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A guide for the maritime VHF radiotelephone operator

Restricted Operator's
Certificate



Communications
Canada

ERRATA

- Page 2** The page title should read:
Applying for a certificate
- Page 10** Under: Emergency Position Indicating Radio Beacon (EPIRB)
Delete: 156.750 MHz
Add: 406.025 MHz
- Page 26** In the first example,
SAY AGAIN OFFICE or ORIGIN
should read:

SAY AGAIN OFFICE OF ORIGIN
- Page 42** Below the diagram of GMDSS, add:

FIGURE 1
- Page 45** The last paragraph should read:

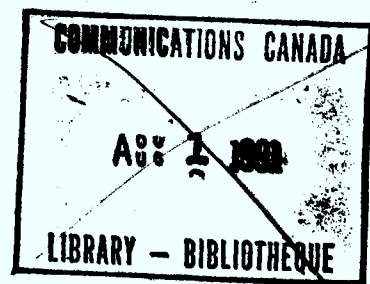
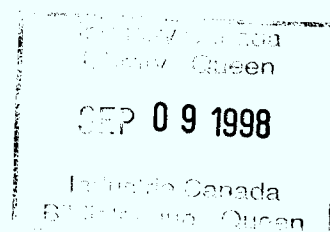
Technical specifications, as well as other pertinent information about these devices, appear in RADIO STANDARD SPECIFICATION 187 (RSS 187) and in Transport Canada's publication PERFORMANCE STANDARD FOR 406 MHz SATELLITE EMERGENCY POSITION INDICATING RADIO BEACONS (EPIRB) CLASS I AND CLASS II (TP4522).
- Page 51** Diagram on the left should read:

Hydrometer
- Page 52** From the list of District Offices, delete:

Rimouski, Que., Prince Rupert, B.C. and Langley, B.C.

A guide for the maritime VHF radiotelephone operator:

Restricted Operator's
Certificate



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DL 10669131

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Introduction

Canada is a member of the International Telecommunication Union (ITU), an international organization established to provide the standards for communication procedures and practices, frequency allocation and radio regulations on a worldwide basis. The ITU establishes the minimum conditions to be imposed for obtaining the various classes of radio operator certificates. The Department of Communications administers telecommunications in Canada, based upon both national and international acts, regulations and conventions.

The information contained in the following pages is intended for those individuals seeking to obtain a Restricted Operator's Certificate. Another publication which may be of assistance is the *Radio Aids to Marine Navigation (RAMN)*.

Inquiries concerning the contents of this handbook, including suggestions for improvement, may be directed to any office of the Department of Communications.



Applying for a licence

Application to be examined for the Restricted Operator's Certificate should be made to the nearest office of the Department of Communications. Telephone numbers for the Department of Communications' regional and district offices are listed in the telephone directory.



Examinations

Examinations may be held at departmental district offices or at other locations suitable for examination purposes.

Requirements

The examination may consist of written, practical and oral exercises. The candidate will be required to satisfy an examiner that he or she:

- is capable of operating modern VHF radiotelephone equipment
- possesses a general knowledge of radiotelephone operating procedures, international regulations applicable to radiotelephone communications between stations and specifically those regulations relating to the safety of life
- possesses a general knowledge of the *Radiocommunications Act* and the regulations made thereunder
- possesses practical knowledge of the operation of Global Maritime Distress Safety and System equipment for vessels engaged on voyages within the range of VHF coast stations (60-80 Km).

Eligibility

Citizenship status

A candidate does not have to be a Canadian citizen or a landed immigrant in order to hold a Radio Operator's Certificate. A driver's licence, birth certificate, baptismal certificate, citizenship certificate or a landed immigrant identification card may be used as proof of identity.

Age

There is no limit.

Physical requirements

When completing an application for a Radio Operator's Certificate, the candidate may be requested to certify that he or she has no physical disabilities that would impair his or her ability to safely operate a radio station.



Radio station licences and operator's certificates

Radio station licences

Unless exempted under Section 6 of the General Radio Regulations Part II, all radio stations in Canada must be licensed by the Minister of Communications. The licence (or copy thereof) must be posted in a conspicuous place near the radio equipment.

The radio station licence generally specifies the call sign assigned to the station, the frequencies to be used for transmitting, the type of radio equipment authorized and any special conditions under which the station should be operated.

To obtain a Radio Station Licence, a completed licence application form with the prescribed fee should be submitted to the Department of Communications (DOC). The application is then processed and a licence is forwarded to the licensee by departmental headquarters in Ottawa. (Station licence application forms are available from any DOC district office).

To be eligible for licensing in Canada, radiotelephone equipment must be type approved or found to be technically acceptable for licensing by the department. The DOC type approval number is a 9-digit number appearing on a label affixed to the radio (usually at the back of the set) and assures the purchaser or owner of the radio equipment that it meets Canadian Technical Standards. Therefore, before purchasing a radiotelephone, ensure that it is labelled with the DOC type approval number or that it has been granted technical acceptability by the DOC.

Station licence fees are due on April 1 of each year. Billing notices are mailed to licensees directly from departmental headquarters in Ottawa.

Note: Any person who establishes a radio station without the benefit of a radio licence is liable, on summary conviction, to a penalty of up to five thousand dollars (\$5,000), or to imprisonment for a term not exceeding one year, or both or, in the case of a corporation, to a fine not exceeding twenty-five thousand dollars (\$25,000).

Inquiries concerning radio licensing may be directed to any of the district offices of the Department of Communications. A sample licence is provided in Appendix 2.



Radio operator's certificate requirements

Under the new arrangements for operators in the Maritime Mobile Service, only 5 certificates are needed to fulfil the requirements. (This includes the Coast Guard operators who will have two certificates of their own) The following are the three certificates available to the public: Restricted Operator's Certificate, the General Operator's Certificate and the Radiocommunications General Maritime Certificate.

A Restricted Operator's Certificate is required by the operator of VHF radiotelephone equipment on all vessels engaged on voyages within range of VHF radiotelephone coast stations (60-80 Km). The radiotelephone equipment at such stations shall be of a type that requires only simple external switching and all frequency-determining elements must be preset within the transceiver.

At present, Restricted Operator's Certificates are issued for life and no validation is required. Please contact the nearest district office if your certificate is lost or requires replacement.



Communications priorities

The order of priority for radiocommunications:

1. Distress communications.
2. Urgency communications.
3. Safety communications.
4. Communications relative to direction-finding bearings.
5. Communications relative to the navigation, movement and needs of aircraft engaged in search and rescue operations.
6. Messages containing exclusively meteorological (weather) observations destined to an official meteorological office.
7. Communications related to the application of the United Nations Charter.
8. Service messages relative to the working of the radiocommunications service or to messages that have been previously transmitted.
9. All other communications.

Watchkeeping

Ships voluntarily fitted with radiotelephone equipment should endeavor to keep watch on the frequency 156.800 MHz (Channel 16 VHF) to the greatest practicable extent when at sea.

Ships that are required by law to be fitted with VHF radiotelephone equipment (compulsorily fitted) must keep a continuous watch on the frequency 156.800 MHz (Channel 16 VHF) or other frequencies specifically designated on their licences when at sea except when actually engaged in conducting communications on their working frequencies.

For compulsorily fitted vessels, the very high frequency (VHF) regulations state that watchkeeping on the VHF band must begin at least 15 minutes before the vessel leaves its dock or place of mooring. The regulations also state that this watch on Channel 16 (156.800 MHz) shall not be terminated until the vessel is securely anchored or moored. There are precautions that must be observed when using radiotelephone equipment while a vessel is in port or navigating near coast stations. The regulations governing the use of the transceivers in and around ports and coast stations state that the VHF transceiver will be used in the 1-watt position when in port.



Superfluous communications and interference

Unnecessary transmissions

Unnecessary or superfluous transmissions are not permitted. Communications should be restricted to those necessary for the safe and expeditious movement of vessels.

Penalty - Any person who, without lawful excuse, interferes with or obstructs any radio-communication is guilty of an offence. That person is liable, on summary conviction, to a fine not exceeding five thousand dollars (\$5,000) and costs, or to imprisonment for a term not exceeding one year, or to both.

Profane and obscene transmissions

Profane and obscene language is strictly prohibited.

Penalty - Any person who violates the regulations relative to unauthorized communications or profane language is liable, on summary conviction to a penalty not exceeding five thousand dollars (\$5,000) and costs, or to imprisonment for a term not exceeding one year or both.

False distress transmissions

False distress signals are strictly prohibited.

Penalty - Any person who knowingly transmits or causes to be transmitted any false or fraudulent distress signal, call or message is guilty of an offence and is liable, on summary conviction, to a penalty not exceeding five thousand dollars (\$5,000) and costs, or to imprisonment for a term not exceeding one year, or to both.

Interference

All radio stations shall be installed and operated so as not to interfere with or interrupt the working of another radio station.

The only situation under which you may interrupt or interfere with the normal working of another station is when you are required to transmit a higher priority call or message; for example, distress, urgency or safety calls or messages.



Secrecy of communications

Radio operators and all persons who become acquainted with radiocommunications are bound to preserve the secrecy of correspondence. No person shall divulge the contents, or even the existence, of correspondence transmitted, received or intercepted by a radio station, except to the addressee of the message or his accredited agent, or the properly authorized officials of the Government of Canada or a competent legal tribunal, or an operator of a telecommunications system as is necessary for the furtherance of delivery of the communications. The foregoing restrictions do not apply to a message of distress, urgency, safety or to messages addressed to "All Stations", that is weather reports, storm warnings, etc.

Penalty – Any person who violates the secrecy of correspondence is liable, on summary conviction, to a penalty not exceeding five thousand dollars (\$5,000), or to imprisonment for a term not exceeding one year, or to both.

Channel/frequency assignments

The frequencies used in marine radiotelephone communication are established for use by specific services in specific locations. These frequencies should only be used for the type of communication for which they were intended. Some of the established communication services and frequencies are explained in this section.

International distress, calling and answering frequencies

These frequencies are set aside for use primarily for distress, urgency and safety priority communications or they can be used to initiate a call to another station and for a response from that station, at which time a satisfactory mutual working channel or frequency will be settled. Channel 16 (156.800 MHz) on VHF has been designated for this purpose.

Note: A working channel is a channel other than a pre-designated channel that is used for the passage of information or messages from one station to another. An operator should never send messages or information on the calling channel. This channel is used for contact only. When it is known that a station you want to communicate with is operating on a working frequency, *it is not necessary to employ the calling frequency*. It is permissible to wait until the communication terminates and then call the station with which you wish to communicate on the working frequency.



