

**PO 429**

1. **Performance:** Communicate Using Radio Procedures for Aviation Transmission
2. **Conditions:**
  - a. Given:
    - (1) Hand-held radio,
    - (2) Supervision, and
    - (3) Assistance as required.
  - b. Denied: Nil.
  - c. Environmental: Classroom or training area large enough to accommodate the entire group.
3. **Standard:** IAW the *Study Guide for the Radiotelephone Operator's Restricted Certificate (Aeronautical) [ROC-A]*, the cadet shall communicate using radio procedures for aviation transmission.
4. **Remarks:**
  - a. No fees will be levied by approved examiners on behalf of Industry Canada for giving the examination for the ROC-A.
  - b. The Training Officer or Commanding Officer (CO) must locate and obtain the services of a qualified examiner by contacting Industry Canada at [www.ic.gc.ca](http://www.ic.gc.ca).
  - c. If the squadron wishes to have a staff member apply to become a qualified examiner, contact Industry Canada at [www.ic.gc.ca](http://www.ic.gc.ca).
5. **Complementary Material:**
  - a. PO 429 (Communicate Using Radio Procedures for Aviation Transmission) is a complementary package designed to provide the cadet an opportunity to communicate using radio procedures during aviation transmission.
  - b. If the squadron chooses to have cadets obtain the ROC-A, all complementary material must be instructed, and a qualified examiner must conduct 429 PC.

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**EO C429.01**

1. **Performance:** Explain Regulations and Operating Procedures for Aviation Transmission and Licensing
2. **Conditions:**
  - a. Given:
    - (1) Supervision, and
    - (2) Assistance as required.
  - b. Denied: Nil.
  - c. Environmental: Classroom or training area large enough to accommodate the entire group.
3. **Standard:** The cadet shall explain regulations and operating procedures for aviation transmission and licensing, to include:
  - a. priorities, privacy, and control of communication;
  - b. time, date, and transmission of numbers;
  - c. call signs, air carriers, civil registration, and ground stations; and
  - d. calling procedures.
4. **Teaching Points:**

TP	Description	Method	Time	Refs
TP1	Explain priorities, privacy, and control of communication.	Interactive Lecture	5 min	C3-116 (pp. 219–220) C3-182 (pp. 2–4)
TP2	Explain time, date, and transmission of numbers.	Interactive Lecture	5 min	C3-116 (p. 218) C3-182 (pp. 5–8)
TP3	Explain operating procedures, to include: <ol style="list-style-type: none"> <li>a. words and phrases,</li> <li>b. call signs,</li> <li>c. air carriers,</li> <li>d. civil registration, and</li> <li>e. ground stations.</li> </ol>	Interactive Lecture	5 min	C3-116 (p. 219) C3-182 (pp. 8–9, pp. 24–25)
TP4	Explain calling procedures, to include: <ol style="list-style-type: none"> <li>a. single station call,</li> <li>b. all station general call,</li> <li>c. multiple station call,</li> <li>d. replying,</li> <li>e. corrections and repetitions,</li> </ol>	Interactive Lecture	10 min	C3-182 (pp. 9–13)

TP	Description	Method	Time	Refs
	f. message handling procedures, and g. signal (or radio) checks			

5. **Time:**

- |    |                            |        |
|----|----------------------------|--------|
| a. | Introduction / Conclusion: | 5 min  |
| b. | Interactive Lecture:       | 25 min |
| c. | Total:                     | 30 min |

6. **Substantiation:** An interactive lecture was chosen for this lesson to clarify, emphasize, and summarize regulations and operating procedures for aviation transmission and licensing.

7. **References:**

- C3-116 ISBN 0-9680390-5-7 MacDonald, A.F., & Pepler, 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.html](http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/sf01397e.html)

8. **Training Aids:**

- Presentation aids (eg, whiteboard / flip chart / OHP / multimedia projector) appropriate for classroom / training area.
- Study Guide for the Radiotelephone Operator's Restricted Certificate (Aeronautical) (ROC-21).

9. **Learning Aids:** *Study Guide for the Radiotelephone Operator's Restricted Certificate (Aeronautical) (ROC-21)*.

10. **Test Details:** This EO is assessed IAW Chapter 3, Annex B, 429 PC.

11. **Remarks:**

- If the squadron chooses to have cadets obtain the ROC-A, all complementary EOs for this PO must be instructed, and a qualified examiner must conduct 429 PC.
- Cadets who are qualified Advanced Aviation may assist with this instruction.

