

Spectrum Management

Radiocommunication Information Circular

Study Guide for the Radiotelephone Operator's Restricted Certificate (Land)

Radiocommunication Information Circulars are issued for the guidance of those engaged in radiocommunications in Canada. The information contained in these circulars is subject to change without notice. It is therefore suggested that interested persons consult the nearest district office of Industry Canada for additional details. While every reasonable effort has been made to ensure accuracy, no warranty is expressed or implied. As well, these circulars have no status in law. Additional copies of this or other circulars in the series are available from any office of the Department.

Comments and suggestions may be directed to the following address:

Industry Canada
Radio Regulatory Branch
300 Slater Street
Ottawa, Ontario
K1A 0C8

Attention: DOSP

General Information

Application

Application to be examined for the Radiotelephone Operator's Restricted Certificate (Land) should be made to the nearest office of Industry Canada listed in **Appendix D**.

Candidate Requirements

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

- is capable of operating radiotelephone equipment;
- possesses a general knowledge of radiotelephone operation procedures, the international regulations applicable to radiotelephone communications between stations in the land service, and specifically those regulations relating to the safety of life;
- possesses a general knowledge of the *Radiocommunication Act* and the regulations made thereunder.

Eligibility

There are no nationality or age restrictions as to who may take the examination for, or hold a Radiotelephone Operator's Restricted Certificate (Land). Candidates must attest that they do not have a disability that would impair their ability to operate a radio station safely.

Documentation

Identification must be presented at the examination. A driver's licence, a birth certificate, a baptismal certificate, a Certificate of Canadian Citizenship, or a Canadian Immigration Identification Card will all be accepted as proof of identity.

Regulations

Radio Operator's Certificate Requirements

The holder of a Radiotelephone Operator's Restricted Certificate (Land) may act as a radiotelephone operator on any land or mobile station (except a land station performing an aeronautical mobile service or a maritime mobile service, or a mobile station installed in an aircraft or on board a ship). The radiotelephone equipment at such stations shall be of a type that requires only simple external switching with a power output not exceeding 250 watts (peak envelope power) and where all frequency-determining elements are preset within the transceiver.

Radiotelephone operator's restricted certificates are issued for life and no revalidation is required. Please contact the nearest district office if your certificate is lost or requires replacement.

Priorities of Communications - Land Service

The order of priority for transmission of messages in the land service is:

1. Distress communications
2. Urgency communications
3. Safety communications
4. All other communications

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, to properly authorized officials of the Government of Canada, to a competent legal tribunal, or to an operator of a telecommunications system, as is necessary to forward or deliver the communication. These 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.

Any person who violates the secrecy of communications is liable, on summary conviction, in the case of an individual, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, to a fine not exceeding twenty-five thousand dollars.

Control of Communications

In communications between a base station and a mobile station, the base station has control of communications, and the mobile station shall comply with all instructions given by the base station in matters relating to the order and time of transmission, the choice of frequency and to the duration and suspension of work. This does not apply in the cases of distress or urgency communications, where the control of the communications lies with the station initiating the priority call.

Superfluous Communications and Interference

Communications should be restricted to those necessary for the transmission of authorized messages. Profane or obscene language is strictly prohibited.

Any person who violates the regulations pertaining to unauthorized communications or profane language is liable, on summary conviction, in the case of an individual, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, to a fine not exceeding twenty-five thousand dollars.

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 other priority calls or messages.

Any person who, without lawful excuse, interferes with or obstructs any radiocommunication is liable, on summary conviction, in the case of an individual, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, to a fine not exceeding twenty-five thousand dollars.

False Distress Signals

Any person who knowingly sends, transmits, or causes to be sent or transmitted any false or fraudulent distress signal, message, call or radiogram of any kind is guilty of an offence and is liable, on summary conviction, in the case of an individual, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, to a fine not exceeding twenty-five thousand dollars.

Operating Procedure

Speech Transmission Techniques

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

When using radio, the operator should speak all words plainly and each word clearly to prevent words from running together. Avoid any tendency to shout, to accent syllables, or to talk too rapidly. The following points should be kept in mind when using radio:

- 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. In separating words so that they are not run together, avoid the introduction of unnecessary sounds such as "er" and "um" between words.

Time and Date

The twenty-four hour clock system should be used to express time in the Land Service. Time 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.