Intership frequencies

A number of frequencies have been set aside specifically for communication between ships (ship-to-shore communication prohibited). These frequencies include VHF-Channels 07 (156.350 MHz) and 08 (156.400 MHz).

Some intership frequencies have been assigned to specific services.

For example

Fishing

VHF - Channels	67 (156.375 MHz)
	69 (156.475 MHz)
	73 (156.675 MHz)

Pleasure boats

VHF - Channels	68 (156.425 MHz)
	70 (156.525 MHz)
	71 (156.575 MHz)

Marinas

VHF - Channels	68 (156.425 MHz)
	71 (156.575 MHz)

Intership safety frequencies

Some intership frequencies have been designated as safety frequencies. These frequencies are used when an important message is to be passed between ships. An example is a safety message. The common intership frequencies are VHF-Channel 06 (156.300 MHz) and 08 (156.400 MHz).

Public correspondence frequencies

Coast Guard Radio Stations are located at various points along the coasts and the Great Lakes. They provide a safety service, including broadcasts of meteorological forecasts and aids to navigation information, as well as facilities for handling messages or telephone conversations between ships and shore. These ship-to-shore frequencies that have been set aside for communicating with coast stations are called public correspondence frequencies.



Vessel traffic services frequencies

In order to promote navigational safety, the protection of the environment and the safe movement of marine traffic, vessel traffic services (VTS) zones have been established throughout Canadian waters. Communications within these zones are to be conducted on the following specific frequencies provided for this service:

VHF - Channels	09 (156.450 MHz)
	10 (156.500 MHz)
	11 (156.550 MHz)
	12 (156.600 MHz)
	13 (156.650 MHz)
	14 (156.700 MHz)
	74 (156.725 MHz)

Broadcast frequencies

One of the many tasks of the Canadian Coast Guard is to pass information to vessels in the form of notices of dangers to navigation or the marine weather forecast. These broadcasts are usually transmitted on Channel 21B (161.650 MHz) or on Channel 83B (161.775 MHz). There are some variations on channel usage in some areas of Canada. *The Radio Aids to Marine Navigation* (RAMN) publication should be consulted for confirmation of VHF frequencies.

Emergency frequencies

Distress	156.800 MHz (Channel 16)
Emergency Position Indicating	
Radio Beacon (EPIRB)	156.800 MHz (Channel 16) (for future use)
	156.750 MHz (Channel 15) (for future use)
	121.500 MHz (Aeronautical)
	243.000 MHz (Aeronautical)



Emissions

In VHF transmissions, the type of emission used is frequency modulation (FM).

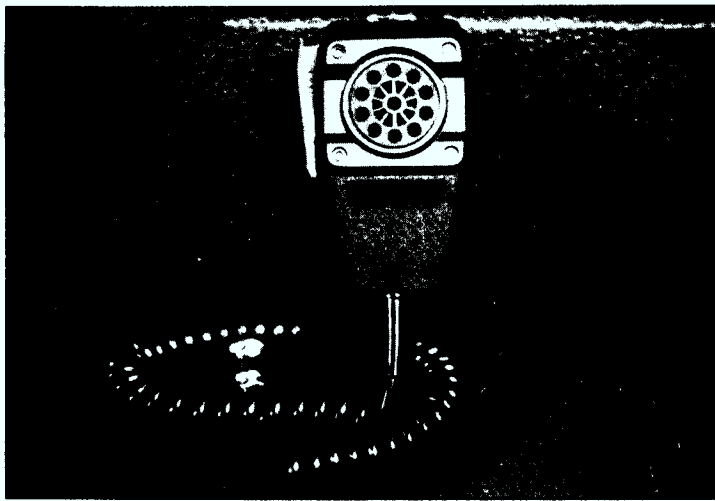
VHF channel assignments

Users are asked to refer to Radiocommunications Information Circulation 13 (RIC13) for details on channel allocations. Copies of the circular may be obtained by contacting of the regional or district offices listed in the blue pages of your telephone directory.

Microphone techniques

The efficient use of radiotelephony depends to a large extent on the method of speaking and the articulation of the operator. As the distinctive sounds of consonants are apt to become blurred in the transmission of speech, words of similar length containing the same vowel sounds may sound alike. Special care is necessary in their pronunciation.

Special care is also required when handling the microphone. The microphone should not be held too close to your mouth. This may cause distortion, slurred words and transmissions that may have to be repeated to be understood.



Microphone

Speak all words plainly and end each word clearly in order to prevent the running together of consecutive words. Avoid any tendency to shout, to accent syllables artificially or to speak too rapidly. The following points should be kept in mind when using a radiotelephone.

Speed

Keep the rate of speech constant, neither too fast nor too slow. Remember that the operator receiving your message may have to write it down.

Rhythm

Preserve the rhythm of ordinary conversation. Avoid the introduction of unnecessary sounds such as "er" and "um" between words.

If the communication link is unreliable, or the wording of the text complex or confusing, use the command "words twice" or, upon request, repeat the message using the phonetic alphabet. This should ensure that the information within the text of the message is received correctly.



Procedural words and phrases

While it is not practical to set down precise phraseology for all radiotelephone procedures, the following words and phrases should be used where applicable. Words and phrases such as "OK", "Repeat", "Ten-four", "Over and Out", "Breaker Breaker", "Come in please", or slang expressions should not be used.

Table 1

Word or phrase	Meaning
ACKNOWLEDGE	Let me know that you have received and understood this message.
AFFIRMATIVE	Yes, or permission granted.
BREAK	To indicate the separation between portions of the message. (To be used where there is no clear distinction between the text and other portions of the message.)
CHANNEL	Change to channel...before proceeding.
CONFIRM	My version is——. Is that correct?
CORRECTION	An error has been made in this transmission (message indicated). The correct version is ——.
GO AHEAD	Proceed with your message.
HOW DO YOU READ?	How well do you receive me?
I SAY AGAIN	Self-explanatory (use instead of "I repeat").
MAYDAY	The spoken word for the distress signal.
MAYDAY RELAY	Is the spoken word for the distress relay signal.
NEGATIVE	No, or that is not correct, or I do not agree.
OVER	My transmission is ended and I expect a response from you.
OUT	Conversation is ended and no response is expected.
PAN PAN	The spoken word for the urgency signal.
PRUDONCE	During long distress situations, communications can resume on a restricted basis. Communication is to be restricted to ship's business or messages of a higher priority.
READBACK	Repeat all of this message back to me exactly as received after I have given OVER (do not use the word "repeat").
ROGER	I have received all of your last transmission.
ROGER NUMBER	I have received your message number
STANDBY	I must pause for a few seconds or minutes, please wait.
SAY AGAIN	Self-explanatory. (Do not use the word "repeat").
SÉCURITÉ	Is the spoken word for the safety signal.



Word or phrase	Meaning
SEELONCE	Indicates that silence has been imposed on the frequency due to a distress situation.
SEELONCE DISTRESS	Is the international expression to advise that a distress situation is in progress. This command comes from a vessel or coast station other than the station in distress.
SEELONCE FEENEE	Is the international expression for a distress cancellation.
SEELONCE MAYDAY	Is the international expression to advise that a distress situation is in progress. The command comes from the ship in distress.
THAT IS CORRECT	Self-explanatory.
VERIFY	Check coding, check text with originator and send correct version.
WILCO	Your instructions received, understood and will be complied with.
WORDS TWICE	(a) As a request: Communication is difficult, please send each word twice. (b) As information: Since communication is difficult, I will send each word twice.



Phonetic alphabet

Word spelling

The words of the International Telecommunication Union (ITU) phonetic alphabet should be learned thoroughly. Whenever isolated letters or groups of letters are pronounced separately, or when communication is difficult, the alphabet can be easily used. The phonetic alphabet should always be used when transmitting call signs.

When it is necessary to spell out call signs or words, the following table should be used:

Table 2

Letter	Word	Pronounced as
A	Alfa	AL FAH
B	Bravo	BRAH VOH
C	Charlie	CHAR LEE or SHAR LEE
D	Delta	DELL TAH
E	Echo	ECK OH
F	Foxtrot	FOKS TROT
G	Golf	GOLF
H	Hotel	HOH TELL
I	India	IN DEE AH
J	Juliett	JEW LEE ETT
K	Kilo	KEY LOH
L	Lima	LEE MAH
M	Mike	MIKE
N	November	NO VEM BER
O	Oscar	OSS CAH
P	Papa	PAH PAH
Q	Quebec	KEH BECK
R	Romeo	ROW ME OH
S	Sierra	SEE AIR RAH
T	Tango	TANG GO
U	Uniform	YOU NEE FORM or OO NEE FORM
V	Victor	VIK TAH
W	Whiskey	WISS KEY
X	X-ray	ECKS RAY
Y	Yankee	YANG KEY
Z	Zulu	ZOO LOO

Note: The syllables to be emphasized are shown in bold.

Example: Using the phonetic alphabet (if asked to spell its vessel name and call sign where communication is difficult), the vessel SEAWOLF VY1234 would express its identification as SIERRA, ECHO, ALPHA, WHISKEY, OSCAR, LIMA, FOXTROT; VICTOR, YANKEE, ONE, TWO, THREE, FOUR.



Numbers

Table 3

Numbers expressed in words

0 - ZERO	6 - SIX
1 - ONE	7 - SEVEN
2 - TWO	8 - EIGHT
3 - THREE	9 - NINE
4 - FOUR	DECIMAL
5 - FIVE	THOUSAND

All numbers except whole thousands should be transmitted by pronouncing each digit separately. Whole thousands should be transmitted by pronouncing each digit in the number of thousands followed by the word THOUSAND.

10 becomes	ONE ZERO
75 becomes	SEVEN FIVE
100 becomes	ONE ZERO ZERO
5,800 becomes	FIVE EIGHT ZERO ZERO
11,000 becomes	ONE ONE THOUSAND
68,009 becomes	SIX EIGHT ZERO ZERO NINE

Numbers containing a decimal point should be transmitted as above, with the decimal point indicated by the word DECIMAL.

156.8 becomes	ONE FIVE SIX DECIMAL EIGHT
---------------	----------------------------

Monetary denominations, when transmitted with groups of digits, should be sent in the sequence in which they are written.

\$17.25 becomes	DOLLARS ONE SEVEN DECIMAL TWO FIVE
.75 becomes	SEVEN FIVE CENTS



Time

The twenty-four hour clock system should be used in expressing time in the Maritime Mobile Service. It should be expressed and transmitted by means of four figures, the first two denoting the hour past midnight and the last two the minutes past the hour.

