



4

ELECTRONIC COMMUNICATION & RECORD KEEPING

The CCGA vessel is one part of a response system. Professional communications are the most important component of an organised response in Search and Rescue. Communicating well is a skill that one never stops developing. Each member should focus on improving their skills throughout their training and contributing to the overall professionalism of the vessel.

ELECTRONIC COMMUNICATION AND RECORD KEEPING

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A Fisheries Patrol vessel is moving in the fog towards one of the deadliest narrows on the West Coast, Seymour Narrows.

The navigation officer identifies a tug and barge on the radar screen entering the narrows from the north.

“Southbound tug and barge entering Seymour Narrows, this is the Fisheries Patrol vessel Felix on channel 16 VHF.”

“Fisheries Vessel Felix, this is the Haida Dolphin go ahead, switch to working channel.”

“Haida Dolphin, this is the Felix, I have to stay close to the point so shall we pass red to red?”

“Fisheries vessel Felix that sounds fine. See you in the narrows.”

The lookout on the Felix spots the tug and barge coming out of the fog and reports “Haida Dolphin turning to starboard.” The Felix hugged the starboard side of the channel and the two ships passed red light to red light.

As the tug’s bow passes the lookout shouts excitedly “That’s not the Haida Dolphin. That’s the Island Monarch!” “Where is the Haida Dolphin?” the navigation officer shouts as another tug and barge enter the narrows on the radar screen.

The reality of the officer’s mistake made his heart pound with fear even though the stranger had passed without event. The approaching Haida Dolphin also turned to starboard and slipped by red to red.

4.0 Introduction

The VHF radio is your unit's voice in times of action. It is this voice that is recorded, logged, reviewed and assessed every time the vessel is tasked or responds. Other units, the Rescue Centre, pleasure boaters, and Coast Guard Radio are all paying very close attention to those words you transmit over the radio. This is the reason why constant practise and diligence is required when using the VHF. The world is listening.



4.1 Radio Watch & Log Keeping

A Radio Watch will be held at all times when a CCGA vessel is underway. Each crewmember shall know the all of the duties involved when keeping a radio watch. The radio watch position is in many incidents the most important position on the vessel, for only through effective communication with other vessels can the Search and Rescue Unit function in the roles of searching and rescue operations. The duties of the Radio Watch are as follows:

- ➔ Notifying the coxswain if over hearing PAN, PAN, sécurité, or a relevant broadcast / radio traffic
- ➔ Logging all communication relevant to the vessel or the mission
- ➔ Answering and communicating all vessel business
- ➔ Relaying messages and instructions to vessel coxswain/captain and crew
- ➔ Sending a regular SITREP to JRCC via Coast Guard Radio.



4.1.1 Duties and Responsibilities

- ➔ Testing all communication systems prior to departure
- ➔ Keeping weather reports and tidal information ready for reference
- ➔ Activating and setting up the radio/radios for monitoring of the distress channel as well as any working channels
- ➔ Trouble shooting in the event of electronic failure or mechanical breakdown
- ➔ Regularly checking and testing the volume level
- ➔ Maintaining, inspecting and activating any electronic signalling devices (DSC, DMB or EPIRB).
- ➔ Keeping spare batteries for hand-held radios, pager and cell phones
- ➔ Keeping cell phones and pagers fully charged accessible and close enough to hear them
- ➔ Keeping and recording weather reports and tide information on board
- ➔ Listening to all designated channels especially VHF 16 for signs or signals of distress
- ➔ On hearing a distress signal or the spoken words MAYDAY, slow or stop the vessel, record time and all details, and if no other response, answer

4.1.2 Log Keeping

Canadian Coast Guard Auxiliary standing orders require all auxiliary vessels to maintain a vessel log. The log is a legal document that can be called into "inquiries and courts of law." It must be completed in pen, pages are continuous (not torn out or removed), entries are legible, any errors are corrected by drawing a single line through the error and the log keepers initials beside the error. A running log may be kept on the vessel by using waterproof notepads or plastic slate and grease pencil and transcribed to a station log when back at base.

Following are log item entries required in your units radio log.

Normal deck entries are to include:

- ➔ Vessel's name
- ➔ Names of coxswain/captain, crew and passengers
- ➔ Times of departure and arrival
- ➔ Weather
- ➔ Time the vessel passed navigational landmarks
- ➔ Any problems with the vessel, damage to the vessel or props

Note:

Most radio logs and deck logs are combined

- Any abnormal activities sighted, (oil slicks, illegal activity etc) reported to CGRS or JRCC.
- All distress, urgency signals received.
- All distress/urgency signals exchanged by your station
- All communications sent/received by your station.
- Any strange signals or circumstances monitored

In addition, entries bear the time of the entry and should include the frequency/channel.

Key to abbreviations commonly used

↑	Abeam	a point on the side of the line
16/04A	–	VHF Channels monitored 04A means 04 Alpha or US/CAN mode
A/C		Aircraft
Adv		Advise
Alongsd		Along side
Ch 16		The channel used for communicating this message
B/D		Broken Down
Descriptn:		Description of vessel/person
DF		Direction Finding
DMB		Datum Marker Buoy
F/G		Fibre Glass
F/V		Fishing Vessel
Ft.		Foot
GMB		General Marine Broadcast
GRT		Gross Registered Tonnage
I/O		inboard out board
L/B		Life Boat
LOC		Location
M/V		Motor Vessel
MOB		Man Over Board
NM		Nautical Miles
O/B		Out Board
O/D		Over due
P/C		Pleasure
Pgd		Paged
PIW		Person in the Water
POB		Persons on Board
POS		Position
JRCC		Joint Rescue Coordination Centre
RTB		Return to Base
S/V		Sailing Vessel

Normal method of abbreviating:
Drop vowels. Shorten words.
(ie. dep for depart etc.)

