ROYAL CANADIAN AIR CADETS

PROFICIENCY LEVEL FOUR

INSTRUCTIONAL GUIDE

SECTION 4

EO C429.04 – EXPLAIN EMERGENCY, URGENCY AND SAFETY COMMUNICATIONS

Total Time: 30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-804/PG-001, *Proficiency Level Four Qualification Standard and Plan*, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

PRE-LESSON ASSIGNMENT

Nil.

APPROACH

An interactive lecture was chosen for this lesson to clarify, emphasize, and summarize emergency, urgency and safety communications.

INTRODUCTION

REVIEW

Nil.

OBJECTIVES

By the end of this lesson the cadet shall have explained emergency, urgency and safety communications.

IMPORTANCE

It is important for cadets to explain emergency, urgency and safety communications as the information is recognized worldwide to request assistance. The information is required knowledge to obtain the Industry Canada Restricted Operator Certificate with Aeronautical Qualification (ROC-A).

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Teaching point 1 **Explain emergency communications.**

Time: 15 min Method: Interactive Lecture

EMERGENCY COMMUNICATIONS

Distress Call

A distress call is defined as a situation of serious and / or imminent danger that requires immediate assistance. A distress call is sent by saying:

1. MAYDAY spoken three times,
2. THIS IS, and
3. the call sign of the aircraft in distress spoken three times.



Distress situations include:

- fire,
- engine failure, and
- explosive decompression.

Example:

MAYDAY, MAYDAY, MAYDAY,

THIS IS,

PIPER FOXTROT ALFA BRAVO CHARLIE,

PIPER FOXTROT ALFA BRAVO CHARLIE,

PIPER FOXTROT ALFA BRAVO CHARLIE.

Priority

A distress call has absolute priority over all other transmissions.

Frequencies to Use

The initial distress call should be made on the air-to-ground frequency that is in use at the time. If the station in distress cannot make contact on the initial air-to-ground frequency, attempt to make contact on the general distress frequency (121.50 MHz, 243 MHz or 3023.5 kHz) and then any other frequency that is available. If changing frequency, state which frequency is being changed to before leaving the first frequency.

Distress Message

The distress message shall follow the distress call as soon as possible. The message shall include as much information as possible, in the following order:

1. the distress signal MAYDAY once,
2. the call sign of the aircraft in distress once,
3. the nature of the distress condition and what assistance is required,

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4. the intentions of the person in command,
5. the aircraft details including its position, airspeed, altitude, and heading,
6. the number of people on board and any injuries,
7. any other information which might assist the rescue, and
8. the call sign of the aircraft in distress.

Example:

MAYDAY,

PIPER FOXTROT ALFA BRAVO CHARLIE,

STRUCK BY LIGHTNING,

DITCHING AIRCRAFT,

POSITION: 20 MILES EAST OF WINNIPEG,

ALTITUDE: WUN TOUSAND FIFE ZERO ZERO FEET,

AIRSPEED: WUN TOO FIFE KNOTS,

HEADING: TOO SEVEN ZERO DEGREES,

ONE PERSON ON BOARD,

PIPER FOXTROT ALFA BRAVO CHARLIE.

Repetition of Distress Message

The distress message shall be repeated at intervals by the aircraft in distress until an answer is received or until it is no longer safe / possible to continue sending the message.

Action by Station in Distress

A person in command of an aircraft in distress shall direct the following actions:

1. transmit the distress call;
2. transmit the distress message;
3. listen for acknowledgement of message receipt;
4. exchange further distress information as applicable; and
5. activate automatic emergency equipment (eg, emergency locator transmitter [ELT]) if available and when appropriate.

Action by Stations Other Than the Station in Distress

An aircraft that is not in distress shall transmit the distress message when:

1. the aircraft in distress is not in a position to transmit the message;
2. the person in command of the aircraft not in distress believes that further help is necessary; and
3. the aircraft heard a distress message that has not been acknowledged.

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When a distress message has been heard and the aircraft in distress is not in the immediate vicinity, allow time for stations nearer to the aircraft in distress to reply.