Some examples of time using the twenty-four hour clock system are shown below:

Table 4
Some times as expressed by radiotelephone

Time	Express as	
12:45 a.m.	0045	ZERO ZERO FOUR FIVE
12:00 noon	1200	ONE TWO ZERO ZERO
12:45 p.m.	1245	ONE TWO FOUR FIVE
12:00 midnight	0000	ZERO ZERO ZERO ZERO
1:30 a.m.	0130	ZERO ONE THREE ZERO
1:45 p.m.	1345	ONE THREE FOUR FIVE
8:30 p.m.	2030	TWO ZERO THREE ZERO

Co-ordinated Universal Time (UTC) (previously known as Greenwich Mean Time - GMT) is normally used in radiocommunications, and the letter Z is an accepted abbreviation for UTC, for example - 0520Z, 2140Z.

However, where operations are conducted entirely within one time zone, standard time may be used. Care should be taken to clearly indicate the time zone involved, for example - 1335E (for Eastern Standard Time), 2214M (for Mountain Standard Time). Daylight Saving Time should not be used.

Table 5
Time zone comparison

Abbrev	Meaning
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 Co-ordinated Universal Time to local standard time look opposite UTC under the appropriate column below. For corresponding Daylight Saving Time, add one hour.

Table 6
North American Time Zones versus Co-ordinated Universal Time

UTC	NST	AST	EST	CST	MST	PST
0100	2130	2100	2000	1900	1800	1700
0200	2230	2200	2100	2000	1900	1800
0300	2330	2300	2200	2100	2000	1900
0400	0030	0000	2300	2200	2100	2000
0500	0130	0100	0000	2300	2200	2100
0600	0230	0200	0100	0000	2300	2200
0700	0330	0300	0200	0100	0000	2300
0800	0430	0400	0300	0200	0100	0000
0900	0530	0500	0400	0300	0200	0100
1000	0630	0600	0500	0400	0300	0200
1100	0730	0700	0600	0500	0400	0300
1200	0830	0800	0700	0600	0500	0400
1300	0930	0900	0800	0700	0600	0500
1400	1030	1000	0900	0800	0700	0600
1500	1130	1100	1000	0900	0800	0700
1600	1230	1200	1100	1000	0900	0800
1700	1330	1300	1200	1100	1000	0900
1800	1430	1400	1300	1200	1100	1000
1900	1530	1500	1400	1300	1200	1100
2000	1630	1600	1500	1400	1300	1200
2100	1730	1700	1600	1500	1400	1300
2200	1830	1800	1700	1600	1500	1400
2300	1930	1900	1800	1700	1600	1500
0000	2030	2000	1900	1800	1700	1600



Date

Where the date, as well as the time of day, is required to be shown, a six (6) figure group should be used. The first two figures indicate the day of the month, the following four figures indicate the time.

Example

Information	Expressed
Noon on the 16th day of the month (EST)	161200E
2:29 p.m. AST (expressed in UTC), on the 2nd day of the month	021829Z
2:45 a.m. (Atlantic Standard Time), on the 24th day of the month	240245A



Calling

Before transmitting, every operator shall listen for a period long enough to satisfy himself that he will not cause harmful interference to transmissions already in progress. If such interference seems likely, he shall wait for the first break in the transmission.

A station having a distress, urgency or safety message to transmit is entitled to interrupt a transmission of lower priority.

Single station call

When an operator wishes to establish communication with a specific station, the following items shall be transmitted in the order indicated:

1. Call sign of the station called (not more than three times; once is sufficient if radio conditions are good).
2. The words THIS IS.
3. The call sign of the station calling (not more than three times and once is sufficient, if radio conditions are good).
4. The frequency on which the station is transmitting.
5. Invitation to reply OVER.

Example

VANCOUVER COAST GUARD RADIO (repeated up to 3 times)
THIS IS
SEA FOX VC1234
ON CHANNEL 26
OVER

Avoid REVERSE calling. Transmitting your own station identifier followed by TO or CALLING and then the identifier of the station you wish to call, is not proper radio procedure. Remember that the identifier of the station being called is always spoken first, followed by THIS IS and your own station's identifier.



General call

When an operator wishes to establish communication with any station within range or in a certain area, the call should be made to ALL STATIONS, using the same procedure as a single station call.

Example

ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
HALIFAX COAST GUARD RADIO (repeated up to 3 times)

Multiple station call

If more than one station is to be called simultaneously, the identifiers may be transmitted in alphabetical order followed by the words THIS IS and your call sign. As a general rule, operators replying to a multiple station call should answer in the order in which they have been called.

Example

SEA FOX VC1234, BLACK PRINCE VY4321, TAG-A-LONG VY4412
THIS IS
SYDNEY COAST GUARD RADIO
OVER

Coast station traffic lists

If a vessel is expecting radio messages or radiotelephone calls which will be handled through a coast station, the operator must find the advertised times at which the traffic list will be broadcast. Each coast station has advertised the frequency and time it will broadcast its traffic list in the *Radio Aids to Marine Navigation (RAMN)*.

Example on Channel 16

ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
HALIFAX COAST GUARD RADIO (repeated up to 3 times)
TRAFFIC LIST, LISTEN CHANNEL 26
HALIFAX COAST GUARD RADIO
OUT



Example on Channel 26

ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
VANCOUVER COAST GUARD RADIO (repeated up to 3 times)
TRAFFIC LIST AS FOLLOWS:
S/V BOUNTY VC3312; M/V SEADOG VZ1234
VANCOUVER COAST GUARD RADIO
OVER

Radiotelephone calling procedure in the Maritime Mobile Service

As a general rule, the ship station establishes communication with the coast station. For this purpose, the ship station may call the coast station only when it comes within the service area of the latter. That is the area within which, by using an appropriate frequency, the ship station can be heard by the coast station. However, a coast station having traffic for a ship station may call this station if it has reason to believe that the ship station is keeping watch and is within the service area of the coast station.

When a coast station receives calls from several ship stations at practically the same time, it decides the order in which these stations may transmit their traffic. Its decision is based on the priority of the radiotelegrams or radiotelephone calls that the ship stations have on hand and on the need for allowing each calling station to clear the greatest possible number of communications.

When a station called does not reply to a call sent three times at intervals of two minutes, the calling shall cease and shall not be renewed until after an interval of three minutes. Before renewing the call, the calling station shall ascertain that the station called is not in communication with another station.



Replying

An operator hearing a call directed to his station shall reply as soon as possible and advise the calling station to proceed with his message with the words GO AHEAD or STAND BY followed by the anticipated number of minutes of delay.

Example

SEA FIRE CZ1234
THIS IS
VANCOUVER COAST GUARD RADIO
GO AHEAD
OVER

Do not ignore the call. This results in unnecessary calling, using up air time that is needed by other stations.

When an operator hears a call but is uncertain if the call is intended for his station, he should not reply until the call has been repeated and understood.

When a station is called and the identity of the calling station is uncertain, the operator should reply immediately using the words STATION CALLING, his station's identification, and the words SAY AGAIN and OVER.

Example

STATION CALLING SEA FIRE CZ1234
SAY AGAIN
OVER

To terminate communications, simply conclude your transmission with the command OUT (which means "conversation is ended and no response is expected").

Example

CANSO LOCK
THIS IS
TAG-A-LONG VY4412
RECEIVED CANSO LOCK CLEARANCE
TAG-A-LONG VY4412
OUT

Radiotelephony contact generally consists of four parts: (1) call, (2) reply, (3) the message, and (4) the acknowledgement or ending.



Example contact

Call by vessel

HALIFAX COAST GUARD RADIO
THIS IS
BLACK PRINCE VY4321
ON CHANNEL 26
OVER

Reply by coast station

BLACK PRINCE VY4321
THIS IS
HALIFAX COAST GUARD RADIO
GO AHEAD
OVER

The message – vessel

HALIFAX COAST GUARD RADIO
THIS IS
BLACK PRINCE VY4321
REQUEST TELEPHONE CALL CONNECTION
OVER

The message – coast

BLACK PRINCE VY4321
THIS IS
HALIFAX COAST GUARD RADIO
STAND BY - 5 MINUTES
OVER

Acknowledgement – vessel

HALIFAX COAST GUARD RADIO
THIS IS
BLACK PRINCE VY4321
ROGER, STANDING BY



Corrections and repetitions

Corrections and repetitions during transmission

When an error has been made in transmission, the word **CORRECTION** should be spoken, the last correct word or phrase repeated and the correct version transmitted.

Examples

AT POSITION SIX, ONE	CORRECTION SIX, TWO DEGREES ...
PROCEED TO DOCK FOUR	CORRECTION DOCK FIVE, ADVISE ETA.

Repetitions after completion

Transmissions or items of transmissions should not be repeated unless requested by the receiving operator.

Repetitions should be requested if reception is doubtful.

If the receiving operator desires a repetition of a message, he/she should speak the words **SAY AGAIN**. If repetition of only a portion of a message is required, the receiving operator should use the following appropriate phraseology:

SAY AGAIN ALL BEFORE ... (first word satisfactorily received).

SAY AGAIN ALL BETWEEN ... (last word correctly received prior to the missing segment) and ... (first word correctly received after the missing segment).

SAY AGAIN ALL AFTER ... (last word satisfactorily received).

Examples

VANCOUVER COAST GUARD RADIO

THIS IS

NORTH WIND VY3344

SAY AGAIN ALL BEFORE "DOCK"

OVER

HALIFAX COAST GUARD RADIO

THIS IS

SEADOG VZ1234

SAY AGAIN, ALL BETWEEN "PROCEED" AND "TIME"

OVER

ST. JOHN'S COAST GUARD RADIO

THIS IS

M/V BOUNTY VC3312

SAY AGAIN ALL AFTER "LATITUDE"

OVER



Request for repetition of specific items of a message should be made by speaking the words SAY AGAIN followed by the identification of the message desired.

Examples

SAY AGAIN OFFICE or ORIGIN

SAY AGAIN POSITION

SAY AGAIN TIME

Control of communications

As a general rule, except in cases of priority communications, the control of radiocommunications between a coast station and a ship station lies with the coast station.

In communications between coast stations and ship stations, the ship station shall comply with instructions given by the coast station in all matters relating to the order and time of transmission, the choice of frequency and to the duration and suspension of work.

In communications between ship stations, normally the station called is the controlling station. If the station is in agreement with the calling station, it shall transmit an indication from that moment onwards that it will listen on the working frequency or channel announced by the calling station.

However, if the station called is not in agreement with the calling station on the working frequency or channel to be used, it shall transmit an indication of the working frequency or channel to be used.