Examples:	12:45 a.m.....	is expressed as 0045
	12:00 noon	is expressed as 1200
	11:45 p.m.....	is expressed as 2345
	12:00 midnight.....	is expressed as 2400 or 0000
	1:30 a.m.....	is expressed as 0130
	1:45 p.m.....	is expressed as 1345
	4:30 p.m.....	is expressed as 1630

Time is usually referenced to one standard time zone, Co-ordinated Universal Time (UTC) (formerly referred to as Greenwich Mean Time (GMT)) to avoid confusion between different time zones. The letter Z is the accepted abbreviation for UTC. When operations are conducted solely in one time zone, standard or local time may be used.

Where the date, as well as the time of day, is required, a six-figure group should be used. The first two figures indicate the day of the month and the following four figures indicate the time.

Examples: Noon (EST) of the 16th day of the month is expressed as161200 E
2:45 a.m. (PST) of the 24th day of the month is expressed as240245 P

Phonetic Alphabet

The phonetic alphabet is used to avoid confusion when transmitting difficult or unusual words. The following internationally recognized alphabet should be learned thoroughly so that it is readily available whenever isolated letters or groups of letters are pronounced separately, or when communication is difficult. Call signs should also be spelled phonetically.

The ITU (International Telecommunication Union) phonetic alphabet is:

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 in bold.

Numbers are pronounced as follows:

0 - ZE-RO	5 - FIFE
1 - WUN	6 - SIX
2 - TOO	7 - SEV-en
3 - TREE	8 - AIT
4 - FOW-er	9 - NIN-er

Transmission of Numbers

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".

Examples:	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 shall be transmitted as above, with the decimal point indicated by the word "decimal".

Example:	121.5 becomes	one two one decimal five
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Monetary denominations, when transmitted with groups of digits, should be transmitted in the sequence in which they are written.

Examples:	\$17.25 becomes	dollars one seven decimal two five
	.75 becomes	seven five cents

Time: Universal Time Co-ordinated (UTC)

Examples:	0920 Z	Zero nine two zero zulu
	09	Nine minutes past the hour

Procedural Words and Phrases

While it is not practical to set down precise phraseology for all radiotelephone procedures, slang expressions such as "OK", "REPEAT", "TEN-FOUR", "OVER AND OUT", "BREAKER BREAKER", "COME IN PLEASE", etc., should not be used. **Appendix A** contains a list of words and phrases that should be used where applicable.

Call Signs

A distinctive call sign, consisting of a group of letters and numbers, is assigned to base stations for identification purposes and should be used at least when initial contact is being established and again when the communication is concluded. When two or more users share a common frequency, it is essential that correct identification is used at all times to ensure positive identification of the users. In cases of mobile stations and hand-held units, some readily recognizable identifier such as fleet car or truck number should be used or, in the case of railroad operations, train number or unit identification.

Examples:	Land Stations	CJM702	XNM45
	Mobile Stations	Car five one	Expressway one four two

Radiotelephone Calling Procedures

Before transmitting, the operator of every station shall listen for a period long enough to satisfy himself/herself that the transmission will not cause harmful interference to communications already in progress. If such interference seems likely, the operator should wait for the first break in the transmission. A station having distress, urgency or safety communications to transmit is entitled to interrupt at any time a transmission of lower priority that is in progress.

The identifier of the station being called is **ALWAYS** spoken first, followed by the words "THIS IS" and your own station identifier.

Single Station Call

When a station wishes to establish communication with a specific station, it shall transmit the following items in the order indicated:

1. Call sign of the station called (not more than three times).
2. The words "THIS IS".
3. Call sign of the station calling (not more than three times).
4. Invitation to reply.

Examples:	FREIGHTWAY TWO FIVE ZERO THIS IS FREIGHTWAY MONTREAL XMT FIVE NINE OVER
	VYD FIVE SEVEN LA RONGE THIS IS VXX ONE TWO FIVE PRINCE ALBERT OVER

Multiple Station Call

If it is desired to call more than one station simultaneously, the call signs of the stations may be transmitted in any convenient sequence preceding the words "THIS IS".

Examples: RED LINE CABS FIVE TWO, ONE ZERO, THREE SIX
THIS IS
XOV FOUR EIGHT TWO
OVER

XLR TWO NINE, XLR THREE ZERO, XMN THREE EIGHT
THIS IS
XOV FOUR EIGHT TWO
OVER

General Call

When a mobile wishes to establish communication with any station within range, or within a certain area, the call should be made as follows:

1. General call (not more than three times).
2. The words "THIS IS".
3. Call sign of the station calling (not more than three times).
4. Invitation to reply.