Stations hearing a distress message shall:

- continue to monitor the frequency on which the distress message was received;
- establish a continuous watch on appropriate distress and emergency frequencies;
- notify stations with direction finding or radar facilities and request assistance unless it is known that the action has been taken by the station acknowledging receipt of the distress message; and
- cease transmissions which interfere with the distress traffic.

Distress Traffic



Distress traffic is all transmissions relative to the immediate assistance required by the station in distress including all transmissions after the initial distress call.

The distress signal MAYDAY spoken once shall precede all distress traffic.



For stations not aware of the distress call, starting the message with the word MAYDAY will alert the stations of a distress situation. All stations will monitor the distress channel on which the distress call originated.

Any aircraft that has knowledge of the distress traffic and cannot assist the station in distress shall follow the traffic until it is evident that assistance is being provided.

All stations that are aware of the distress traffic and are not participating in the traffic are forbidden to transmit on the frequencies.



Communication can continue once a message has been received indicating that normal working traffic has resumed.

Acknowledgement of Receipt of a Distress Message

A station responding to a distress message shall acknowledge the message in the following form:

1. the distress signal MAYDAY;
2. the call sign of the station in distress spoken three times;
3. the phrase THIS IS;
4. the call sign of the station acknowledging receipt spoken three times; and
5. the words RECEIVED MAYDAY.

Example:

MAYDAY, MAYDAY, MAYDAY,

PIPER FOXTROT ALFA BRAVO CHARLIE,

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PIPER FOXTROT ALFA BRAVO CHARLIE,

PIPER FOXTROT ALFA BRAVO CHARLIE,

THIS IS,

WINNIPEG TOWER,

WINNIPEG TOWER,

WINNIPEG TOWER,

RECEIVED MAYDAY.

Action by Stations Acknowledging Receipt of a Distress Message

Once the station has acknowledged the distress message, the station shall take the following actions:

1. taking control of the communications or clearly transferring the responsibility and informing the aircraft if a transfer is made;

2. taking immediate action to ensure all necessary information is provided as soon as possible to the air traffic service (ATS) unit concerned and the aircraft operating agency or representative concerned;

3. continuing to monitor the frequency on which the distress message was received and if possible any other frequency that may be used by the aircraft in distress;

4. warning other stations in order to prevent the transfer of aeronautical traffic to the frequency or the distress communication; and

5. ceasing all transmissions that may interfere with the distress traffic.

Relay of a Distress Message

If a distress message is repeated by an aircraft or station other than the aircraft in distress, the message will be comprised of:

- the signal MAYDAY RELAY spoken three times;
- the phrase THIS IS;
- the call sign of the station relaying the message spoken three times;
- the distress signal MAYDAY spoken once; and
- the details of the aircraft in distress, to include:
    - the call sign of the aircraft in distress spoken once;
    - the nature of the distress;
    - the action being taken;
    - its location;
    - the number of people on board; and
    - the call sign of the aircraft in distress spoken once.

Example:

MAYDAY RELAY, MAYDAY RELAY, MAYDAY RELAY,

THIS IS,

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CESSNA GOLF SIERRA ROMEO TANGO,

CESSNA GOLF SIERRA ROMEO TANGO,

CESSNA GOLF SIERRA ROMEO TANGO,

MAYDAY,

PIPER FOXTROT ALFA BRAVO CHARLIE,

STRUCK BY LIGHTNING,

FORCED LANDING AIRCRAFT,

POSITION: 20 MILES EAST OF WINNIPEG,

ALTITUDE: WUN TOUSAND FIFE ZERO ZERO FEET,

AIRSPEED: WUN TOO FIFE KNOTS,

HEADING: TOO SEVEN ZERO DEGREES,

ONE PERSON ON BOARD,

PIPER FOXTROT ALFA BRAVO CHARLIE.

Imposition of Silence

Silence shall be imposed on all stations or individual stations in the area that are interfering with the distress traffic. The aircraft in distress or the station in control of distress traffic shall use the expression SEELONCE MAYDAY. Other stations near the aircraft in distress may impose silence during a distress situation by using the international expression SEELONCE DISTRESS.

All transmissions will cease immediately except for those involved in the distress traffic.

