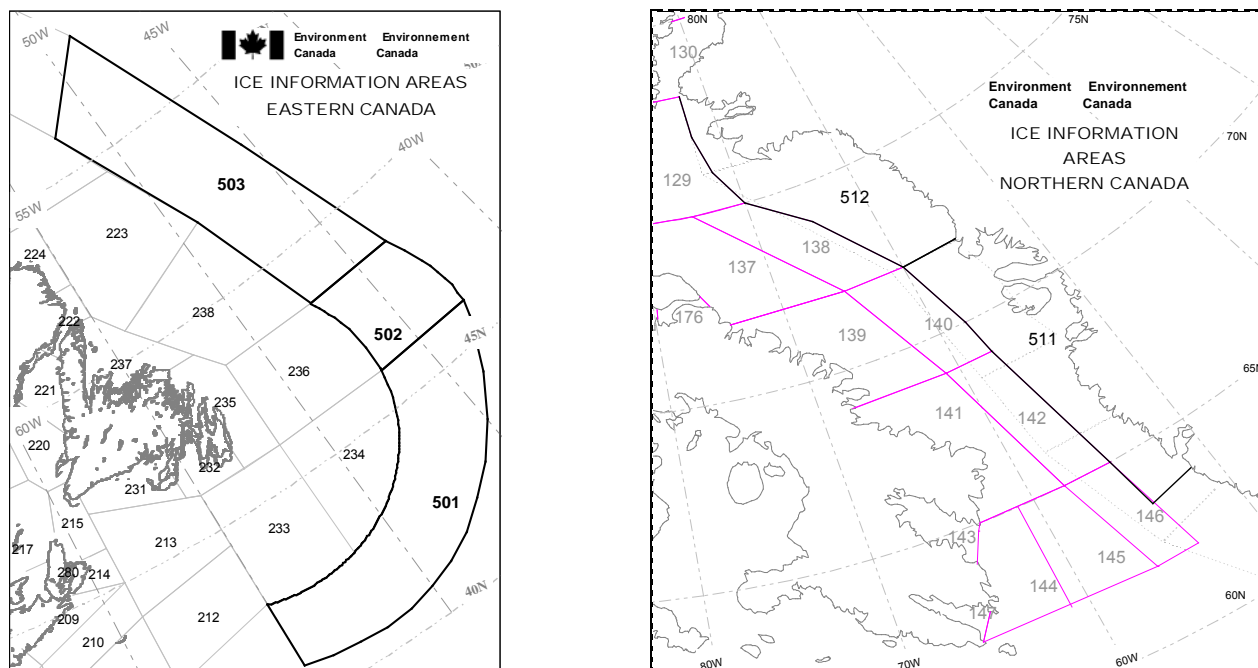
Ice forecasts and warnings are not broadcast via Weatheradio; however, mariners planning operations in waters impacted by hazardous ice conditions may obtain details regarding ice conditions by consulting the CIS website at <http://www.ice-glaces.ec.gc.ca/> or by contacting their regional MCTS Centre. Detailed ice information may also be obtained through consultation with an Environment Canada meteorologist using the "Weather One-on-One" '1 900' service at 1-900-565-5555. For cell phone users and credit card billing call 1-888-292-2222. User fees apply.

5.10.6 Ice Areas

Areas for which ice forecasts apply are identical to the marine forecasts area. In addition to these, ice forecasts will cover Lake Michigan, and the U.S. portion of the Great Lakes, and may cover 3 areas along the East Coast (501 to 503).

- 501 Tail of the Grand Banks
- 502 Flemish
- 503 Southeast Labrador Sea
- 541 Lake Michigan

Figure 5-5 - Ice Information Areas: Eastern and Northern Canada



5.10.7 Ice Charts

http://www.ec.gc.ca/glaces-ice/default.asp?lang=En&n=B6C654BB-1#daily_ice

The following list describes ice charts produced to support marine activities which are available for broadcast. All available charts can be transmitted or re-transmitted on request. MCTS broadcast times are found in PART 2.