Examples

Ship calling a coast station
(the coast station has control of radiocommunications)

HALIFAX COAST GUARD RADIO
THIS IS
SEA FOX VC4331
ON CHANNEL 16
OVER

Coast station calling a ship
(the coast station has control of radiocommunications)

SEA FOX VC4331
THIS IS
HALIFAX COAST GUARD RADIO
GO AHEAD ON CHANNEL 26
OVER

One ship to another ship
(the ship being called has the control of radiocommunications)

SEA FOX VC4331
THIS IS
SANDPATCH VY1234
OVER

The called ship replies
(the ship being called has the control of radiocommunications)

SANDPATCH VY1234
THIS IS
SEA FOX VC4331
CHANGE TO CHANNEL 69
OUT

The operation of a radio station is under the control of the person or persons in charge of the station.

Note: In cases of distress or urgency communications, the control of the communications lies with the station initiating the priority call.



Signal checks

When your radio station requires a signal (or radio) check, follow this procedure.

1. Call another ship station or a coast station on Channel 16 (156.800 MHz) and request that station to change to a working channel or frequency.
2. Establish contact on the working channel or frequency and conduct your signal check.
3. The signal check consists of SIGNAL CHECK, 1, 2, 3, 4, 5. HOW DO YOU READ ME? OVER.
4. Your station identification (vessel name and call sign) should be transmitted during such test transmissions.
5. Signal checks should not last more than 10 seconds.
6. When replying or receiving a reply to a signal check, the readability scale should be used.

The station that has been requested to provide the signal report should reply using the following readability scale:

- 1 = Bad (unreadable)
- 2 = Poor (readable now and then)
- 3 = Fair (readable but with difficulty)
- 4 = Good (readable)
- 5 = Excellent (perfectly readable)

Example

Call

VANCOUVER COAST GUARD RADIO
THIS IS
PACIFIC HIGH CY2632
ON CHANNEL 26
SIGNAL CHECK, 1,2,3,4,5.
HOW DO YOU READ ME?
OVER

Response

PACIFIC HIGH CY2632
THIS IS
VANCOUVER COAST GUARD RADIO
READABILITY OF 4
OUT



Distress, urgency and safety

Distress communications

Distress communications should be conducted in accordance with the procedures outlined below. These procedures do not, however, prevent a station in distress from making use of any means at its disposal to attract attention to make known its position, and obtain help.

Frequencies to be used

The first transmission of the distress call and message by a vessel should be on the distress, calling and answering frequency of Channel 16, 156.800 MHz (VHF). If no response is heard on this frequency, the use of any other available frequency in an effort to obtain assistance is permitted.

Control of distress traffic

The control of distress traffic is the responsibility of the vessel in distress or of the station which relays the distress message. These stations may, however, delegate the control of distress traffic to another station such as a Coast Guard Radio Station. During many distress situations Coast Guard Radio Stations control distress traffic. Their powerful coastal transmitters can be readily heard by other ship and land stations over a wide area.

Distress signal

In radiotelephony, the spoken word for distress is MAYDAY. The distress signal indicates that the station sending the signal is

1. threatened by grave and imminent danger and requires immediate assistance, or
2. aware that a ship, aircraft or other vehicle is threatened by grave and imminent danger and requires immediate assistance.

Distress call

The distress call will only be sent on the authority of the person in command of the station. The distress call should comprise the following:

1. The distress signal MAYDAY spoken three times.
2. The words THIS IS.
3. The name and call sign of the vessel in distress spoken three times.

Example

MAYDAY, MAYDAY, MAYDAY
THIS IS
SEAFOX VC1234, SEAFOX VC1234, SEAFOX VC1234

The distress call will not be addressed to a particular station and acknowledgement of receipt shall not be given before the distress message is completed.



Distress priority

The distress call has absolute priority over all other transmissions. All stations which hear it shall immediately cease any transmission capable of interfering with distress traffic and shall continue to listen on the frequency used for the distress call.

Distress message

The distress call shall be followed as soon as possible by the distress message. The distress message shall be comprised of the following:

1. The distress signal MAYDAY.
2. The call sign of station in distress (once).
3. Particulars of its position.
4. Nature of distress and kind of assistance required (that is, what has happened).
5. The number of persons on board and injuries (if applicable).
6. Any other information that might facilitate rescue.
7. The call sign of the vessel.

Note: As a general rule, a ship will signal its position in latitude and longitude. When practicable, the true bearing distance in nautical miles from a known geographical position may be given.

Example

MAYDAY
M/V SEADOG VZ1234
POSITION: LATITUDE 43° 30' 56" N
LONGITUDE 61° 30' 21" W
SHIP ON FIRE
15 METRE CAPE ISLAND, YELLOW AND BLUE IN COLOUR
4 PERSONS ON BOARD
ABANDONING SHIP TO LIFE RAFTS
SEADOG VZ1234



Repetition of a distress message

The distress message shall be repeated at intervals by the vessel in distress until an answer is received or until it is no longer feasible to continue. The intervals between repetitions of the distress message shall be sufficiently long to allow time for stations, which have received the message, to reply.

When a vessel in distress receives no answer to its distress call sent on the distress frequency of 156.800 MHz (channel 16), the distress call and message should be repeated on any other available frequency on which attention might be attracted (that is, ship-to-ship or ship-to-shore).

Any station which is not in a position to render assistance and which has heard a distress message that has not been immediately acknowledged, shall take all possible steps to attract the attention of other stations that are in a position to render assistance.

In addition, all necessary steps shall be taken to notify the Coast Guard or appropriate search and rescue authorities of the situation.

Action by station in distress

When a vessel is threatened by grave and imminent danger, and requires immediate assistance, the person in command should direct appropriate action as follows:

1. Transmit the distress call.
2. Transmit the distress message.
3. Listen for acknowledgement of receipt.
4. Exchange further distress traffic as applicable.
5. Turn on automatic emergency equipment (Emergency Position Indicating Radio Beacon - EPIRB) if provided and when appropriate.

Action by stations other than the station in distress

A station becoming aware that a ship station is in distress should transmit the distress message when

1. the station in distress is not in a position to transmit the message, or
2. the person in command of the station which intervenes believes that further help is necessary.

When a distress message is received and it is known that the vessel in distress is not in the immediate vicinity, sufficient time should be allowed before the distress message is acknowledged. This will permit stations nearer to the station in distress to reply.



Acknowledgement of receipt of a distress message

The acknowledgement of receipt of a distress message shall be given in the following form:

1. The distress signal MAYDAY.
2. The call sign of the station in distress (three times).
3. The words THIS IS.
4. The call sign of the station acknowledging receipt (three times).
5. ROGER MAYDAY.
6. MY POSITION IS ...
7. PROCEEDING TO RENDER ASSISTANCE.
8. Estimated time of arrival.
9. OVER.

Example

MAYDAY
SEADOG VZ1234, SEADOG VZ1234, SEADOG VZ1234
THIS IS
BLACK PRINCE VY4321, BLACK PRINCE VY4321, BLACK PRINCE VY4321
ROGER MAYDAY
WE ARE 2 TO 3 MILES AWAY FROM YOU
WE ARE PROCEEDING TO YOUR CO-ORDINATES
WE SHOULD ARRIVE WITHIN A HALF HOUR, OVER

Action by station acknowledging receipt of a distress message

1. Forward information immediately to the appropriate Coast Guard or search and rescue agencies or organizations.
2. Continue to guard the frequency on which the distress message was received and, if possible, any other frequency that may be used by the station in distress.
3. Notify any station with direction-finding or radar facilities which may be of assistance.
4. Cease all transmissions which may interfere with the distress traffic.



Action by other stations hearing a distress message

1. Continue to guard the frequency on which the distress message was received and, if possible, establish a continuous watch on appropriate distress and emergency frequencies.
2. Notify any station with direction-finding or radar facilities requesting assistance unless it is known that this action has been or will be taken by the station acknowledging receipt of the distress message.
3. Cease all transmissions that may interfere with the distress traffic.

Distress traffic

Distress traffic consists of all transmissions relative to the immediate assistance required by the station in distress. Essentially, all transmissions made after the initial distress call are considered as distress traffic. In distress traffic, the distress signal MAYDAY, spoken once, shall precede all transmissions. This procedure is intended to alert stations not aware of the initial distress call and now monitoring the distress channel that traffic heard relates to a distress situation.

Any station in the Maritime Mobile Service that has knowledge of distress traffic and cannot itself assist the station in distress shall nevertheless follow such traffic until it is evident that assistance is being provided. Until a message is received indicating that normal working may be resumed (cancellation of distress), all stations which are aware of distress traffic and which are not taking part in it are forbidden to transmit on the frequencies being used for distress traffic.

Relay of a distress message

A distress message repeated by a station other than the station in distress shall transmit a signal comprised of the following:

1. The signal MAYDAY RELAY spoken three times.
2. The words THIS IS.
3. The name and call sign of the station relaying the message (three times).
4. The distress signal MAYDAY (once).
5. The particulars of the station in distress such as the distress station's location, nature of distress, number of persons on board (repetition of the distress message as received).
6. Vessel name and call sign.
7. OVER.



Example

MAYDAY RELAY, MAYDAY RELAY, MAYDAY RELAY.
THIS IS
BLACK PRINCE VY4321, BLACK PRINCE VY4321, BLACK PRINCE VY4321.
MAYDAY.
SEADOG VZ1234.
POSITION: LATITUDE 43 30' 56"N.
LONGITUDE 61 30' 21"W.
15 METRE CAPE ISLAND, YELLOW AND BLUE IN COLOUR.
4 PERSONS ON BOARD.
ABANDONING SHIP FOR LIFE RAFTS.
BLACK PRINCE VY4321.
OVER.

Imposition of silence

The station in distress, or any station in the immediate vicinity, may impose silence on a particular station or stations in the area if interference is being caused to distress traffic.

The station in distress shall use the expression SILENCE MAYDAY or SEELONCE MAYDAY (the international expression).

Other stations imposing silence during a distress situation shall use the expression SILENCE DISTRESS or SEELONCE DISTRESS (the international expression).

Should radio silence be imposed during a distress situation, all transmissions shall cease immediately except from those stations involved in distress traffic.

Examples

Imposition of silence on a specific station by the station in distress. (M/V Bounty VC3312 is causing interference to distress traffic.)

MAYDAY.
M/V BOUNTY VC3312, M/V BOUNTY VC3312, M/V BOUNTY VC3312.
THIS IS
SEAFOX VC1234, SEAFOX VC1234, SEAFOX VC1234.
SILENCE MAYDAY.
OUT.

Imposition of silence on all stations by a station other than the station in distress.

MAYDAY.
THIS IS
BLACK PRINCE VY4321, BLACK PRINCE VY4321, BLACK PRINCE VY4321.
SILENCE DISTRESS.
OUT.