Examples: ALL STATIONS (or ALL STATIONS IN THE VICINITY OF FOURTH
STREET AND SECOND AVENUE)
THIS IS
XJB SIX TWO
OVER

ALL STATIONS (or ALL ONTARIO FORESTRY STATIONS)
THIS IS
XLN ONE EIGHT TWO
OVER

When a station wishes to broadcast information to all stations that are within the coverage area of the base station and does not require an acknowledgement or a reply, it proceeds with the message immediately after giving its call sign and ends the transmission with its call sign and the word "OUT".

Replying

An operator hearing a call directed to his/her station shall reply as soon as possible and advise the calling station to proceed with the message using the words "GO AHEAD".

Examples: FREIGHTWAY MONTREAL XMT FIVE NINE
 THIS IS
 FREIGHTWAY TWO FIVE ZERO
 GO AHEAD

 VXX ONE FOUR NINE
 THIS IS
 VYD TWO FIVE ZERO
 GO AHEAD

If the station is not ready to receive the message, the operator should reply to the call and advise the calling station to "STAND BY", followed by the anticipated number of minutes of delay.

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

Failure of Communications

When contact with a base station fails on the selected frequency, the mobile should try to establish contact on another frequency (if available) appropriate to the area in which it is operating.

When normal communications from a base station to a mobile cannot be established, the base station should try to relay the message via any other station which may be able to establish communications.

Corrections and Repetitions

When an error has been made in transmission, the word "CORRECTION" should be spoken, and the last correct word or phrase repeated, and the correct version transmitted. Transmissions or items of transmissions should not be repeated unless requested by the receiving operator.

If the receiving station desires repetition of a message, the operator should request it by saying the words "SAY AGAIN". If repetition of only a portion of a message is required, the receiving operator should use the following appropriate phraseology:

1. SAY AGAIN ALL BEFORE (first word satisfactorily received),
2. SAY AGAIN (word before missing portion) to (word after missing portion), or
3. SAY AGAIN ALL AFTER (last word satisfactorily received).

Requests for repetition of specific items of a message should be made using the words "SAY AGAIN" followed by the identification of the portion of the message desired.

Examples: SAY AGAIN NAME OF STREET
 SAY AGAIN HOUSE NUMBER

Message Handling Procedures

When transmitting a message, the operator should:

- a) deliver the radio message clearly and concisely using standard phraseology whenever practical;
- b) plan the content of the message before transmitting;
- c) listen briefly before transmitting to avoid interference with other transmissions.

The message generally consists of four parts:

- a) The call-up
- b) The reply
- c) The message
- d) The acknowledgement or ending

Examples:

Call-up: XOV FOUR ONE NINE YELLOWKNIFE
 THIS IS
 XOV SIX ONE EIGHT
 OVER

Reply: XOV SIX ONE EIGHT
 THIS IS
 XOV FOUR ONE NINE
 GO AHEAD
 OVER

Message: XOV FOUR ONE NINE YELLOWKNIFE
 THIS IS
 XOV SIX ONE EIGHT
 WE WILL HAVE FOUR PASSENGERS ON TONIGHT'S FLIGHT
 AND A BAG OF MAIL
 OVER

Acknowledgement: XOV SIX ONE EIGHT
 THIS IS
 XOV FOUR ONE NINE
 ROGER

Signal (or Radio) Checks

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

- 1) Call another station and request a radio check.
- 2) The signal check consists of "SIGNAL CHECK 1, 2, 3, 4, 5. HOW DO YOU READ ME? OVER."
- 3) Your station identification (call sign) should be transmitted during such test transmissions.

- 4) Signal checks should not last more than 10 seconds.
- 5) When replying or receiving a reply to a signal check, the following readability scale should be used:
 1. Bad (unreadable)
 2. Poor (readable now and then)
 3. Fair (readable but with difficulty)
 4. Good (readable)
 5. Excellent (perfectly readable)

Examples: CYM ONE FOUR
THIS IS
CYT SIX FOUR NINE
REQUEST SIGNAL CHECK

CYT SIX FOUR NINE
THIS IS
CYM ONE FOUR
READING YOU STRENGTH FIVE
OVER

Emergency Communications

Emergency Conditions

Distress, urgency and safety procedures are laid down by international regulations and are designed primarily for aeronautical and maritime services. Use of these types of communications in the land service is very rare.