**EO C429.02**

1. **Performance:** Communicate Using Radio Procedures for Aviation Transmission
2. **Conditions:**
  - a. Given:
    - (1) Hand-held radio,
    - (2) Supervision, and
    - (3) Assistance as required.
  - b. Denied: Nil.
  - c. Environmental: Classroom or training area large enough to accommodate the entire group.
3. **Standard:** The cadet shall communicate using radio procedures for aviation transmission, to include:
  - a. standard phrases,
  - b. priority of communication, and
  - c. radio check.
4. **Teaching Points:**

TP	Description	Method	Time	Refs
TP1	Explain the standard phrases used in a radio message, to include: <ol style="list-style-type: none"> <li>a. acknowledge,</li> <li>b. affirmative,</li> <li>c. break,</li> <li>d. confirm,</li> <li>e. correction,</li> <li>f. do you read,</li> <li>g. go ahead,</li> <li>h. how do you read,</li> <li>i. I say again,</li> <li>j. negative,</li> <li>k. out,</li> <li>l. over,</li> <li>m. read back,</li> <li>n. roger,</li> <li>o. say again,</li> <li>p. speak slower,</li> <li>q. stand by,</li> <li>r. that is correct,</li> </ol>	Interactive Lecture	5 min	C3-116 (p. 219) C3-182 (p. 24)

TP	Description	Method	Time	Refs
	<ul style="list-style-type: none"> <li>s. verify, and</li> <li>t. WILCO.</li> </ul>			
TP2	<p>Explain priority of communication, to include:</p> <ul style="list-style-type: none"> <li>a. emergency communications,</li> <li>b. flight safety communications,</li> <li>c. scheduled broadcasts,</li> <li>d. unscheduled broadcasts, and</li> <li>e. other air-ground communications.</li> </ul>	Interactive Lecture	5 min	C3-116 (pp. 107, 110–111, 164, 170–171, 219–220)
TP3	<p>Explain emergency transmissions, to include:</p> <ul style="list-style-type: none"> <li>a. distress calls,</li> <li>b. urgency calls, and</li> <li>c. safety calls.</li> </ul>	Interactive Lecture	5 min	C3-116 (pp. 225–226) C3-182 (pp. 14–23)
TP4	<p>Explain a radio check, to include:</p> <ul style="list-style-type: none"> <li>a. readability, to include: <ul style="list-style-type: none"> <li>(1) unreadable,</li> <li>(2) readable now and then,</li> <li>(3) readable with difficulty,</li> <li>(4) readable, and</li> <li>(5) perfectly readable; and</li> </ul> </li> <li>b. strength, to include: <ul style="list-style-type: none"> <li>(1) bad,</li> <li>(2) poor,</li> <li>(3) fair,</li> <li>(4) good, and</li> <li>(5) excellent.</li> </ul> </li> </ul>	Interactive Lecture	5 min	C3-116 (p. 220) C3-182 (pp. 13–14)
TP5	<p>Have the cadets, in pairs, conduct station-to-station calls using the ITU phonetic alphabet and numbers, and conduct a signal check, to include:</p> <ul style="list-style-type: none"> <li>a. turning the radio on;</li> <li>b. using message parts, to include: <ul style="list-style-type: none"> <li>(1) initiating a call with "____" this is "____", over;</li> <li>(2) answering a call with "____" this is "____", go ahead, over";</li> <li>(3) requesting a signal check on a different frequency;</li> </ul> </li> </ul>	In-Class Activity	5 min	

TP	Description	Method	Time	Refs
	(4) responding to the request; and (5) acknowledging the call and ending the call with "out"; c. using radio techniques; and d. turning the radio off.			

5. **Time:**

a.	Introduction / Conclusion:	5 min
b.	Interactive Lecture:	20 min
c.	In-Class Activity:	5 min
d.	Total:	30 min

6. **Substantiation:**

- a. An interactive lecture was chosen for TPs 1–4 to clarify, emphasize and summarize radio procedures for aviation transmission.
- b. An in-class activity was chosen for TP 5 as an interactive way to confirm the cadets' comprehension of radio procedures for aviation transmission.

7. **References:**

- a. C3-116 ISBN 0-9680390-5-7 MacDonald, A.F., & Pepler, I.L. (2000). *From the ground up: Millennium edition*. Ottawa, ON: Aviation Publishers Co. Limited.
- b. 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.html](http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/sf01397e.html)

8. **Training Aids:** Presentation aids (eg, whiteboard / flip chart / OHP / multimedia projector) appropriate for classroom / training area.9. **Learning Aids:**

- a. Hand-held radio,
- b. Pen / pencil, and
- c. Radio Activity handout.

10. **Test Details:** This EO is assessed IAW Chapter 3, Annex B, 429 PC.11. **Remarks:**

- a. If the squadron chooses to have cadets obtain the ROC-A, all complementary EOs for this PO must be instructed, and a qualified examiner must conduct 429 PC.
- b. Cadets who are qualified Advanced Aviation may assist with this instruction.

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**EO C429.03**

1. **Performance:** Describe Radio Wavelengths, Signals, Licences and Equipment
2. **Conditions:**
  - a. Given:
    - (1) Supervision, and
    - (2) Assistance as required.
  - b. Denied: Nil.
  - c. Environmental: Classroom or training area large enough to accommodate the entire group.
3. **Standard:** The cadet shall describe:
  - a. radio wavelengths, frequencies and bands;
  - b. characteristics of radio signals;
  - c. aeronautical terms and definitions;
  - d. radio station licences; and
  - e. maintenance of equipment.
4. **Teaching Points:**