Example:

The aircraft in distress imposing silence to a specific station:	CHEROKEE GOLF OSCAR OSCAR PAPA, THIS IS, PIPER FOXTROT ALFA BRAVO CHARLIE, SEELONCE MAYDAY, OUT.
A station other than the aircraft in distress imposing silence to all stations:	ALL STATIONS, ALL STATIONS, ALL STATIONS, THIS IS, CHEROKEE GOLF OSCAR OSCAR PAPA, SEELONCE DISTRESS, OUT.

Cancellation of Distress

When the distress situation or when radio silence has ended, the station controlling the distress traffic shall transmit a message addressed to all stations on all frequencies used, advising that normal communication may resume. The message cancelling the distress message includes:

1. the distress signal MAYDAY spoken once;
2. the phrase HELLO ALL STATIONS spoken three times;
3. the phrase THIS IS;
4. the call sign of the station transmitting the message;

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5. the filing time of the message;
6. the call sign of the station in distress spoken once;
7. the words SEELONCE FEENEE; and
8. the word OUT.

Example:

MAYDAY,

HELLO ALL STATIONS, HELLO ALL STATIONS, HELLO ALL STATIONS,

THIS IS,

WINNIPEG TOWER,

TIME WUN SIX TREE ZERO ZULU,

PIPER FOXTROT ALPHA BRAVO CHARLIE,

SEELONCE FEENEE,

OUT.



Ensure that search and rescue stations are advised that a station is no longer in distress by making a normal call to the nearest aeronautical station detailing the reasons for cancelling the distress call.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS:

Q1. Define a distress call.

Q2. What is included in a distress call?

Q3. What words are used to impose silence by the aircraft in distress?

ANTICIPATED ANSWERS:

A1. A situation of serious and / or imminent danger that requires immediate assistance.

A2. A distress call includes:

- MAYDAY spoken three times,
- THIS IS, and
- call sign of aircraft in distress spoken three times.

A3. SEELONCE MAYDAY.

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Teaching point 2 **Explain urgency and safety communications.**

Time: 10 min Method: Interactive Lecture

URGENCY AND SAFETY COMMUNICATIONS

Urgency Call

An urgency call is defined as a message from a station having a very urgent transmission but does not require immediate assistance, concerning the safety of:

- an aircraft, ship, or other vehicle, and
- a person.



The urgency call shall only be sent on the authority of the person in charge including situations involving:

- being lost;
- minor mechanical problems;
- serious health issues involving an individual on board; and
- security issues involving an individual on board.

The urgency call is sent using the words PAN PAN spoken three times at the beginning of the first urgency communication.

PRIORITY

An urgency call has priority over all other transmissions except emergency (distress) calls.

All stations that hear the urgency call shall continue to listen for at least three minutes on the frequency which the signal was heard. After three minutes, and if no further message is heard, all stations can resume communications as normal.



Stations that are in communication on frequencies other than those used for the transmission of the urgency message may continue normal work without interruption unless the urgency message is addressed to all stations.

Frequencies to Use

The initial urgency call and message should be made on the air-to-ground frequency that is in use at the time. If the station in difficulty cannot make contact on the initial air-to-ground frequency, it shall attempt to make contact on the general aeronautical emergency frequency (121.50 MHz or 3023.5 kHz) or any frequency that is available to make contact with any aeronautical ground or aircraft station.

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Urgency Message

The urgency call shall be followed by the urgency message. The message shall include further information including as many as possible, in the following order:

1. the urgency call PAN PAN spoken three times;
2. the call sign of the aircraft, station, or ALL STATIONS spoken three times;
3. the phrase THIS IS;
4. the call sign of the aircraft or station making the urgency call;
5. the nature of the urgency condition;
6. the intentions of the person in command;
7. the aircraft particulars of its position (airspeed, altitude, and heading);
8. any other useful information;
9. the call sign of the aircraft in distress; and
10. the word OVER.