Table 5-45 - Ice Charts Listing

Ice Charts	Broadcast Site	Season
Iceberg limit	Sydney MCTS	Year round
Gulf of St. Lawrence	Sydney MCTS	Winter
Cabot Strait	Sydney MCTS	Winter
Northeast or East Newfoundland Waters	Sydney MCTS	Winter
Southeast Newfoundland Waters	Sydney MCTS	Winter
Newfoundland Coast	Sydney MCTS	Winter
Labrador Coast	Iqaluit MCTS	Summer
Hudson Strait	Iqaluit MCTS	Summer
Northern Hudson Bay	Iqaluit MCTS	Summer
Southern Hudson Bay	Iqaluit MCTS	Summer
Foxe Basin	Iqaluit MCTS	Summer
Davis Strait	Iqaluit MCTS	Summer
Baffin Bay	Iqaluit (Resolute) MCTS	Summer
Approaches to Resolute	Iqaluit (Resolute) MCTS	Summer
Queen Maud	Iqaluit (Resolute) MCTS	Summer

Ice Charts	Broadcast Site	Season
Amundsen Gulf	Iqaluit MCTS	Summer
Alaskan Coast	Iqaluit MCTS	Summer
Eureka	Iqaluit (Resolute) MCTS	*On request
Parry Channel	Iqaluit (Resolute) MCTS	*On request
M'Clure Strait	Iqaluit (Resolute) MCTS	*On request
Byam - Resolute	Iqaluit (Resolute) MCTS	*On request
Bering Strait	Iqaluit MCTS	*On request
Chukchi	Iqaluit MCTS	*On request
Nunivak	Iqaluit MCTS	*On request
Canada Bassin	Iqaluit MCTS	*On request
Alert	Iqaluit MCTS	*On request
Nome	Iqaluit MCTS	*On request
Arctic Ocean	Iqaluit MCTS	*On request
North Pole	Iqaluit MCTS	*On request

**On request: Ice charts for Canadian Waters available upon request to MCTS with at least 5-day prior notice.*

METOC Halifax (CFH): The Canadian Forces Fleet MetOc Broadcast service (radioteletype and radiofacsimile) was placed in abeyance effective September 2, 2010. The Canadian Forces Fleet MetOc Broadcast may be reinstated and ceased without warning as necessitated by military operational requirements. When notified, MCTS will issue a Notice to Shipping concerning reinstatement or cessation of this service. Broadcasts intended for North Atlantic waters North of 35N and West of 35W. Radiofacsimile transmission commences with a 30 second break followed by a 30 second signal.

Table 5-46 - Canadian Coast Guard and Canadian Forces Fleet MetOc Radio Facsimile Stations

Name	Call Sign	Modulation	Index of cooperation	Power	Frequencies (kHz)	Drum Speed
Iqaluit MCTS	VFF	J3C (FM)	576	1 KW	3251.1, 7708.1 (USB)	120 RPM
METOC Halifax	CFH	J3C (FM)	576	6 KW	4271, 6496.4, 10536, 13510	120 RPM
METOC Halifax	CFH	J3C (FM)	576	10 KW	122.5	
Sydney MCTS	VCO	J3C (FM)	576	5 KW	4416, 6915.1	120 RPM

For correct reception of this broadcast on WMO standard facsimile recorders requiring 2300 Hz for White and 1500 Hz for Black, 1900 Hz centre frequency, radio receivers should be tuned in the UPPER SIDEBAND MODE or USB: add 1.9 to the indicated USB frequencies for FSK frequencies.

5.10.8 Facsimile Broadcast

Upon authorized request from Canadian Coast Guard, C-GCFR can transmit observed conditions via satellite fax. Vessels must make a request through the Canadian Coast Guard to receive it.