Since detailed procedures for distress, urgency and safety communications have not been developed for use in the land-mobile service, a brief outline of the procedures used in the safety services is shown in the following sections.

Distress Communications

Distress communications should be conducted in accordance with the procedures outlined in this section. These procedures shall 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 to obtain assistance.

Frequencies to Be Used

The first transmission of the distress call and message by a station should be made on the frequency in use at the time. If the station is unable to establish communications on the frequency in use, the distress call and message should be repeated on any other frequency available in an effort to establish communications with any other station.

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 an aircraft, ship or other vehicle is threatened by grave and imminent danger and requires immediate assistance.

Distress Call

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

- 1) the distress signal "MAYDAY" spoken three times;
- 2) the words "THIS IS";
- 3) the call sign of the station in distress spoken three times.

Example: MAYDAY, MAYDAY, MAYDAY
 THIS IS
 PIPER FOXTROT X-RAY CHARLIE CHARLIE

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

Priority of Distress

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 continue to listen on the frequency used for the distress call.

Control of Distress Traffic

The control of distress traffic is the responsibility of the station 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 an aeronautical station which, normally, has a very efficient interface with air traffic control (ATC) and all search and rescue (SAR) organizations.

Distress Message

The distress message shall follow the distress call as soon as possible.

The distress message should include as many as possible of the following elements:

- 1) the distress signal "MAYDAY";
- 2) the call sign of the station in distress (once);
- 3) the nature of the distress condition and the kind of assistance required (i.e., what has happened);

- 4) the intentions of the person in command;
- 5) the particulars of its position (airspeed, altitude, heading);
- 6) the number of persons on board and injuries (if applicable);
- 7) any other information that might facilitate the rescue;
- 8) the call sign of the station in distress.

Example: MAYDAY
PIPER FOXTROT X-RAY QUEBEC QUEBEC
POSITION: 20 MILES EAST OF WINNIPEG
ALTITUDE: 1500 FEET
AIRSPEED: 125 KNOTS
HEADING: 270 T
STRUCK BY LIGHTNING
DITCHING AIRCRAFT
ONE PERSON ON BOARD
PIPER FOXTROT X-RAY QUEBEC QUEBEC

Note: If the aircraft can transmit the distress message immediately after the distress call, then items 1 and 2 may be omitted from the message.

Repetition of a Distress Message

The distress message shall be repeated at intervals by the station 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 receiving the message to reply.

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

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

Action by Station in Distress

When a station 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 locator transmitter - ELT) if provided and when appropriate.

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 land, aeronautical, or maritime mobile service that has knowledge of distress traffic and cannot itself assist the station in distress shall follow such traffic until it is evident that assistance is being provided. All stations that are aware of distress traffic, and that are not taking part in it, are forbidden to transmit on the frequencies being used for distress traffic until a message is received indicating that regular transmissions may be resumed (cancellation of distress).

Acknowledgement of Receipt of a Distress Message

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

- 1) the call sign of the station in distress;
- 2) the words "THIS IS";
- 3) the call sign of the station acknowledging receipt;
- 4) the words "RECEIVED MAYDAY".

Example: PIPER FOXTROT X-RAY QUEBEC QUEBEC
THIS IS
WINNIPEG TOWER
RECEIVED MAYDAY

Relay of a Distress Message

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

- 1) the signal "MAYDAY RELAY" (spoken three times);
- 2) the words "THIS IS";
- 3) the 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 its location, the nature of distress, the number of persons on board, etc.

Example: MAYDAY RELAY, MAYDAY RELAY, MAYDAY RELAY
THIS IS
CESSNA NOVEMBER JULIETT INDIA
MAYDAY
PIPER FOXTROT X-RAY QUEBEC QUEBEC
POSITION: 20 MILES EAST OF WINNIPEG

ALTITUDE: 1500 FEET
AIRSPEED: 125 KNOTS
HEADING: 270 T
STRUCK BY LIGHTNING
DITCHING AIRCRAFT
ONE PERSON ON BOARD
PIPER FOXTROT X-RAY QUEBEC QUEBEC

Action by Other Stations

Action by Stations Other than the Station in Distress

An aircraft station that is not 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 that intervenes believes that further help is necessary.

When a distress message is received and it is known that the aircraft 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.

Action by Stations Acknowledging Receipt of a Distress Message

- 1) Forward information immediately to the appropriate 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 that may be of assistance, etc.
- 4) Cease all transmissions that 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 and request 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.