Cancellation of distress

When a station is no longer in distress, or when it is no longer necessary to observe radio silence (that is, rescue operation has concluded), the station that was in distress, the rescue vessel or the station that controlled distress traffic shall transmit a message addressed to All Stations on the distress frequency(ies) advising that the distress traffic has ended. The proper procedure for cancelling a distress message is

1. The distress signal MAYDAY (once).
2. The words ALL STATIONS (three times).
3. The words THIS IS.
4. The name and/or call sign of the station transmitting the message (three times).
5. The filing time of the message.
6. The call sign of the station in distress (once).
7. The words SILENCE FINISHED or SEELONCE FEENEE (the international expression).
8. A short plain-language description of why the distress situation is being cancelled (that is, vessel clear and under tow).
9. The name or call sign of the station transmitting the message.
10. The word OUT.

Example

MAYDAY.

ALL STATIONS, ALL STATIONS, ALL STATIONS.

THIS IS

NORTH WIND VY3344, NORTH WIND VY3344, NORTH WIND VY3344.

ONE SIX ONE FIVE, EASTERN STANDARD TIME.

SEADOG VZ1234.

SILENCE FINISHED (SEELONCE FEENEE).

ALL PERSONS ARE SAFE ON BOARD THIS VESSEL - THE VESSEL
SEADOG - SUNK - PORT OF DESTINATION HALIFAX, NOVA SCOTIA.

NORTH WIND VY3344.

OUT.

Note: The procedure outlined here is mainly for the benefit of other stations for the resumption of regular service on the distress frequencies. To ensure that Coast Guard and Search and Rescue Stations are advised that a station is no longer in distress, a normal call to the nearest Coast Guard Radio Station detailing the reasons for cancelling the distress call must be made.



Urgency communications

Signals

The urgency signal is PAN PAN spoken three times. It is sent before the call.

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

When used by a Maritime Mobile Station, the message, preceded by the urgency signal, may be addressed to all stations or to a specific station.

The urgency signal and message following it shall be sent on the distress, calling and answering Channel 16 (156.800 MHz).

Priority

The urgency signal has priority over all other communications - except distress.

Stations that hear only the urgency signal shall continue to listen for at least three minutes on the frequency on which the signal is heard. After that, if no urgency message has been heard, stations may resume normal service. All stations that hear the urgency signal must take care not to interfere with the urgency message which follows it. Stations that are in communication on frequency other than those used for the transmission of the urgency message, may continue normal work without interruption, provided that the urgency message is not addressed to All Stations.

Urgency call

The urgency call shall only be sent on the authority of the person in command of the station. The urgency call will comprise the following:

1. The urgency signal PAN PAN, PAN PAN, PAN PAN.
2. The words THIS IS.
3. The name and call sign of the vessel sending the urgency call spoken three times.

Examples

PAN PAN, PAN PAN, PAN PAN.
ALL STATIONS, ALL STATIONS, ALL STATIONS.
THIS IS
SEAFOX VC1234, SEAFOX VC1234, SEAFOX VC1234

PAN PAN, PAN PAN, PAN PAN
HALIFAX COAST GUARD RADIO (repeated 3 times)
THIS IS
SEAFOX VC1234, SEAFOX VC1234, SEAFOX VC1234



Urgency message

The urgency signal and call shall be followed by a message giving further information of the incident that necessitated the use of the urgency signal. The message shall be in plain language.

An urgency call can be directed to a specific station or to ALL STATIONS. This would be included after the priority call of PAN PAN, PAN PAN, PAN PAN and preceding the identification of the calling station.

When the urgency message does not contain a specific address and is acknowledged by a ship station, that station will forward the information to the appropriate authorities (Coast Guard Radio Station and/or search and rescue organizations).

Example call and message

PAN PAN, PAN PAN, PAN PAN.
ALL STATIONS, ALL STATIONS, ALL STATIONS.
THIS IS
NORTH WIND VY3344, NORTH WIND VY3344, NORTH WIND VY3344.
HAVE RUN OUT OF FUEL AND ADRIFT IN HEAVY SEAS.
REQUIRE A TOW.
MY POSITION IS 20 MILES DUE EAST OF HALIFAX.
NORTH WIND VY3344.
OVER.

PAN PAN, PAN PAN, PAN PAN.
HALIFAX COAST GUARD RADIO (repeated three times).
THIS IS
NORTH WIND VY3344, NORTH WIND VY3344, NORTH WIND VY3344.
ONE OF THE RESCUED PERSONS HAS GONE INTO DEEP SHOCK.
REQUEST HELICOPTER AIR LIFT.
MY POSITION IS 20 MILES SOUTH OF HALIFAX.
NORTH WIND VY3344.
OVER.

Example of reply

PAN PAN.
NORTH WIND VY3344, NORTH WIND VY3344, NORTH WIND VY3344.
THIS IS
HALIFAX COAST GUARD RADIO (repeated three times).
HELICOPTER HAS BEEN DISPATCHED, ESTIMATED TIME OF ARRIVAL
IS 1215Z.
HALIFAX COAST GUARD RADIO.
OVER.



Cancellation of urgency message

When the urgency signal has been used before a message addressed to ALL STATIONS, which calls for action by stations receiving the message, the station responsible for its transmission shall cancel it as soon as it knows that action is no longer necessary. The cancellation message shall be addressed to ALL STATIONS.

Example

PAN PAN
ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
NORTH WIND VY3344, NORTH WIND VY3344, NORTH WIND VY3344.
TIME: 1340Z
URGENCY ENDED
HELICOPTER HAS EVACUATED INJURED PERSON
ENROUTE TO HALIFAX, N.S.
THIS VESSEL NOW PROCEEDING NORMALLY TO HALIFAX
NORTH WIND VY3344
OUT

Safety communications

Safety signal

In radiotelephony, the safety signal is the word SÉCURITÉ spoken three times. It is sent before the call.

The safety signal indicates that the station calling is about to transmit a message concerning the safety of navigation or giving an important meteorological warning.

Priority

The safety signal has priority over all other communications except distress and urgency.

All stations hearing the safety signal shall continue to listen on the frequency on which the signal has been transmitted. They may stop listening when they are satisfied that the message is of no interest to them.

All stations that hear the safety signal must take care not to interfere with the message which follows it. No transmission shall be made that may interfere with these stations.



Safety call

The safety call shall be sent only on the authority of the person in command of the station. The safety call shall comprise the following:

1. The safety signal SÉCURITÉ, SÉCURITÉ, SÉCURITÉ.
2. Address — ALL STATIONS, ALL STATIONS, ALL STATIONS.
3. The words THIS IS.
4. The name and call sign of the vessel sending the safety call spoken three times.

Example

SÉCURITÉ, SÉCURITÉ, SÉCURITÉ
ALL STATIONS, ALL STATIONS, ALL STATIONS.
THIS IS.
SEAFOX VC1234, SEAFOX VC1234, SEAFOX VC1234.

Vessel procedures

The safety signal and call shall be sent on the international distress frequency of 156.800 MHz (Channel 16). The safety message that follows the call should be sent on a suitable working frequency (see note below). An announcement to this effect will be made at the end of the call.

Note: On VHF, a suitable working frequency is Channel 06 (156.300 MHz). It is designated intership. Most vessels equipped with VHF radiotelephone are fitted with Channel 06.

In Maritime Mobile Service, safety calls and messages shall generally be addressed to ALL STATIONS. In some cases, however, they may be addressed to a particular station (that is, a Coast Guard Radio Station).

When a safety call is addressed to a Coast Guard Radio Station, the message should follow on a Coast Guard working frequency.

Safety signals and calls may be transmitted at any time on 156.800 MHz (Channel 16).



Safety message

The safety signal and call shall be followed by a message giving further information of the incident that necessitated the use of the safety signal. The message shall be in plain language.

Meteorological and navigational warning messages that contain information on imminent danger to marine navigation must be transmitted without delay.

Example of a safety call

SÉCURITÉ, SÉCURITÉ, SÉCURITÉ.

ALL STATIONS, ALL STATIONS, ALL STATIONS.

THIS IS.

TUG CRUSADER VG2010, TUG CRUSADER VG2010, TUG CRUSADER VG2010.

SAFETY MESSAGE CONCERNING THE MERRY ISLAND AREA
TO FOLLOW CHANNEL 06.

TUG CRUSADER VG2010.

OUT.

The above call would be made on Channel 16. Tug Crusader and All Stations hearing the above safety call would then shift to Channel 06.

Example of a safety message

The following message would be made on the working channel.

SÉCURITÉ.

ALL STATIONS, ALL STATIONS, ALL STATIONS.

THIS IS.

TUG CRUSADER VG2010, TUG CRUSADER VG2010, TUG CRUSADER VG2010.
LOG BOOM ADRIFT AND BREAKING UP SIX MILES SOUTH OF MERRY ISLAND
HAZARD TO NAVIGATION.

TUG CRUSADER VG2010.

OUT.



Global maritime distress and safety system

Safety of life at sea and assistance to persons in distress are matters of great concern and importance. The present maritime safety and distress system requires that certain classes of vessels, when at sea, keep watch on international distress frequencies. Since the range of these conventional frequencies is limited, assistance for vessels in distress could only be rendered by other ships in the vicinity of an incident.

The International Maritime Organization, since its establishment in 1959 has continually worked to improve the present system of Maritime Safety and Distress. Introduction of modern communications technology, including satellites and digital selective calling, has enabled distress alerts to be transmitted and received over long ranges, regardless of meteorological and interference conditions and has led to the development and implementation of the Global Maritime Distress Safety System (GMDSS).

The basic concept of the system (shown in Figure 1) is that search and rescue authorities ashore, as well as shipping in the immediate vicinity, will be rapidly alerted to a distress incident. They can, therefore, assist in a co-ordinated search and rescue operation without undue delay. The system also provides for urgency and safety communications and for the dissemination of marine safety information, including navigational and meteorological warnings. Every ship, irrespective of its operational area, will be able to perform those communication functions considered essential for its safety and that of other ships operating in the same area.

One of the important principles used in formulating the global radio equipment carriage requirements is that every ship will be capable of performing each of the functions appropriate to its area of operation. Provisional carriage requirements for ships sailing in GMDSS areas are summarized in Table 8.

Alerting

Distress alerting is the rapid and successful reporting of a distress incident to a unit which can provide or co-ordinate assistance. This would be another ship in the vicinity of a rescue co-ordination centre (RCC). When an alert is received by an RCC, normally via a coast station or coast earth station, the RCC will relay the alert to search and rescue units and to ships in the vicinity of the distress incident. A distress alert should indicate the identification and position of the distress and, where practicable, its nature and other information which could be used for rescue operations.