SITREP	Situation Report
Std	Dn Stood Down
Super/Wlhse	Super structure and Wheelhouse
TOW	Taking on Water
V/L	Vessel
VAC	Station designation (different for every MCTS centre)
VTS	Vessel Traffic System
WX	Weather

4.1.3 Vessel Log Keeper

The written log officially represents all of your vessel's actions and deeds. As a crewmember it may be your duty to write down everything that happens. As one Coast Guard captain told his third officer, "Mate, if it is not written in the log, it did not happen, and that includes your overtime pay."

A vessel log is to be maintained for normal activities and especially during SAR operations to be able to determine times and events. All information recorded must be legible and accurate. Larger vessels may have printed logbooks that are always kept on the vessel, but this may prove to be difficult for units utilising small open boats in their units.

Additional information that is required during a SAR incident may include all or any of the following:

- Time tasked by JRCC or CGRS
- Time of departure for incident
- Time and brief content of SAR Communications with JRCC or CGRS
- Last known position of search object
- ETA on scene
- Actual time of arrival on-scene
- Description of search objects
- Type of search pattern and areas searched
- On scene weather
- Tide and current
- Information on the distressed vessel
- Name and address of owner/operator
- Number of persons on board (POB)
- Vessel license and registration number (V/LLic#)
- Type of assistance to the vessel or persons
- Distance towed
- Time of stand down
- Time of return to base or resume normal operation
- JRCC incident number

TIME	Log of Unit 35	COMS	Crew:
			Annik Baker Charles
0810	Pged code 3 by JRCC M/V Token taking on water 2NM south of Stains Point. Descriptn 84ft. wood tug black hull white super red funnel. 3 POB.		Pgr
0823	Unit 35 departs advises Victoria CG Radio ETA 20 Minutes		04A/16
0828	USCG helicopter G2965 ETA 18 mins		Chn 22A
0835	Overhear MAYDAY on Channel 16 Token is carrying 3 feet water in her bilge all POB OK		16
0838	Advise VAK/JRCC M/V Token in sight		04A
0841	Unit 35 on scene alngsd SAP done Adv VAK/JRCC Token listing to starboard but looks stable to board. JRCC advises "do not go below decks" Switch to 22A working channel		04A
0845	Adv VAK/JRCC Two 35 crewmembers on board rigging pump		22A
0846	M/V YG151 Can Navy vessel ETA 45 mins		22A
0846	USCG helicopter G2965 Arrives on scene drops Skad pump		22A
0847	Unit 35 pump running and all POB with lifejackets and ready to move		
0853	Unit 35 gets Skad Pump running Adv VAK/JRCC		22A
0858	Adv VAK/JRCC pumps are not keeping up and vessel is in danger of sinking		
0905	Adv VAK/JRCC All crew and POB taken off of Token two pumps still running		22A
0910	YG151 Can Navy vessel arrives and JRCC advises to stay clear of vessel		22A
0913	Adv VAK/JRCC M/V Token rolls and sinks position N 48 21.55' W 123 18.34' Depth 104 metres of water all persons safe and accounted		22A
0920	Advs VAK/JRCC small slick on the water WX: SS 4ft. chop, Wind 20 kt. sw, Vis 10+ Log continues...		22A

Note: The names and places have been changed in this incident.

Example of vessel information recorded

1535 S/V "Bounty"
 Owner: Her majesty the Queen of England
 Operator : William Bligh
 12 Whalen Way
 New South Wales
 Australia W2Z X6Y
 Phone 011 234 4567
 Operator does not have operator competency card
 Passengers : Fletcher Christian, Seaman Adams
 Vessel Specs:
 142 ft LOA Three masted Barqenteen wood hull with
 doilies and girl under bowsprit
 Gold trim , two super structure cabins on deck
 Built 1784 (no engine)
 Registration # 666 0001234 Portsmouth England
 Vessel in rough condition (wood rot and broken rigging)
 Note: Vessels destination Island of Tonga, Off course
 Plank rigged over the side Obvious tension in crew
 demeanour, Captain abrupt and hostile
 No Radio No Charts
 14ft dinghy wood (no engine)

1550 WX: sea state calm, wind 15kts nw, sky partly cloudy

1600 Bounty Taken in tow will tow to Lund Harbour

As can be seen, this type of log keeping (accepted practice) would require some explanation of the abbreviations; an alternative is to write in a more lengthy style.

4.2 VHF Communication System

The VHF radio coverage on Canadian waters is achieved through many strategically placed Marine Communications and Traffic Services (MCTS) Centres. These facilities control remote peripheral radio sites, which increase the area of radio coverage in their assigned area of responsibility. The primary role of these centres is the detection of radio transmitted distress calls, and the subsequent co-ordination of communications between the distressed vessel, the SAR response, and the Joint Rescue Co-ordination Centre.

MCTS Centres also provide information to larger vessels to ensure safety of navigation. Radar coverage is provided in most major shipping channels which allows MCTS to provide radar target information to JRCC and the SRU when required.