Imposition of Silence

The station in distress, or the station in control of distress traffic, may impose silence on all stations in the area or on any station that interferes with the distress traffic.

The station in distress, or the station in control, shall use the expression "STOP TRANSMITTING - DISTRESS" or the international expression "SILENCE MAYDAY" or "SEELONCE MAYDAY".

Other stations imposing silence during a distress situation shall use the expression "STOP TRANSMITTING - DISTRESS" or use the international expression "SILENCE DISTRESS" or "SEELONCE DISTRESS".

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

Examples: Imposition of silence on a specific station by the station in distress.
(Cessna C-FNJI is causing interference to distress traffic.)

CESSNA FOXTROT NOVEMBER JULIETT INDIA
THIS IS
PIPER FOXTROT X-RAY QUEBEC QUEBEC
STOP TRANSMITTING - MAYDAY
OUT

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

ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
CESSNA FOXTROT NOVEMBER JULIETT INDIA
STOP TRANSMITTING DISTRESS
OUT

Cancellation of Distress

When a station is no longer in distress, or when it is no longer necessary to observe radio silence (i.e., 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 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 "DISTRESS TRAFFIC ENDED" or the international expression "SILENCE FINISHED" or "SEELONCE FEENEE";
- 8) a short plain-language description of why the distress situation is being cancelled;
- 9) the name or call sign of station transmitting the message;
- 10) the word "OUT".

Example: MAYDAY
ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
WINNIPEG TOWER
TIME 1630 Z
MAYDAY
PIPER FOXTROT X-RAY QUEBEC QUEBEC
DISTRESS TRAFFIC ENDED
PIPER FOXTROT X-RAY QUEBEC QUEBEC LOCATED BY
SEARCH AND RESCUE
WINNIPEG TOWER
OUT

Note: The procedure outlined here is mainly for the benefit of other stations so they can resume regular service on the distress frequencies. To ensure that search and rescue stations are advised that a station is no longer in distress, a normal call to the nearest radio station detailing the reasons for cancelling the distress call **MUST** be made.

Urgency Communications

Urgency Signal

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

The urgency signal is "PAN PAN" spoken three times. It should be used at the beginning of the first communication.

The urgency signal and the urgency message may be addressed to all stations or to a specific station.

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 frequencies 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.

Frequencies to Be Used

The first transmission of the urgency call and message by a station should be made on the frequency in use at the time. If the station is unable to establish communication on the frequency in use, the urgency call and message should be repeated on any other frequency available in an effort to establish communication with any other station.

Urgency Message

The urgency signal shall be followed by a message giving further information of the incident that necessitated the use of the urgency signal.

The urgency message should contain as many as required of the following elements and, if possible, in the following order:

- 1) the urgency signal "PAN PAN" (three times);
- 2) the name of the station addressed or the words "ALL STATIONS" (three times);
- 3) the words "THIS IS";
- 4) the identification of the aircraft;
- 5) the nature of the urgency condition;
- 6) the intentions of the person in command;
- 7) present position, flight level or altitude and heading;
- 8) any other useful information.

Example: PAN PAN, PAN PAN, PAN PAN
ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
CESSNA FOXTROT NOVEMBER JULIETT INDIA
POSITION: UNKNOWN
AIRSPEED: 112 KNOTS
ALTITUDE: 1050 FEET
LOST, REQUEST RADAR CHECK
CESSNA FOXTROT NOVEMBER JULIETT INDIA
OVER

Example of reply: PAN PAN
CESSNA FOXTROT NOVEMBER JULIETT INDIA
THIS IS WINNIPEG TOWER
YOUR POSITION IS 20 MILES SOUTH OF WINNIPEG
WINNIPEG TOWER
STANDING BY

Cancellation of Urgency Message

When the urgency signal has been used before a message addressed to "ALL STATIONS" and 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
CESSNA FOXTROT NOVEMBER JULIETT INDIA
CESSNA FOXTROT NOVEMBER JULIETT INDIA HAS BEEN
POSITIONED AT 20 MILES SOUTH OF WINNIPEG AIRPORT
PROCEEDING NORMALLY
CESSNA FOXTROT NOVEMBER JULIETT INDIA
OUT

Safety Communications

Safety Signal

The safety signal is used mainly in the maritime mobile service. It indicates that the station calling is about to transmit a message concerning the safety of navigation or giving important meteorological warnings.

The safety signal is the word "SECURITY" spoken three times. It should be used at the beginning of the first communication.

The safety signal and the safety message may be addressed to "ALL STATIONS" or to a specific station.

