

SECTION 19**PO 390 – NAVIGATE A ROUTE USING A MAP AND COMPASS**

1. **Performance.** Navigate a Route Using a Map and Compass.
2. **Conditions**
 - a. Given:
 - (1) Map,
 - (2) Compass,
 - (3) Supervision, and
 - (4) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet will navigate a six-leg predetermined route no longer than two kilometres, using a map and compass by:
 - a. reading six-figure grid references;
 - b. determining bearing and distance;
 - c. following the bearing; and
 - d. pacing the route.
4. **Remarks.** N/A.
5. **Complementary Material**
 - a. Complementary material associated with PO 390 is designed to enhance the cadet's knowledge of map and compass and survival skills, to include:
 - (1) EO C390.01 (Identify Types of Maps),
 - (2) EO C390.02 (Interpret Contour Lines),
 - (3) EO C390.03 (Orient a Map by Inspection),
 - (4) EO C390.04 (Orient a Map Using a Compass),
 - (5) EO C390.05 (Calculate Magnetic Declination),
 - (6) EO C390.06 (Determine Direction Using the Sun),
 - (7) EO C390.07 (Determine Direction at Night),
 - (8) EO C390.08 (Use Blazing Techniques),
 - (9) EO C390.09 (Identify Elements of the Night Sky),
 - (10) EO C390.10 (Identify Methods of Preparing and Cooking a Small Animal or Fish),
 - (11) EO C390.11 (Construct Camp Crafts),
 - (12) EO C390.12 (Perform Minor First Aid in a Field Setting),

- (13) EO C390.13 (Act as a Member of a Ground Search and Rescue [SAR] Party), and
 - (14) EO C390.14 (Participate in a Presentation Given by a Guest Speaker from the Search and Rescue [SAR] Community).
- b. Some complementary material offered in previous levels may be selected as complementary training in Proficiency Level Three, specifically:
- (1) EO C290.04 (Collect Drinking Water Using a Solar Still, A-CR-CCP-802/PG-001, Chapter 4, Section 16).

EO M390.01 – IDENTIFY PARTS OF THE COMPASS

1. **Performance.** Identify Parts of the Compass.
2. **Conditions**
 - a. Given:
 - (1) Compass,
 - (2) Supervision, and
 - (3) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** IAW B-GL-382-005/PT-001 *Maps, Field Sketching, Compasses and the Global Positioning System*, the cadet shall:
 - a. identify the parts of the compass; and
 - b. set a predetermined declination.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain the principles behind the workings of a compass.	Interactive Lecture	5 min	A2-036 (pp. 5-29 to 5-31)

TP	Description	Method	Time	Ref
TP2	Identify and describe the parts of the compass, to include: a. sight, b. compass cover, c. sighting mirror, d. sighting line, e. luminous index point, f. compass dial, g. dial graduations, h. orienting arrow, i. romer 1 : 25 000, j. compass base plate, k. declination scale, l. compass meridian lines, m. magnetic needle, n. luminous orienting points, o. luminous index point, p. romer 1 : 50 000, q. safety cord or lanyard, r. adjustable wrist lock, s. screwdriver, and t. declination adjustment screw.	Interactive Lecture	10 min	A2-041 (pp. 66–67)
TP3	Explain, demonstrate and have cadets set a predetermined declination, to include: a. defining declination; and b. adjusting the declination on a compass.	Demonstration and Performance	10 min	A2-041 (pp. 67–68)

5. Time

a. Introduction/Conclusion:	5 min
b. Interactive Lecture:	15 min
c. Demonstration and Performance:	10 min
d. Total:	30 min

6. Substantiation

- An interactive lecture was chosen for TPs 1 and 2 to present background material and introduce the parts of a compass to the cadets.
- Demonstration and performance was chosen for TP 3 as it allows the instructor to explain and demonstrate the skill the cadet is expected to acquire while providing an opportunity for the cadets to practice setting a predetermined declination under supervision.

7. References

- a. A2-036 A-CR-CCP-121/PT-001 Director Cadets 3. (2003). *Royal Canadian Army Cadet Reference Book*. Ottawa, ON: Department of National Defence.
- b. A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. Training Aids

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area, and
- b. Compass.