Industry Canada designates VHF channels for specific uses or users. Awareness of these channel designations can be used to expedite the SAR process. A search unit may contact vessels on those channels to make enquiries for information, and/or solicit assistance. The vessels listening on these channels often have expert knowledge of the area (tidal currents, drifts, hazards etc.).

Waters under federal responsibility include the east and west coasts, the St. Lawrence River, all the Great Lakes and the Arctic region. If you want to report a marine incident in these waters by telephone the best way is to directly call the nearest Joint Rescue Co-ordination Centre (JRCC) or Maritime Rescue Sub-Centre (MRSC). Every rescue centre has a toll-free number and can be reached by regular or cellular phone.

In addition, for marine emergencies only, MCTS can be reached by cellular phone by dialling *16.

4.2.1 Canadian Joint Rescue Centres

JRCC Victoria, British Columbia
 Toll-free number: 1-800-567-5111

JRCC Halifax, Nova Scotia
 Toll-free number: 1-800-565-1582

JRCC Trenton, Ontario
 Toll-free number: 1-800-267-7270

MRSC Quebec City, Quebec
 Toll-free number: 1-800-463-4393

MRSC St. John's Newfoundland & Labrador
 Toll-free number: 1-800-563-2444

4.2.2 Radio Operators Certificate (ROC)

An ROC can be obtained by taking the Canadian Power and Sail Squadron's (CPSS) Marine Radio Telephone Course (VHF). The course is offered via their manual "The Radio Talk Seminar" and is available through Power Squadron. The examination process is through CPSS or through a certified examiner. Most independent examiners will have access to the study material as well.

4.3 Operating the VHF



4.3.1 Basic controls on VHF radios include

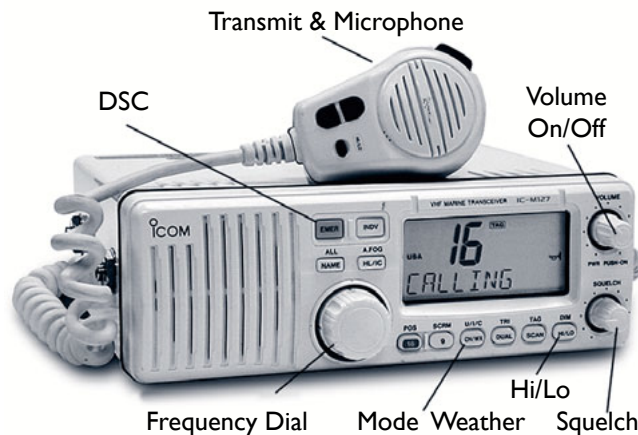
- ➔ on/off,
- ➔ volume,
- ➔ squelch,
- ➔ channel or frequency selection
- ➔ mode
- ➔ hi/low

Every piece of electronic equipment is different and it is imperative that each crewmember has access to the operating instructions and has ample opportunity to become familiar with the electronics on board.

Every piece of electronic equipment is different and it is imperative that each crewmember has access to the operating instructions and has ample opportunity to become familiar with the electronics on-board. You should start with the radio or radios. Crewmember problems with the radio are at best embarrassing, and at worst may render your vessel ineffective in a search or even prevent a distress signal from being sent.

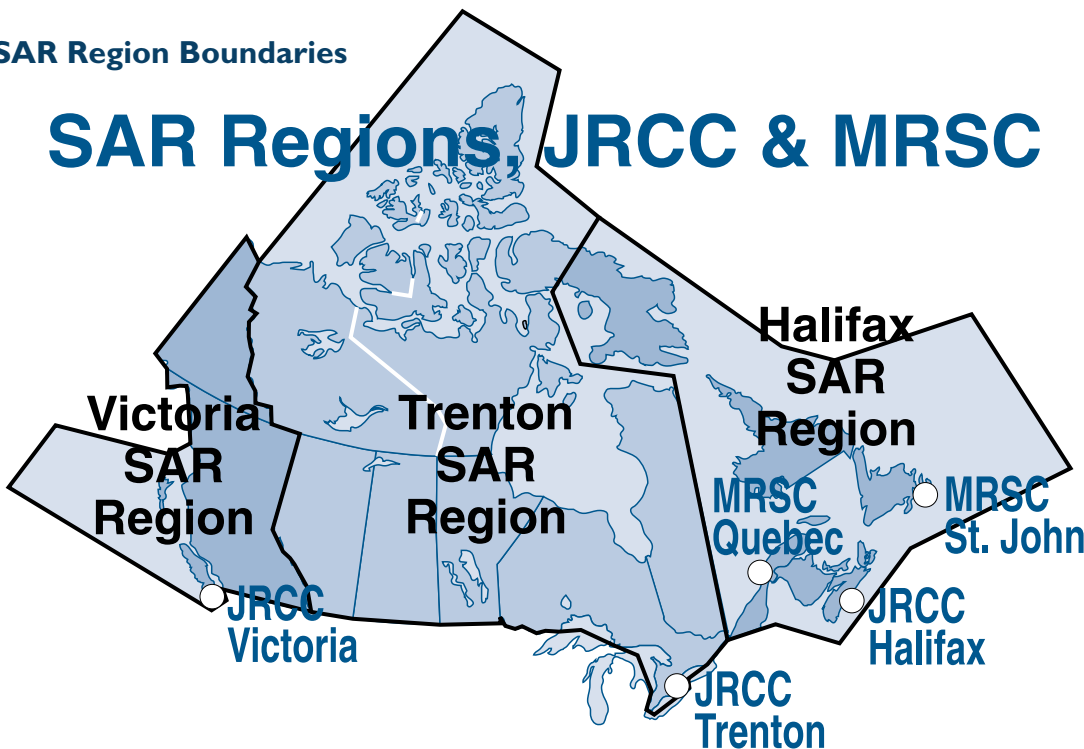
- ➔ Get used to using the basic controls. You will have to adjust and set them in the dark and in rough seas.
- ➔ Some concerns to address when familiarising yourself with the radio are as follows. Can you adjust the controls with your gloves on or do you need to take them off?