A distress alert will normally be initiated by an operator using voice communication and acknowledged in a similar fashion. In addition, when a ship equipped with an Emergency Position Indicating Radio Beacon (EPIRB) sinks, the EPIRB floats free. It is then automatically activated and transmits a coded signal giving its position to an orbiting satellite.

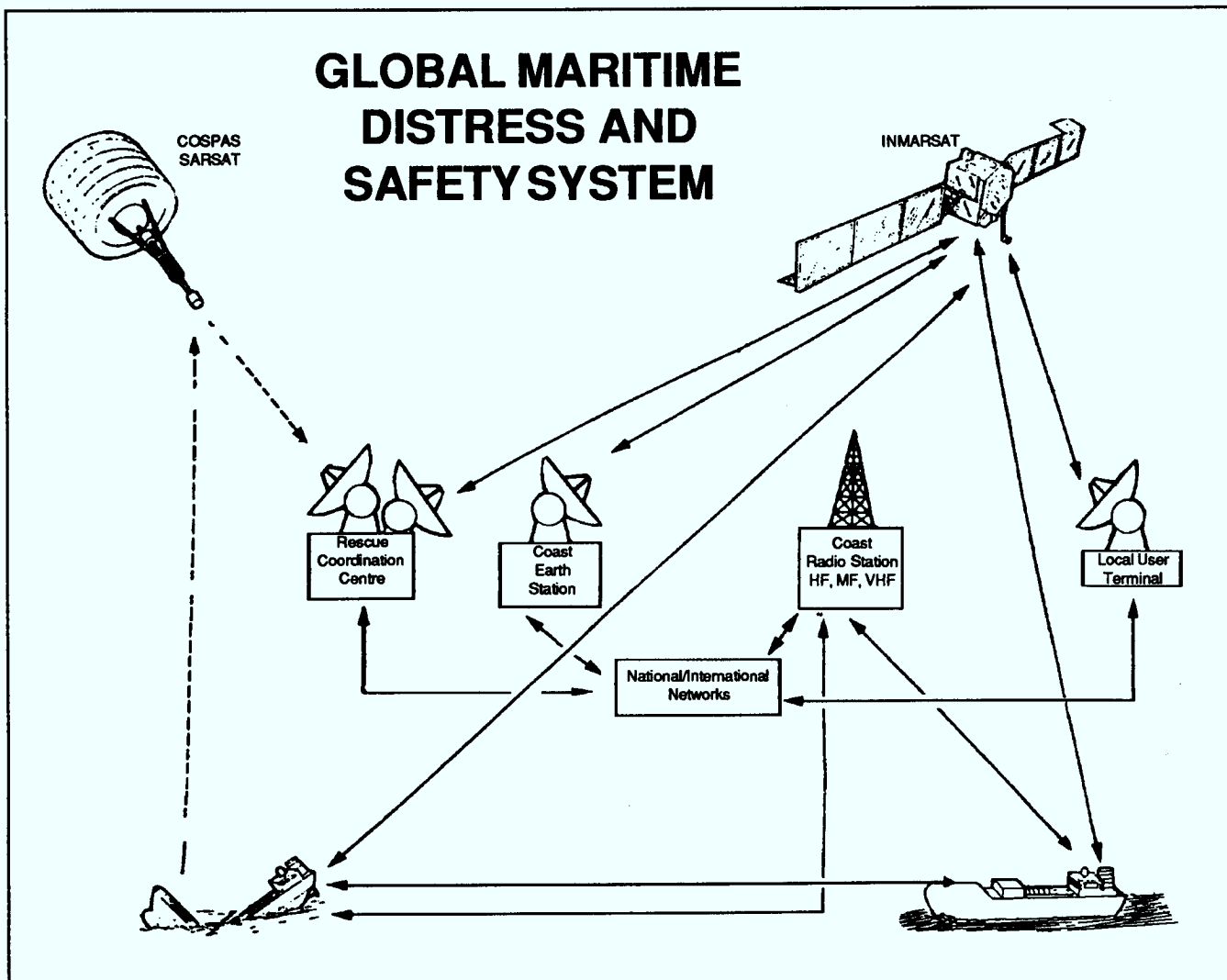




Table 7

Area of operation

Equipment to be carried

A1 –	All ships operating within the range of shore-based VHF coast stations (60-80 Km)	All ships will carry VHF equipment fitted with the VHF DSC*. Distress Alerts will be initiated by DSC or EPIRB.
A2 –	All ships operating within range of shore-based MF coast stations.	All ships will carry VHF and MF equipment fitted with the appropriate DSC*. Distress Alerts will be initiated by either DSC or by EPIRB**.
A3 –	All ships operating within the appropriate coverage area of geostationary maritime communications satellites. Ship approximately between 70 degrees N and 70 degrees S.	All ships will carry VHF, MF (fitted with the DSC's) and either HF or satellite equipment. Distress Alerts will be initiated by either DSC, HF radio, Earth Station or EPIRB.
A4 –	All remaining sea areas.	All ships will carry VHF, MF (fitted with the appropriate DSC) and HF equipment. Distress Alerts will be initiated by means of either DSC, HF radio or EPIRB.

* Digital Selective Calling

** Emergency Position Indicating Radio Beacon



Search and rescue co-ordinating communications

In general, these are the communications necessary for the co-ordination of ships and aircraft participating in a search resulting from a distress alert. They include communications between RCCs and any “on-scene commander” or “co-ordinator surface search” in the area of the distress incident. Radiotelephony will be used for distress and safety traffic.

On-scene communications

On-scene communications will normally take place in the VHF bands and on channels designated for distress and safety traffic by radiotelephony. These communications will be between the ship in distress and assisting units and will relate to the provision of assistance.

Locating signals

Locating signals are transmissions intended to facilitate the finding of a ship in distress or the location of survivors.

Sending of marine safety information

Provision has been made for ships to be advised of navigational and weather warnings and urgent information to shipping.

General radiocommunications

General radiocommunications in the global system are those between ship stations and shore-based communication networks which concern the management and operation of the ship and may have an impact on its safety. These communications may be conducted on any appropriate channel including those used for public correspondence.

Bridge-to-bridge communications

Bridge to bridge communications are intership VHF radiotelephone communications for the purpose of assisting in the safe movement of ships.



Emergency Position Indicating Radio Beacons (EPIRBs)

Marine Emergency Position Indicating Radio Beacons (EPIRBs) are designed to be carried aboard ships and survival craft for use in emergency situations. Specifically, EPIRBs are to facilitate determining the position of survivors in search and rescue operations.

The EPIRBs are packaged in a waterproof single unit container, resistant to corrosion and other environmental effects that may occur in connection with use and long-period stowage on ships at sea. After deployment, the EPIRBs are buoyant in both fresh and salt water and will float upright in calm water. All new units are equipped with a strobe light. They are finished with a highly visible yellow or orange colour and are clearly labelled with information regarding their manufacturer, class designation, model/serial number and type approval number. Concise operational and testing instructions, as well as information regarding the shelf life of the battery and its replacement date, are permanently and conspicuously displayed on the exterior of the EPIRBs in both official languages.

There are two classes of EPIRBs, Class I and Class II.

Class I EPIRBs are designed to float free and may be either automatically activated by hydrostatic pressure, or may be manually activated by a switch.

Class II EPIRBs are manually activated.

When an EPIRB is activated, either automatically or manually, it transmits a signal on 406.025 MHz to alert Search and Rescue authorities through the COSPAS-SARSAT satellite system. This system will indicate the location of the EPIRB's transmitter within approximately 5 kilometers. The unit also transmits on 121.5 and/or 243.0 MHz enabling surface vessels and aircraft engaged in the rescue to pinpoint the EPIRB's exact position.

Class I EPIRBs are located in an upper area of the ship where their deployment will not be obstructed by the superstructure. The EPIRB's transmitter can be activated manually by setting the unit's switch to the ON position. Normally, however, the switch is left in the armed position, which automatically triggers the transmitter, when the EPIRB floats free of the sinking ship.

Class II EPIRBs are designed for carriage at the ship's bridge or in its life rafts. These units are manually deployed and are activated by an external switch. There are three modes of operation. OFF, ON and TEST.

Tests on the EPIRBs should be undertaken on a scheduled basis. Care should be taken when testing the EPIRB that it does not transmit signals which may be detected by the satellite system, thereby causing false alerts.

After completion of all tests, EPIRBs should be inspected visually. They should not show any sign of corrosion due to intrusion of water, or any sign of physical damage to the transmitter module, antenna system or connectors, that could prevent the EPIRB from functioning satisfactorily.

Technical specifications as well as additional information about these devices appears in Transport Canada's publication.

"Performance Standard for 406 MHz Satellite Emergency Position Indicating Radiobeacons (EPIRB) Class I and Class II (TP4522)".



Equipment fundamentals and general electronic information

Radiotelephone controls

Radiocommunication equipment is very complex in design and in operation. The following descriptions provide a basic outline of standard face plate controls.

Channel selector

Selects the specific frequency that is to be transmitted or received.

On/off and volume control

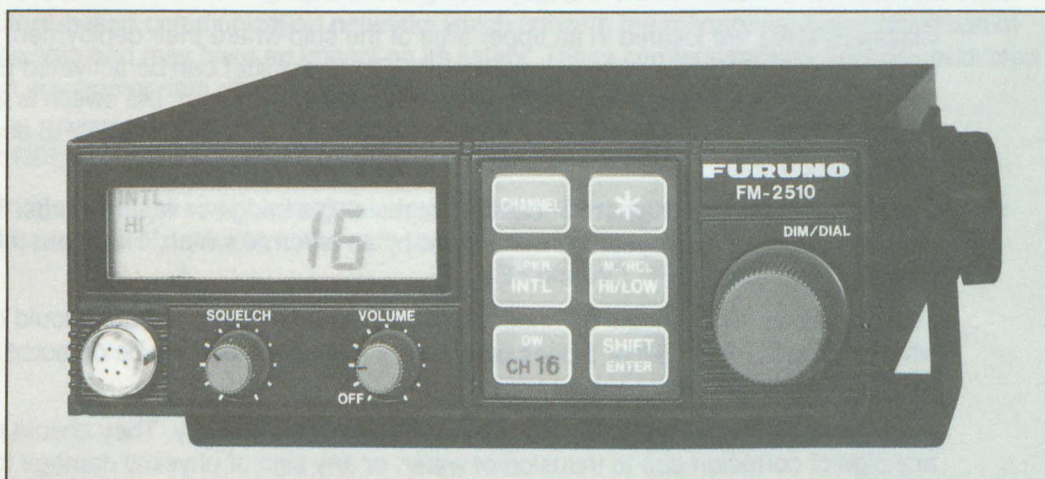
Turns the set on and controls the volume of audio from the receiver.