Priority

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

Stations that hear the safety signal shall continue to listen on the frequency on which the message was transmitted until 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 safety message that follows it.

Safety Message

The safety message should contain as many of the following elements and, if possible, in the following order:

- 1) the safety signal "SECURITY" (three times);
- 2) the name of the station addressed or "ALL STATIONS" (repeated three times);
- 3) the words "THIS IS";
- 4) the name or call sign of the station sending the message;
- 5) the nature of the condition;
- 6) the words "THIS IS";
- 7) the name or call sign of the station sending the message.

Example: SECURITY, SECURITY, SECURITY
ALL STATIONS, ALL STATIONS, ALL STATIONS
THIS IS
VANCOUVER RADIO
NOTICE TO ALL VESSELS IN THE MERRY ISLAND AREA
LOG BOOM ADRIFT AND BREAKING UP SIX MILES SOUTH
OF MERRY ISLAND
THIS IS
VANCOUVER RADIO
OUT

APPENDIX A

PROCEDURAL WORDS AND PHRASES

Word or Phrase	Meaning
ACKNOWLEDGE	Let me know that you have received and understood this message.
AFFIRMATIVE	Yes, or permission granted.
BREAK	Indicates 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.
CLEARED	Authorized to proceed under the conditions specified.
CONFIRM	My version is ... Is that correct?
CORRECTION	An error has been made in this transmission (message indicated). The correct version is
DISREGARD	Consider this transmission as not sent.
GO AHEAD	Proceed with your message.
HOW DO YOU READ?	Self-explanatory.
I SAY AGAIN	Self-explanatory (use instead of "I REPEAT").
MAYDAY	The spoken word for distress communications.
MAYDAY RELAY	The spoken word for the distress relay signal.
MONITOR	Listen on (frequency).
NEGATIVE	No, or that is not correct, or I do not agree.
OUT	Conversation is ended and no response is expected.
OVER	My transmission is ended and I expect a response from you.
PAN PAN	The spoken word for urgency communications.

READ BACK	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 __.
SAY AGAIN	Self-explanatory. (Do not use the word "REPEAT".)
STAND BY	I must pause for a few seconds or minutes, please wait.
SEELONCE	An international expression to indicate that silence has been imposed on the frequency due to a distress situation. The aeronautical phrase is "STOP TRANSMITTING".
SEELONCE FEENEE	An international expression to indicate that the distress situation has ended. The aeronautical phrase is "DISTRESS TRAFFIC ENDED".
SEELONCE MAYDAY	An international expression to advise that a distress situation is in progress. The command comes from the aircraft in distress. The aeronautical phrase is "STOP TRANSMITTING - MAYDAY".
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.

APPENDIX B

EQUIPMENT FUNDAMENTALS

Maintenance

Microphone and Antenna Connections

There are various types of connectors used to attach cables 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 metal case), or open wires (when the wire is broken inside the plastic shield or outer covering).

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

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.

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.

Note: Always exercise caution when changing a fuse. Make sure that your hands are dry.

APPENDIX C

RADIO STATION LICENCES

Unless otherwise exempted, all radio stations in Canada must be licensed by the Minister. 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 of the station, the frequencies to be used for transmitting 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 Industry Canada. To be eligible for licensing in Canada, radio equipment must be type-approved or found to be technically acceptable for licensing by the Department.

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 a radio license is liable, on summary conviction, in the case of an individual, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding one year, or to both, or, in the case of a corporation, to a fine not exceeding twenty-five thousand dollars.

Inquiries concerning radio licensing may be directed to any district office of Industry Canada.

APPENDIX D

If you require additional information about certificates, please contact a district office of Industry Canada in one of the cities listed below:

St. John's, Nfld.	Toronto, Ont.
Halifax, N.S.	Winnipeg, Man.
Charlottetown, P.E.I.	Regina, Sask.
Saint John, N.B.	Saskatoon, Sask.
Chicoutimi, Que.	Calgary, Alta.
Montreal, Que.	Edmonton, Alta.
Quebec, Que.	Grande Prairie, Alta.
Sherbrooke, Que.	Yellowknife, N.W.T.
Belleville, Ont.	Kelowna, B.C.
Hamilton, Ont.	Prince George, B.C.
Kitchener, Ont.	Vancouver, B.C.
London, Ont.	Victoria, B.C.
Ottawa, Ont.	Whitehorse, Y.T.
Sault Ste. Marie, Ont.	