Is the microphone waterproof or will it short out and transmit a constant signal if wet? Does the radio switch back to Channel 16 on its own?



SAR Region Boundaries

SAR Regions, JRCC & MRSC





On/off and volume

(see manufacturers instructions)



Squelch

Adjusts the receiver sensitivity and limits unwanted radio noise. It also opens the receiver circuit, resulting in a “rushing noise.” The squelch should be adjusted to make this noise, then backed off to the point where the noise quits. If the circuit “breaks” occasionally, readjust the squelch. As you leave “noisy” radio areas (such as a harbour), the squelch should be periodically adjusted. Too high a squelch setting will result in weaker signals not being heard.

Channel or Frequency Selection and Mode

Depending on the model, VHF radios may be marked *Intl* (International), *US* or *USA*, and/or *CDA* Canada. Understanding this function can either give you a good day, or give you a bad day. Some channels are **simplex**, others **duplex**. On a simplex channel, the send and receive frequencies are the same. A duplex radio transmits on one frequency, but receives on a different frequency. The Duplex system allows for private conversations and more control by the MCTS Centre. This only concerns ship to shore operations (vessel to a coast station).

Example: Coast Guard Radio ship-shore telephone channel 26. These duplex channel frequencies are indicated as “**A**” side (ship transmit), and “**B**” side (Coast Guard Radio transmit). Channel 26 ship transmits (**A**) 157.300 MHz, and Coast Guard Radio transmits (**B**) 161.900 MHz. Obviously when they communicate, the ship receives the “**B**” side, and the Coast Guard Radio receives the “**A**” side. When your radio is in the International mode, your radio will be set to the international frequency allocation standards. Channels such as **04, 61, 62, 78, 22** are used in other areas as telephone or **duplex** channels.

Note that these channels in Canada are designated as “ALPHA” channels. **04A, 61A, 62A, 78A, 83A**. To operate in the alpha mode, you must switch your radio mode to **CDA** or **US**. This function switch modifies your radio so that the send and receive frequency are the same. Thus, it becomes simplex.

Note: It is wise to keep your radio in the USA/CDA mode at all times, with the following exceptions; to place a ship-shore telephone call, or listen to continuous marine broadcasts on channel 21B. This can also be accessed on WX1, WX2, WX3, or WX4, depending on the area.

Hi / Low

The Hi/Low switch toggles the transmitter power output between high and low. Most marine VHF radios have a high power of 25 watts and a low power of 1-5 watts. The high power output of a handheld radio is usually 5 watts with a low power setting of 1 watt. If you are working close to the station you are calling and you do not wish to broadcast your conversation to the world then low power may be an option. During SAR incidents all transmissions are made on high power.



Other Types of Radios

VHF radios are most common in recreational vessels today yet commercial vessels and some recreational boaters will occasionally use other radio types. These may include:

GRS (General Radio Service)

- Better known as Citizen’s Band (CB)
- Not monitored by MCTS Centres
- Monitored by some service organisations and clubs

MF SSB (Medium Frequency–Single Side Band)

- Not common on pleasure craft
- Common aboard larger commercial and fishing vessels
- Long-range capability

4.3.2 International VHF Radio Procedures

The following includes the accepted procedures and the phonetic alphabet for use with VHF radio, as approved by the International Telecommunication Union (ITU):

- ⇒ Channel 16 is the international calling and distress frequency. Use Channel 16 for initial calling only, never for the passing of messages, with the exception of distress (May Day) traffic.
- ⇒ Always monitor Channel 16 for distress calls.
- ⇒ Always name the station you are calling first and identify yourself second, e.g. “Vancouver Coast Guard Radio this is Auxiliary Vessel Mary Jane, over.”
- ⇒ Never make any transmission without identifying yourself by your vessels name and/or call sign.
- ⇒ Use recognised VHF language. Some of the more common are listed on the next page.