TP	Description	Method	Time	Refs
TP1	Describe radio wavelengths, frequencies and bands, to include: <ol style="list-style-type: none"> <li>a. cycle;</li> <li>b. kilohertz;</li> <li>c. megahertz;</li> <li>d. low, medium, high, very high, and ultra high frequencies; and</li> <li>e. frequency allocation.</li> </ol>	Interactive Lecture	5 min	C3-116 (pp. 207–209)
TP2	Describe characteristics of radio signals, to include: <ol style="list-style-type: none"> <li>a. ground waves, and</li> <li>b. sky waves.</li> </ol>	Interactive Lecture	5 min	C3-116 (p. 210)
TP3	Describe aeronautical terms and definitions, to include: <ol style="list-style-type: none"> <li>a. aerodrome,</li> <li>b. aeronautical service,</li> <li>c. aircraft station,</li> <li>d. Aeronautical Operation Control Communications (AOCC),</li> </ol>	Interactive Lecture	5 min	C3-182 (pp. 22–23)

TP	Description	Method	Time	Refs
	e. aeronautical station, f. Air Traffic Control (ATC) Service, g. controlled aerodrome, h. flight service station (FSS), i. General Aviation Communication (GAC), j. ground control communication, k. private advisory service, and l. private multiple station.			
TP4	Describe radio station licences, to include: a. call sign, b. frequencies, c. special conditions, d. equipment, and e. fines.	Interactive Lecture	5 min	C3-116 (p. 218) C3-182 (p. 27)
TP5	Describe maintenance of equipment, to include: a. transceiver (transmitter and receiver), b. speaker (headset), c. microphone and antenna connections, and d. fuses.	Interactive Lecture	5 min	C3-116 (pp. 211–212) C3-182 (p. 26)

5. **Time:**

- |                               |        |
|-------------------------------|--------|
| a. Introduction / Conclusion: | 5 min  |
| b. Interactive Lecture:       | 25 min |
| c. Total:                     | 30 min |

6. **Substantiation:** An interactive lecture was chosen for this lesson to orient the cadets to the topic of radio wavelengths, signals, licences, and equipment and to create interest in the subject.

7. **References:**

- C3-116 ISBN 0-9680390-5-7 MacDonald, A. F., & Pepler, 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.html](http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/sf01397e.html)

8. **Training Aids:** Presentation aids (eg, whiteboard / flip chart / OHP / multimedia projector) appropriate for classroom / training area.

9. **Learning Aids:**

- Handouts, and
- Pen / pencils.

10. **Test Details:** This EO is assessed IAW Chapter 3, Annex B, 429 PC.

11. **Remarks:**

- a. If the squadron chooses to have cadets obtain the ROC-A, all complementary EOs for this PO must be instructed, and a qualified examiner must conduct 429 PC.
- b. Cadets who are qualified Advanced Aviation may assist with this instruction.

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**EO C429.04**

1. **Performance:** Explain Emergency, Urgency and Safety Communications
2. **Conditions:**
  - a. Given:
    - (1) Supervision, and
    - (2) Assistance as required.
  - b. Denied: Nil.
  - c. Environmental: Classroom or training area large enough to accommodate the entire group.
3. **Standard:** The cadet shall explain emergency, urgency and safety communications.
4. **Teaching Points:**

TP	Description	Method	Time	Refs
TP1	Explain emergency communication, to include: <ol style="list-style-type: none"> <li>a. distress call,</li> <li>b. priority,</li> <li>c. frequencies to use,</li> <li>d. distress message,</li> <li>e. repetition of distress message,</li> <li>f. action by station in distress,</li> <li>g. action by stations other than the station in distress,</li> <li>h. distress traffic,</li> <li>i. acknowledge of receipt of a distress message,</li> <li>j. action by stations acknowledging receipt of a distress message,</li> <li>k. relay of a distress message,</li> <li>l. imposition of silence, and</li> <li>m. cancellation of distress.</li> </ol>	Interactive Lecture	15 min	C3-116 (pp. 225–226) C3-182 (pp. 15–20)
TP2	Explain urgency and safety communications, to include: <ol style="list-style-type: none"> <li>a. urgency call,</li> <li>b. priority,</li> <li>c. frequencies to use,</li> <li>d. urgency message,</li> <li>e. reply to urgency message,</li> </ol>	Interactive Lecture	10 min	C3-116 (p. 226) C3-182 (pp. 20–21)

TP	Description	Method	Time	Refs
	f. cancellation of urgency message, and g. safety signal.			

5. **Time:**

- |    |                            |        |
|----|----------------------------|--------|
| a. | Introduction / Conclusion: | 5 min  |
| b. | Interactive Lecture:       | 25 min |
| c. | Total:                     | 30 min |

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

7. **References:**

- a. 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.
- b. 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.html](http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/sf01397e.html)

8. **Training Aids:** Presentation aids (eg, whiteboard / flip chart / OHP / multimedia projector) appropriate for classroom / training area.

9. **Learning Aids:** Nil.

10. **Test Details:** This EO is assessed IAW Chapter 3, Annex B, 429 PC.

11. **Remarks:**

- a. If the squadron chooses to have cadets obtain the ROC-A, all complementary EOs for this PO must be instructed, and a qualified examiner must conduct 429 PC.
- b. Cadets who are qualified Advanced Aviation may assist with this instruction.