Squelch control

Controls the receiver squelch circuit. When operating a receiver on a fixed frequency over an extended period of time the constant background noise and undesired distant signals can be very annoying. A squelch circuit automatically cuts off undesired distant signals and background noise. The squelch circuit allows local signals to be amplified and passed through the audio circuits.

VHF—Power selection

Switches the VHF transmitter from its high output power of 25 watts to its lower power setting of 1 watt. The switch is designed so that the transmitter is set in either the 1-watt or the 25-watt position.



Control Panel



Microphone and antenna connections

Cables have various connectors which are attached to the electronic equipment. Each connector requires its own assembly technique. Care should be exercised when repairing or replacing connectors.

The main problems with connectors are shorts (when two bare wires are touching either each other or the case) or open wires (when the wire is broken inside the plastic shield or outer covering).

All connections should be tight and clean. Where connectors are exposed to the weather, they should be protected with a coating of silicone to prevent corrosion build-up and to keep water from within the outer casing.



Fuses

Electric circuits are protected against overload and short circuits by fuses, each rated for a given amperage.

Never replace a fuse with one of a higher rating. That will simply compromise or negate its protective function, and create a definite fire hazard.

Most fuses used in electronic radio equipment are of the cylinder type. This fuse has a thin strip of metal between the two metal end caps. This thin strip of metal will melt and pull apart when overloaded, shutting down the circuit.

If there is a short circuit (two wires touching), it will "blow" again, shutting down the circuit.

Fuses (or circuit breakers, if your electrical system is so equipped) act as safety valves. When something goes wrong with a circuit, the fuse for that circuit blows (or the breaker trips off), shutting down power to the circuit.

In addition to preventing overheating and possible fire, this action also warns you that there is a problem on the circuit. The fault should be corrected before the fuse is replaced.

When the fault has been cleared, replacement of the fuse is necessary. Spare fuses should be kept near the radio equipment for emergency.

Note: Always exercise caution when changing a fuse. Make sure that your hands are dry. Do not stand in a wet or damp area. If necessary, lay down dry boards and wear rubber-soled shoes.

Never replace a fuse with one of a larger amperage rating. This could cause serious overloading of the circuit by reducing the effectiveness of the "safety valve."



Tips on basic electricity

Never attempt to do any minor repairs with the power on. Make sure the equipment and / or the main power supply is disconnected.

When performing minor repairs, always know where the main electrical shut-off is located.

Always analyze and familiarize yourself with the particular repair job that you are going to attempt before you proceed with your task.

Always remember – water and electricity do not mix. Never put yourself in a position where you are handling electricity with wet hands or standing in a damp / wet place.

Extreme caution should be exercised with respect to tool usage. Do not poke screwdrivers or pliers inside equipment.

Note: Have respect for the power of electricity. That is the best way to insure your success in working with it and in keeping it working for you.



Lead acid storage batteries

Care and maintenance

Lead acid storage batteries are used extensively as a source of primary and / or emergency power for radiotelephone equipment. It is important that they be fully charged at all times.

The batteries should be kept in a suitable location designed to protect the batteries from the elements.

They should be readily accessible for routine, as well as emergency, maintenance.

This compartment should be ventilated, and if installed within the vessel, the battery compartment should be vented to the outdoors.

In order to ensure that maximum energy will be obtained from storage batteries, the recommended procedures for care and maintenance are listed below:

Electrolyte (battery acid) should be kept about 1/4 inch above plates by adding pure (distilled) water when needed.

Batteries should be frequently checked. Use a hydrometer and voltmeter to determine state of charge. The typical specific gravity for a fully charged cell is 1.250-1.280. For a fully discharged cell it is 1.200 or less.

Keep exterior dry and terminals clean and coated with vaseline or other suitable lubricant to prevent corrosion on the posts.

Keep all connections tight and clean.

Daily voltage readings should be taken. The full load / no load voltage readings should not differ by more than five per cent (5%). For example, in the battery bank, if the voltage with no load is 24 volts, then the voltage under full load should be no less than 22.80 volts.

Hazards

The following precautions should be observed when storage batteries are being charged or discharged, whether in large banks or singly:

Charge or discharge in a well ventilated space to dissipate the hydrogen gas which develops when the batteries are in use.

Keep open flames and sparks away from the batteries.

If the batteries are equipped with gassing caps, remove the battery caps during charging to allow the hydrogen gas to escape.

Do not make or break any electrical connections while the batteries are charging or gassing. Making or breaking electrical connections will produce sparks! ***The hydrogen gas produced by batteries is extremely explosive.*** Failure to observe the above precautions may cause the gas to ignite, creating an explosion with potentially disastrous results.



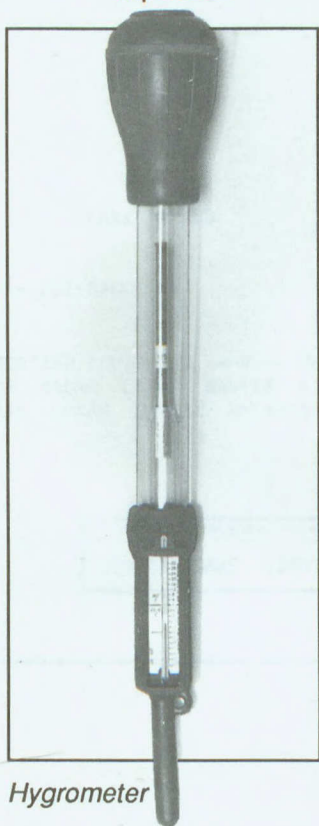
High charge rate

A high charge rate occurs when a battery is charged very quickly over a short period of time. Most battery chargers have two settings, trickle charge and full charge. A trickle charge is used to keep a battery at full charge as it is being used. It is a slow continuous charge mode. Full charge is used to charge the battery from a low state of charge to full or nearly full charge in a short time. It should be used very conservatively.

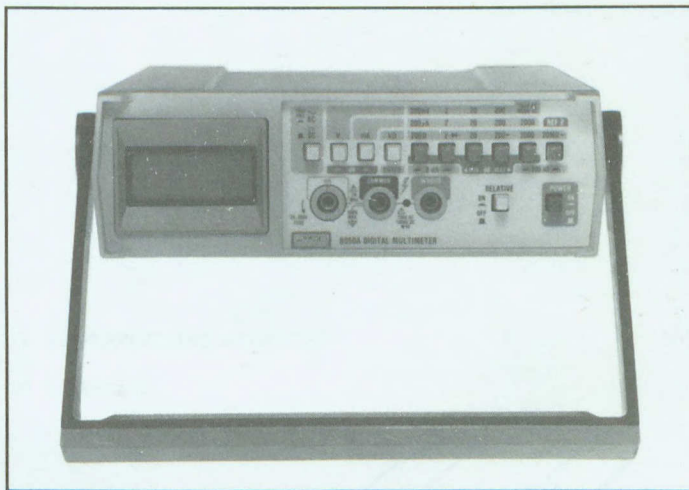
High discharge rate

A high discharge rate occurs when a battery is discharged from a fully or nearly fully charged state over a very short time period. A prime example would be a short between the positive and negative post or when the battery is under heavy load.

Note: Both high charge and discharge rates invite potential disaster. The battery under either of the above conditions produces an **abundant amount of hydrogen gas and a significant heat buildup**. The smallest spark could initiate an explosion.



Hygrometer



Voltmeter



Appendix 1

List of Department of Communications District Office Locations

District office locations are listed in your telephone directory. District offices can be found in Saint John, N.B., Halifax, N.S., Charlottetown, P.E.I., St. John's, Nfld., Quebec, Que., Sherbrooke, Que., Montreal, Que., Chicoutimi, Que., Rimouski, Que., Kitchener, Ont., Toronto, Ont., Ottawa, Ont., Hamilton, Ont., London, Ont., Belleville, Ont., Sault Ste. Marie, Ont., Winnipeg, Man., Saskatoon, Sask., Regina, Sask., Edmonton, Alta., Calgary, Alta., Grande Prairie, Alta., Yellowknife, N.W.T., Victoria, B.C., Kelowna, B.C., Prince Rupert, B.C., Vancouver, B.C., Langley, B.C., Cranbrook, B.C., Prince George, B.C., and Whitehorse, Y.T.



Appendix 2



Government of Canada
Department of Communications

RADIO STATION LICENCE

Issued in accordance with the Radiocommunication Act
and Regulations made thereunder

THIS LICENCE SHALL BE RETAINED AT THE STATION

Gouvernement du Canada
Ministère des Communications

LICENCE DE STATION RADIO

Délivrée en conformité de la Loi sur la radiocommunication
et de ses règlements d'exécution

LA PRÉSENTE LICENCE DOIT ÊTRE CONSERVÉE À LA STATION

CLASS OF LICENCE/CLASSE DE LICENCE SHIP/ NAVIRE	THIS LICENCE SHALL CONTINUE IN FORCE UNTIL CETTE LICENCE RESTERA EN VIGUEUR JUSQU'AU MARCH 31, 1991 31 MARS 1991	COMPANY CODE CODE DE LA CIE 5600-----	LICENCE NUMBER NUMÉRO DE LA LICENCE 700-000000
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ISSUED TO /
OBLIVREF A

LARK ISLAND CO. LTD.
MAIN STREET
HART HARBOUR, NEW BRUNSWICK
EOZ OZO

SERVICE CATEGORY/CATÉGORIE DE SERVICE

MARITIME MOBILE - A
MOBILE MARITIME

TRANSMITTING FREQUENCIES FRÉQUENCES D'ÉMISSION	NECESSARY BANDWIDTH & CLASS OF EMISSION LARGEUR DE BANDE NÉCESSAIRE ET CLASSE D'ÉMISSION	POWER PUISSANCE KW	AUTHORIZED COMMUNICATIONS/CONDITIONS COMMUNICATIONS AUTORISÉES/CONDITIONS	RECEIVING FREQUENCIES FRÉQUENCES DE RÉCEPTION	CHANNELS/VOIES TX EM RX REC
---	---	--------------------------	--	--	--------------------------------

NAME OF VESSEL LARK ISLAND
NOM DU NAVIRE

POWER IN KW-----PUISSANCE KW
VHF .025

ADDITIONAL AUTHORIZED EQUIPMENT ----- MATERIEL SUPPLEMENTAIRE AUTORISÉ
DIRECTION FINDER RADAR LORAN NAVTEX LIFEBOAT
GONIOMETRE RARAR LORAN NAVTEX EMBARCATION DE SAUVETAGE