Other Emergency

Frequencies:
2182 Khz
121.5 Mhz

4.3.3 Terms for Use with Marine VHF

OVER	I have concluded this transmission and expect a response
OUT	I have concluded this transmission and do not expect a response
ROGER	Your message has been received and understood
CHANNEL	Switch to channel _____ .
SAY AGAIN	Please repeat (the word “repeat” is not normally used for radio communication)
I SAY AGAIN	Repeat
STANDBY	Please wait on this channel until further notice
ALL AFTER	Used when referring to a specific portion of a message
WORD AFTER	Used when referring to a specific word
ALL BEFORE	Used when referring to a specific portion of a message
WORD BEFORE	Used when referring to a specific word
AFFIRMATIVE	“Yes” or confirms information is correct
NEGATIVE	“No” or confirms information is not correct
THAT IS CORRECT	What you told me is correct
CORRECTION	Change what I just said to you (followed by correct version)
READ BACK	Repeat all of the following message back to me after I have said “over.”
I SPELL	What follows is the phonetic spelling of the previous word or sentence
BREAK	Interrupt a transmission in progress between two stations Separate portions of a message
SEELONCE	Silence has been imposed on this channel for all except distress traffic
SEELONCE FINI	The channel is open for regular use - distress situation is over

4.3.4 Communication Example

“Auxiliary Coast Guard Vessel SALVATION this is Vancouver Coast Guard Radio. Confirm disabled vessel is sinking in position ZERO NINE ZERO degrees magnetic FIVE nautical miles from datum. Over.”

“This is SALVATION. Negative. Disabled vessel’s name is SIN KING. I spell, Sierra India November, SIN. KING, I spell, Kilo India November Golf, KING. I say again, the disabled vessel’s name is SIN KING. She is position ZERO FIVE ZERO degrees magnetic NINE nautical miles from datum and not in distress. Over.”

“This is Vancouver Coast Guard Radio. Roger, understand SIN KING’S position is ZERO FIVE ZERO degrees magnetic NINE nautical miles from datum. Over.”

“This is SALVATION. Affirmative, OUT” or “Salvation OUT”

4.4 Search and Rescue Communications

It’s important for government and auxiliary vessels to maintain effective radio communications with other boats and the nearest Marine Communications and Traffic Services Centre (MCTS). Radio transmissions provide you with safety, weather and navigational information. If you’re working for extended periods in small boats, a radio check-in schedule with your parent unit may be your only safety net.

4.4.1 Calling the Joint Rescue Co-ordination Centre

When using the telephone to communicate with JRCC during a SAR incident, the following points should be remembered:

- Always identify your SAR Unit/Vessel
- With regard to an incident, say that you want to speak to a Marine Controller

JRCC can be contacted by telephone in a number of ways, depending on the caller’s needs. (See phone list near the beginning of this section).

Phonetic Alphabet Letter/Word to use

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

NUMBERS are spoken as normally, remember 0 is always ZERO (not Oh)



4.4.2 JRCC Use of Pagers

The Joint Rescue Co-ordination Centre uses an agency's tone or voice pagers to alert and dispatch SAR personnel from shore. Routinely test your pager

Code	JRCC Pager Codes
0000	Stand Down
1111	Information Only – Call JRCC.
2222	Urgent
3333	Distress
4444	Contact JRCC – The safety of your vessel is in doubt.



4.4.3 Communication Tips

Correct calling procedures and transmitting techniques will ease communication response by the station being called. The standard or routine call consists of the name, call sign, or identification of the station being called spoken not more than 3 times, "this is" and the name, call sign, or identification of the calling station not more than 3 times. On the initial call, twice for each identification should be sufficient.

CCGA units will identify as "Coast Guard Auxiliary and the name or identification of their vessel."

Think "BASS"

Brevity **A**ccuracy **S**peed (speech rate) **S**ecrecy

Be brief, think of the essentials you want to transmit. Ensure the accuracy of your information. Keep your speech rate slow, the receiving station is writing it down. If the information is sensitive, you may want to use a communication system that is more secure (i.e. cellular phone etc).

- ➔ Think before you speak.
- ➔ Key the mike for 1 second prior to speaking.
- ➔ Keep your messages short and to the point.
- ➔ VHF Channel 16 is for distress and calling use only – excessive conversation or any other superfluous use of the system is against the law.
- ➔ Establish a working frequency with your base or someone on shore, and remember that a listening watch must still be maintained before and after communications on channel 16. If the vessel is equipped with two or more radios one should always be set to channel 16, unless otherwise required.
- ➔ Listen to ensure that the channel is clear before you speak.

- ➔ Keep the microphone approximately 1 to 3 inches (25 - 75mm) away from your mouth, and speak in a calm, clear voice. Do not yell
- ➔ Preface the start of a new transmission regarding a distress call with the word MAYDAY. All answers to this transmission do not need this included
- ➔ Never use profane or offensive language – it is illegal
- ➔ Use proper words and expressions, spell difficult words phonetically, speak numbers individually.
- ➔ Do not use excessive "air time." Think "BASS"

4.4.4 Initial Departure Message

Whether leaving for training or departing on a mission. The Coast Guard Auxiliary Vessel should notify the local MCTS Centre. Coast Guard Radio will advise JRCC of your actions. This is an example of typical communications between an Auxiliary vessel and Coast Guard Radio. Notice the repeating of the names in the initial call and the subsequent shortening of the titles as the conversation continues. If reception or clarity is garbled then the stations will go back to repeating the names and messages two or even three times. Each crewmember should listen to marine radio conversation and practice the procedures before operating the radio.

Example: Departure Message

Halifax Coast Guard Radio, Halifax Coast Guard Radio, this is the Coast Guard Auxiliary vessel Challenger; Coast Guard Auxiliary vessel Challenger on channel two seven, OVER.

Auxiliary vessel Challenger, Halifax Coast Guard Radio go ahead.

Halifax Coast Guard Radio, this is Auxiliary vessel Challenger. We are departing Lunenburg for the stricken vessel off Head of StMargaret's Bay, our ETA is 2 hours. Challenger has a total of 4 persons on board. We will listen on channels one six and two seven, will advise on scene. OVER.