Example:

PAN PAN, PAN PAN, PAN PAN,

ALL STATIONS, ALL STATIONS, ALL STATIONS,

THIS IS,

PIPER FOXTROT ALFA BRAVO CHARLIE,

LOST, REQUEST RADAR CHECK,

POSITION: UNKNOWN,

ALTITUDE: WUN TOUSAND FIFE HUNDRED FEET,

AIRSPEED: WUN TOO FIFE KNOTS,

HEADING: TOO SEVEN ZERO DEGREES,

PIPER FOXTROT ALFA BRAVO CHARLIE,

OVER.

Reply to Urgency Message

When the urgency message is addressed to all stations and is acknowledged by another aircraft or station, the acknowledging station shall forward the urgency information to the appropriate authorities.

Example:

PAN PAN,

PIPER FOXTROT ALFA BRAVO CHARLIE,

THIS IS WINNIPEG TOWER,

YOUR POSITION IS 28 MILES EAST WINNIPEG,

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WINNIPEG TOWER,

STANDING BY.

Cancellation of Urgency Message

As soon as it is known that the action is no longer necessary, the cancellation message shall be directed to ALL STATIONS by the station responsible for the urgency message transmission.

Example:

PAN PAN,

HELLO ALL STATIONS, HELLO ALL STATIONS, HELLO ALL STATIONS,

THIS IS,

PIPER FOXTROT ALFA BRAVO CHARLIE,

PIPER FOXTROT ALFA BRAVO CHARLIE,

PIPER FOXTROT ALFA BRAVO CHARLIE,

28 MILES EAST OF WINNIPEG AIRPORT PROCEEDING NORMALLY,

PIPER FOXTROT ALFA BRAVO CHARLIE,

OUT.

Safety Signal

Aircraft or stations transmitting the safety signal SECURITE will then transmit a message to aircraft in flight, concerning:

- the safety of navigation, or
- important meteorological warnings.

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

The safety signal SECURITE is spoken three times at the start of the message addressed to ALL STATIONS.

Example:

SECURITE, SECURITE, SECURITE,

ALL STATIONS, ALL STATIONS, ALL STATIONS,

THIS IS,

PIPER FOXTROT NOVEMBER KILO ECHO,

NOTICE TO ALL STATIONS IN AREA,

30 MILES EAST OF OTTAWA,

UNMANNED BALLOON DRIFTING,

PIPER FOXTROT NOVEMBER KILO ECHO,

OUT.

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CONFIRMATION OF TEACHING POINT 2

QUESTIONS:

Q1. Define an urgency call.

Q2. What word is repeated three times for an urgency call?

Q3. What word is repeated three times for the safety signal?

ANTICIPATED ANSWERS:

A1. A message from a station having a very urgent transmission but does not require immediate assistance, concerning the safety of:

- an aircraft, ship, or other vehicle, and
- a person.

A2. PAN PAN.

A3. SECURITE.

END OF LESSON CONFIRMATION

QUESTIONS:

Q1. What calls have absolute priority over all other communication?

Q2. On what frequency should the initial distress call be made?

Q3. To whom is the cancellation message directed?

ANTICIPATED ANSWERS:

A1. Distress.

A2. The air-to-ground frequency being used at the time.

A3. ALL STATIONS.

CONCLUSION

HOMEWORK / READING / PRACTICE

Nil.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-804/PG-001*Proficiency Level Four Qualification Standard and Plan*, Chapter 3, Annex B, 429 PC.

CLOSING STATEMENT

The ability to explain emergency, urgency and safety communications demonstrates the cadets understanding of the worldwide request for assistance. This knowledge is required to obtain the IC ROC-A.

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INSTRUCTOR NOTES / REMARKS

If the squadron chooses to have cadets obtain the ROC-A, all complementary EOs must be conducted and a qualified examiner must conduct the 429 PC

Cadets who are qualified Advanced Aviation may assist with this instruction.

REFERENCES

C3-116 ISBN 0-9680390-5-7 MacDonald, A. F., & Peppler, I. L. (2000). *From the ground up: Millennium edition*. Ottawa, ON: Aviation Publishers Co. Limited.

C3-182 *Study Guide for the Radiotelephone Operator's Restricted Certificate (Aeronautical)*. (2008). Retrieved September 28, 2008, from www.ic.gc.ca/epic/site/smt-gst.nsf/en/sf01397e.htm

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