CALL SIGN INDICATIF D'APPEL X01234
--

DATE OF ISSUE/DATE DE DÉLIVRANCE MARCH 1 MARS 1990

MARCEL MASSE

MINISTER OF COMMUNICATIONS/MINISTRE DES COMMUNICATIONS

SEE REVERSE SIDE-VOIR AU VERSO



Government of Canada
Department of Communications

RADIO STATION LICENCE

Issued in accordance with the Radiocommunication Act
and Regulations made thereunder

THIS LICENCE SHALL BE RETAINED AT THE STATION

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Ministère des Communications

LICENCE DE STATION RADIO

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LA PRÉSENTE LICENCE DOIT ÊTRE CONSERVÉE À LA STATION

CLASS OF LICENCE/CLASSE DE LICENCE	THIS LICENCE SHALL CONTINUE IN FORCE UNTIL CETTE LICENCE RESTERA EN VIGUEUR JUSQU'AU	MARCH 31, 1991 31 mars 1991	COMPANY CODE CODE DE LA CIE	LICENCE NUMBER NUMÉRO DE LA LICENCE
SHIP/NAVIRE			5600-----	700-000000

ISSUED TO
DELIVRÉE À

LARK ISLAND CO. LTD.
MAIN STREET
HART HARBOUR, NEW BRUNSWICK
EOZ 0Z0

SERVICE CATEGORY/CATÉGORIE DE SERVICE

TRANSMITTING FREQUENCIES FRÉQUENCES D'ÉMISSION	NECESSARY BANDWIDTH CLASS OF EMISSION LAISEUR DE BANDE NÉCESSAIRE ET CLASSE D'ÉMISSION	POWER PUISSANCE kW	AUTHORIZED COMMUNICATIONS/CONDITIONS COMMUNICATIONS AUTORISÉES/CONDITIONS	RECEIVING FREQUENCIES FRÉQUENCES DE RÉCEPTION	CHANNELS-VOIES
					TX-EM RX-RC

APPENDIX P

*** PAGE 2

156.275 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	65A 156.275 MHZ	1)
156.300 MHZ	16KOF3EJN	INTERSHIP-SAFETY	06 156.300 MHZ	2)3)
156.325 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	66A 156.325 MHZ	1)
156.350 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	07A 156.350 MHZ	2)
156.375 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	67 156.375 MHZ	2)3)
156.400 MHZ	16KOF3EJN	INTERSHIP	08 156.400 MHZ	2)
156.425 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	68 156.425 MHZ	4)
156.450 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	09 156.450 MHZ	2)3)5)
156.475 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	69 156.475 MHZ	2)3)
156.500 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	10 156.500 MHZ	2)3)5)
156.525 MHZ	16KOF3EJN	INTERSHIP	70 156.525 MHZ	3)
156.550 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	11 156.550 MHZ	1)2)3)5)6)
156.575 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	71 156.575 MHZ	4)
156.600 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	12 156.600 MHZ	1)2)3)6)
156.625 MHZ	16KOF3EJN	INTERSHIP	72 156.625 MHZ	2)3)
156.650 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	13 156.650 MHZ	2)3)6)
156.675 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	73 156.675 MHZ	2)3)
156.700 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	14 156.700 MHZ	1)2)3)6)
156.725 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	74 156.725 MHZ	2)3)6)
156.800 MHZ	16KOF3EJN	DISTRESS/SAFETY/CALLING	16 156.800 MHZ	2)3)
156.850 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	17 156.850 MHZ	1)2)3)7)

***SEE/VOIR PAGE 3

CALL SIGN INDICATIF D'APPEL

DATE OF ISSUE/DATE DE DÉLIVRANCE

MARCEL MASSE
MINISTER OF COMMUNICATIONS/MINISTRE DES COMMUNICATIONS

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Government of Canada
Department of Communications

RADIO STATION LICENCE

Issued in accordance with the Radiocommunication Act
and Regulations made thereunder

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Gouvernement du Canada
Ministère des Communications

LICENCE DE STATION RADIO

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et de ses règlements d'exécution

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CLASS OF LICENCE/CLASSE DE LICENCE	THIS LICENCE SHALL CONTINUE IN FORCE UNTIL CETTE LICENCE RESTERA EN VIGUEUR JUSQU'AU	MARCH 31, 1991 31 MARS 1991	COMPANY CODE CODE DE LA CIE	LICENCE NUMBER NUMÉRO DE LA LICENCE
SHIP/NAVIRE			5600-----	700-000000

ISSUED TO
DÉLIVRÉE À

LARK ISLAND CO. LTD.
MAIN STREET
HART HARBOR, NEW BRUNSWICK
E0Z 0Z0

SERVICE CATEGORY/CATÉGORIE DE SERVICE

TRANSMITTING FREQUENCIES FRÉQUENCES D'ÉMISSION	NECESSARY BANDWIDTH & CLASS OF EMISSION LARGUEUR DE BANDE NÉCESSAIRE ET CLASSE D'ÉMISSION	POWER PUISSANCE kW	AUTHORIZED COMMUNICATIONS/CONDITIONS COMMUNICATIONS AUTORISÉES/CONDITIONS	RECEIVING FREQUENCIES FRÉQUENCES DE RÉCEPTION	CHANNELS VOIES
					TX-EM RX-RC

APPENDIX P

156.875 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	77	156.875 MHZ	1)2)3)7)
156.900 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	18A	156.900 MHZ	2)
156.925 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	78A	156.925 MHZ	2)
156.950 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	19A	156.950 MHZ	8)
156.975 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	79A	156.975 MHZ	2)
157.025 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	80A	157.025 MHZ	2)
157.075 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	81A	157.075 MHZ	9)
157.100 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	22A	157.100 MHZ	2)3)10)
157.125 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	82A	157.125 MHZ	8)
157.175 MHZ	16KOF3EJN	INTERSHIP-SHIP/SHORE	83A	157.175 MHZ	8)
157.200 MHZ	16KOF3EJN	SHIP/SHORE-PUBLIC CORRESP.	24	161.800 MHZ	
157.275 MHZ	16KOF3EJN	SHIP/SHORE-PUBLIC CORRESP.	85	161.875 MHZ	
157.300 MHZ	16KOF3EJN	SHIP/SHORE-PUBLIC CORRESP.	26	161.900 MHZ	
157.350 MHZ	16KOF3EJN	SHIP/SHORE-PUBLIC CORRESP.	27	161.950 MHZ	
157.425 MHZ	16KOF3EJN	SHIP/SHORE-PUBLIC CORRESP.	88	162.025 MHZ	

PORT OPERATIONS. 2) COMMERCIAL. 3) NON-COMMERCIAL. 4) NON-COMMERCIAL, RECREATIONAL CRAFT.
SHIP MOVEMENT (ST.LAWRENCE RV). 6) SHIP MOVEMENT SVC. 7) ERP NOT TO EXCEED 1 WATT. 8) COAST GUARD USE.
9) COAST GUARD (ANTI-POLLUTION). 10) COAST GUARD (COMMUNICATION BETWEEN COAST AND NON-COAST GUARD STNS).
SHIP STATIONS ARE AUTHORIZED TO USE ANY FREQUENCY AS DIRECTED BY FOREIGN COAST STATIONS FOR MARITIME
MOBILE SERVICE COMMUNICATIONS IN THE FREQUENCY BAND 156 TO 174 MHZ.
THIS STATION MUST BE OPERATED BY A PERSON HOLDING A CERTIFICATE IN RADIO APPROPRIATE FOR THE TYPE
OF SERVICE. --"LATEST REVISION DATE FEBRUARY 4, 1982"

CALL SIGN INDICATIF D'APPEL

DATE OF ISSUE/DATE DE DÉLIVRANCE

MARCEL MASSE

MINISTER OF COMMUNICATIONS/MINISTRE DES COMMUNICATIONS

SEE REVERSE SIDE - VOIR AU VERSO



This licence authorizes the licensee to install, operate or possess radio apparatus as described in the approved application, in accordance with specific terms or conditions and applicable provisions of the Radiocommunication Act and its regulations. Except as provided in the regulations, no change in the apparatus or operations shall be made without the authority of the Minister of Communications, and the licensee shall notify the Department in writing upon a change of address.

The Department may, at a future date, require the licensee to install filters, tone coding devices, reduce the effective radiated power and/or antenna height as appropriate.

Service Category indicates the categories of service the station is authorized to perform.

In many cases licence fees are related to the number of transmit and receive channels. A code, used in the "channel" column, indicates the number of equivalent voice channels as given in the following table:

Channel Code	1 to 9	A	B	C	D	E	F	G	Other Letters H, I, J, etc.
Equivalent No. of Voice Channels	1 to 9	10 to 24	25 to 60	61 to 120	121 to 300	301 to 600	601 to 960	961 to 1200	Measured in units of 300 channels

For further information regarding your radio licence please contact your nearest Department of Communications District Office. Copies of the Radiocommunication Act and Radio Regulations may be purchased from Printing and Publishing, Supply & Services Canada, Ottawa, Ontario, Canada K1A 0S9.

Cette licence autorise le titulaire à installer, à faire fonctionner ou à posséder l'appareil radio décrit sur la demande approuvée, aux conditions précisées et conformément aux dispositions pertinentes de la Loi sur la radiocommunication et ses règlements d'exécution. À moins d'indication contraire dans les règlements, aucun changement ne doit être apporté à l'appareil ni au mode d'exploitation sans l'autorisation du ministre des Communications et le titulaire de la licence doit aviser par écrit le Ministère de tout changement d'adresse.

Le Ministère peut obliger ultérieurement le titulaire de la présente à installer des filtres et des codeurs de tonalité, ainsi qu'à réduire la puissance apparente rayonnée et (ou) la hauteur de l'antenne, selon le cas.

La partie "Catégorie de service" indique les catégories de service que la station est autorisée à fournir.

Dans plusieurs cas, les droits de licence sont en fonction du nombre de voies de transmission et de réception. Un code dans la colonne "voie" indique le nombre équivalent de voies téléphoniques comme suit:

Code de voie	1 à 9	A	B	C	D	E	F	G	Autres lettres H, I, J, etc.
Nombre équivalent de voies téléphoniques	1 à 9	10 à 24	25 à 60	61 à 120	121 à 300	301 à 600	601 à 960	961 à 1200	Mesuré par unité de 300 voies

Pour de plus amples renseignements, prière de communiquer avec le bureau de district du ministère des Communications le plus rapproché. On peut se procurer un exemplaire de la Loi sur la radiocommunication et du Règlement général sur la radio en s'adressant à l'Imprimerie du gouvernement canadien, ministère des Approvisionnements et Services, Ottawa (Ontario), Canada. K1A 0S9.

DATE DUE[illegible]