Challenger, Halifax Coast Guard, roger your ETA two hours, and four persons on board. Will pass that on to JRCC. OVER.

Halifax Coast Guard Radio, Auxiliary vessel Challenger; Roger OUT.

When calling Coast Guard Radio you should state the channel you are calling on. Coast Guard Radio monitors numerous VHF frequencies, and this allows the station to respond immediately without having to

Be prepared.

Vessels should carry a communications pack

Whenever possible take back-up radios, such as a hand-held VHF or carry a cellular telephone in a waterproof bag. Always ensure that all radios have been checked before you leave. Carry a spare battery or power pack. Know the local radio protocols and dead spots for your area.



guess the channel. It is important that any time your unit proceeds to sea on a SAR response, that your message includes the total number of personnel on board. In the event of loss of communications, or an emergency the SAR system will be aware of your crew compliment. Units should also have a status board at their base, showing the names of all crew who are out on the vessel.

SAR Communications Checklist

If your vessel is asked to respond to a search and rescue incident, this checklist will help you effectively manage the communications demands of the mission. Units are reminded that communications, where possible, are best conducted on the working VHF radio channel, so that all response units and MCTS will have simultaneous access to the information

Initial Contact Phase of the SAR Incident

- Brief Joint Rescue Co-ordination Centre (JRCC) on intentions
- Obtain information
- Other resources responding
- Establish a communications plan

Transit Phase of the SAR Incident

- Advise JRCC that you are underway
- Establish a working frequency or frequencies
- Contact On-Scene-Commander or Co-ordinator Surface Search, give ETA

On-Scene Phase of the SAR Incident

- Inform JRCC after arriving on-scene
- Establish an on-scene radio frequency or frequencies
- SAR Units contacted/ tasking delivered
- Situation Reports received from SAR Units
- Situation Reports delivered to JRCC or On-Scene-Commander

Wrap-up Phase (after receiving Stand Down msg)

- Advise JRCC Units intentions – patrol/return to base
- Advise JRCC when normal operations resumed

Situation Reports (SITREPs)

If you have been tasked to respond to an incident by JRCC it is important to keep them updated on your progress. The SAR Units send SITREPs to JRCC unless a Co-ordinator of Surface Search (CSS) or an

On Scene Commander has been appointed. In that case, all SITREPs should be sent through them.

SITREPs are normally at least every hour, and may be as frequent as 15 minutes. JRCC may indicate their reporting requirements during the initial tasking. SITREPs can be sent via Coast Guard Radio, or direct by telephone, VHF radio or fax.

A normal SITREP will consist of the following information:

- SAR Unit position, course and speed
- ETA on-scene
- Current weather conditions

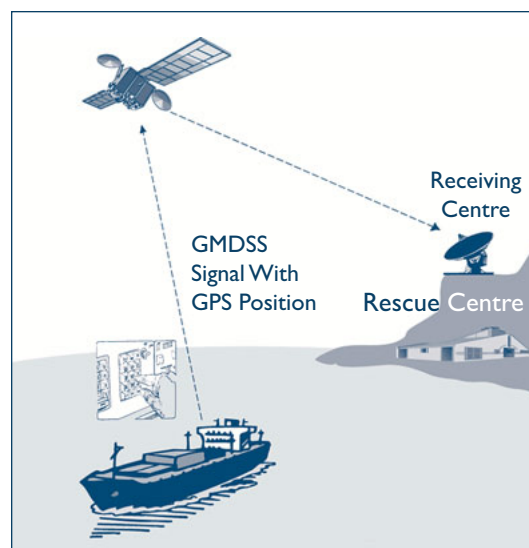
Once a SAR Unit has arrived on-scene, SITREPs will also include:

- Search area covered to date (the CSS would report on the area covered by the entire SAR Unit group)
- Assistance rendered
- Location of datum marker buoy
- Any additional information or requests

4.5 Distress Communications

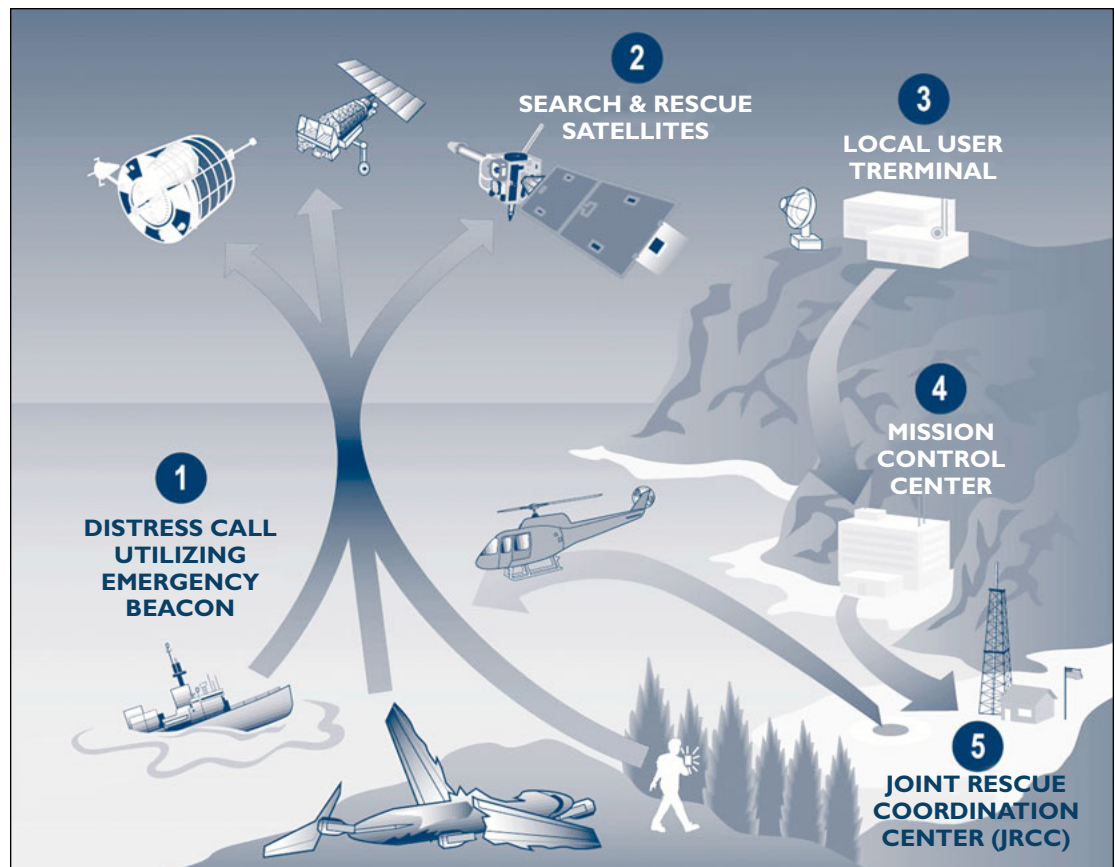
4.5.1 GMDSS (Global Maritime Distress and Safety System)

The GMDSS utilises terrestrial, satellite and shipboard radio systems to ensure rapid alerting of rescue agencies, and vessels in the immediate vicinity, and to provide improved means of locating survivors. The “compliance regulations” came into effect February 1, 1999. Vessels of 300 GT or greater, vessels carrying passengers on international voyages etc., are required to fully fit GMDSS equipment as outlined in their area of operation.



Overview of SARSAT System

1. Vessel in distress signals with EPIRB
2. SAR sats receive signal and get a rough position 3-5km
3. Local user terminal relays message to Mission Control Centre. (Trenton ON)
4. Mission Control Centre relays to local JRCC
5. JRCC coordinates response



The DSC system only works when the DSC Radios have been registered and installed properly, and the radio cannot transmit the vessel's position unless it is hooked up to a GPS receiver.



If you receive a digital selective calling (DSC) distress signal on your VHF, do not electronically acknowledge it. Pushing the acknowledge button will cancel the distress broadcast to all stations.

Most small pleasure craft are excluded from these mandatory fitting regulations, but many are voluntarily fitting some equipment.

The GMDSS system identified specific communication needs for high seas, arctic zones, near shore etc. Thus, as a vessel proceeds further to sea, the higher the need for specific systems. These areas are defined below.

Digital Selective Calling (VHF) Channel 70

On Canada's coasts, VHF DSC implementation was scheduled to begin in 1998 to cover the busiest areas. Full implementation, similar to today's VHF coverage, is planned for 2002. The DSC system has several advantages. The unit provides a very brief data burst (digital) which transmits the essentials of the distress call and message, mainly the identification of the vessel, its position, and the nature of the distress. It will repeat the message until another unit acknowledges its reception. It is used for urgency and safety information, and it can be used to call other stations (thus reducing calling congestion on channel 16).

The DSC is an alerting device. Once received and acknowledged, other vessels and units activate their

radio telephone transceivers and voice communications are carried out. Channel 70 is reserved strictly for DSC, no radio voice transmissions are permitted.

Maritime Mobile Service Identification (MMSI)

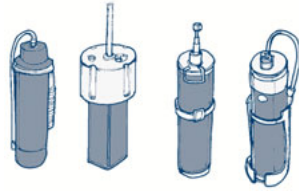
Each DSC unit has a unique 9-digit number called an MMSI. It is a "radio call sign" type identifier. Canadian registered vessels start with the digits 316. A group of vessels (such as a specific fleet of fishing vessels or Canadian Coast Guard vessels) can be registered for group calling.

Emergency Position Indicating Radio Beacons (EPIRBs)

The COSPAS-SARSAT detects emergency radio beacon signals on **121.5 MHz** and **406 MHz**. It can also detect the military alert signal **243.0 MHz**, but this frequency is not sanctioned under GMDSS guidelines. General "beacons" in use that utilise 121.5/406 MHz include:

- ➔ Emergency Locator Transmitters (ELTs) (primarily aircraft)

- ➔ Emergency Position Indicating Radio Beacons (EPIRBs) (primarily maritime)
- ➔ Personal Locator Beacons or PLBs (primarily land).



406 Mhz EPIRBs

Each 406 beacon is registered with its own unique identification number. This provides information on the owner, and the craft to which it is registered. An important feature of 406 MHz emergency beacons is the addition of a digitally encoded message, which provides such information as the country of beacon registration and the identification of the vessel or aircraft in distress, and optionally, position data from onboard navigation equipment.



Category 1 EPIRB

Category 1 EPIRB: Automatically deployed. Designed for float free. Should be mounted outside the wheelhouse, in an area where the EPIRB can be deployed free from interference of equipment. These units are mounted antennae down. Do not lift them out and turn upright, such action will activate the transmitter and result in a false ALERT.

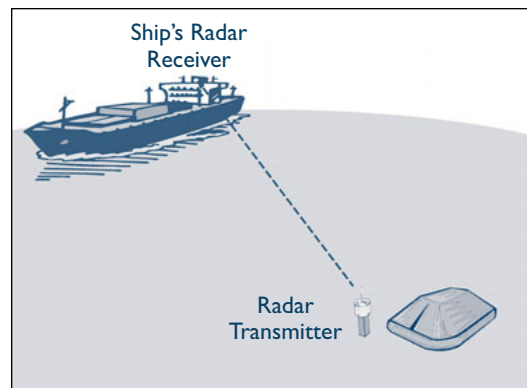
Category 2 EPIRB: Manually activated.

Emergency Locator Transmitters (ELTs)

Carried by aircraft. The unit is activated on impact or manually. Operating frequencies are 121.5/406/243 MHz.

Search and Rescue Transponder (SARTs)

The SART provides a homing signal to those searchers who have entered into the search or alert area, to home in to the exact position. SARTs are radar transponders. When ship or airborne radar hits the lifeboat transponder, it will generate a response signal. This return signal is 12 blips or dots which appear on the search unit's radar, lining up outward along its line of bearing. As the search unit approaches to within 1 mile of the SART, the blips will change into wide arcs. Then become a complete circle the closer the search unit approaches. This warns the search unit to slow down, approaching the target.



e.g. EPIRB is to be tested every 3 months (or, as per manual instructions)



SART response on a radar

4.5.2 VHF Distress Messages and other Urgent Traffic

The decision to issue a distress is solely the Captain's. Each crewmember must be able to effectively issue a distress in on the Captain/Coxswain's orders or in the event that the Captain/Coxswain is physically unable to issue those orders and the vessel is in imminent peril.

*In distress communications, all calls should be prefaced with the distress signal **MAYDAY***

The steps to transmitting a **MAYDAY** for your vessel are as follows:

- ✓ Transmit an alarm signal if you have one
- ✓ Speak the distress signal "**MAYDAY**" 3 times
- ✓ Identify your vessel by saying, i.e. "This is the Auxiliary vessel Wall Flower, Auxiliary vessel Wall Flower, Auxiliary vessel Wall Flower."
- ✓ Give your position, by distance and bearing for a known geographical point, or by latitude and longitude
- ✓ State the nature of the distress and type of assistance required





- ✓ Give the number of persons on board and vessels involved, and any injuries
- ✓ Describe your vessel
- ✓ Provide any other information that could assist your rescuers, i.e. “Preparing to abandon ship with floater suits.”
- ✓ Repeat your message until someone answers
- ✓ Maintain radio contact on the distress frequency
- ✓ If necessary use any means at your disposal to attract attention. Turn on EPIRBs, use pyrotechnics, smoke, if no response on Channel 16 use any frequency to gain attention. See vessel safety Section 3.0 for the 18 or so ways of attracting attention.

Mayday Relay

Another ship or shore radio station can issue a Mayday Relay, where the transmission of the distress call is weak, or has been sent using a cellphone to the 911 system, and then onto JRCC/ MCTS.

The radiotelephony broadcast of a Mayday Relay shall consist of:

- The alarm signal
- “MAYDAY RELAY” (3x)
- “THIS IS” (centre identification) (3x)
- (repetition of the distress message)
- “OVER”

MCTS will control traffic during a distress through the impositions of the following:

Imposition of Silence

- MAYDAY”
- (All stations or station specific call)
- “SEELONCE MAYDAY”
- (centre identification)
- “OUT”

Urgency Call

The radiotelephony urgency call shall consist of:

- “PAN PAN” (3x)
- (“ALL STATIONS” or station specific call) (3x)
- “THIS IS”
- (centre identification) (3x)

To issue an urgency call on SafetyNET, see section 4.5.1, “Global Marine Distress and Safety System.”

Urgency - Acknowledgement of Receipt

The radiotelephony acknowledgement of an urgency message shall consist of:

- “PAN PAN”
- (the name and/or call sign of the station sending the urgency message) (3x)
- “THIS IS”
- (centre identification) (3x)
- “RECEIVED” (or “ROMEO ROMEO ROMEO” for language difficulties);
- “URGENCY”
- (words indicating that the JRCC will be advised)
- (a request for additional information required)

Urgency Cancellation

The radiotelephony cancellation message shall consist of:

- “PAN PAN”
- “ALL STATIONS” (3x)
- “THIS IS”
- (centre identification)
- (a brief description of the resolution of the incident)
- “URGENCY CANCELED”
- “OUT”

4.5.3 Distress Calls Received by Telephone

If you have received a telephone call concerning a distress or potential distress situation, you should:

- ✓ Note the caller’s name and telephone number
- ✓ Advise the caller to contact JRCC directly
- ✓ Check with JRCC that the caller has indeed contacted them;
- ✓ Call and brief your coxswain/captain and relay all of the information you have received
- ✓ Advise the Coxswain to call JRCC and be ready to proceed to assist if immediate danger exists
- ✓ If proceeding, advise JRCC of your response, or standby (if the call is of a non-distress nature) and await dispatch by JRCC