9. Learning Aids

- a. Compass, and
- b. Predetermined declination.

10. **Test Details.** This EO is assessed IAW Chapter 3, [Annex B](#), [Appendix 6](#) (390 PC).

11. **Remarks.** TP 2 may need to be modified to reflect the type of compass used for the lesson.

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EO M390.02 – IDENTIFY MARGINAL INFORMATION AND CONVENTIONAL SIGNS

1. **Performance.** Identify Marginal Information and Conventional Signs.
2. **Conditions**
 - a. Given:
 - (1) Topographical map,
 - (2) Supervision, and
 - (3) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet shall identify:
 - a. marginal information, to include:
 - (1) name of the map sheet,
 - (2) number of the map sheet and index of adjoining maps,
 - (3) date of map data,
 - (4) map scale,
 - (5) scale bars,
 - (6) contour interval,
 - (7) legend of conventional signs,
 - (8) military index number,
 - (9) declination diagram, and
 - (10) Universal Transverse Mercator (UTM) grid system; and
 - b. conventional signs represented by a specific colour.

4. Teaching Points

TP	Description	Method	Time	Ref
TP1	Identify and describe marginal information on a topographical map, to include: <ol style="list-style-type: none"> a. name of the map sheet, b. number of the map sheet and index of adjoining maps, c. date of map data, d. map scale, e. scale bars, f. contour interval, g. legend of conventional signs, h. military index number, i. declination diagram, and j. UTM grid system. 	Interactive Lecture	20 min	A2-041 (pp. 7–13)

TP	Description	Method	Time	Ref
TP2	<p>Conduct an activity where the cadets identify conventional signs by colour, to include:</p> <ul style="list-style-type: none"> a. red, to include: <ul style="list-style-type: none"> (1) paved roads and highway numbers, and (2) areas of urban development; b. orange, which represents unpaved roads; c. black, to include: <ul style="list-style-type: none"> (1) cultural features, (2) toponyms (place names), (3) precise elevations, and (4) some symbols; d. brown, to include: <ul style="list-style-type: none"> (1) contour lines, (2) contour elevations, (3) spot elevations, (4) sand, (5) cliffs, and (6) other geographical features; e. blue, to include: <ul style="list-style-type: none"> (1) water, (2) permanent ice features, (3) names of water features, and (4) grid lines; f. green, which represents vegetation features (woods, orchards, and vineyards); g. white, which represents open fields; h. grey, which represents the legend of conventional signs; and i. purple, which represents updates over the original map. 	In-Class Activity	30 min	A2-041 (pp. 19–26)

5. Time

a. Introduction/Conclusion:	10 min
b. Interactive Lecture:	20 min
c. In-Class Activity:	30 min
d. Total:	60 min

6. **Substantiation**

- a. An interactive lecture was chosen for TP 1 to introduce the details of marginal information to the cadet.
- b. An in-class activity was chosen for TP 2 as it is an interactive way to introduce conventional signs to the cadet.

7. **References.** A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. **Training Aids**

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area, and
- b. Topographical maps.

9. **Learning Aids.** Topographical map.

10. **Test Details.** This EO is assessed IAW Chapter 3, [Annex B](#), [Appendix 6](#) (390 PC).

11. **Remarks.** N/A.

EO M390.03 – DETERMINE GRID REFERENCES (GRS)

1. **Performance.** Determine Grid References (GRs).
2. **Conditions**
 - a. Given:
 - (1) Topographical map,
 - (2) Paper,
 - (3) Pen/pencil,
 - (4) Supervision, and
 - (5) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet shall determine GRs, to include:
 - a. a four-figure GR identifying the correct grid, and
 - b. a six-figure GR to 100 m accuracy.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain: <ol style="list-style-type: none"> a. the use of grid lines and the difference between eastings and northings, in that: <ol style="list-style-type: none"> (1) eastings (X-axis) are a series of parallel lines plotted as an overlay to the map sheet, which are drawn from top to bottom and numbered, with two digits, sequentially from west to east; and (2) northings (Y-axis) are a series of parallel lines plotted as an overlay to the map sheet, which are drawn from left to right and numbered, with two digits, sequentially from south to north; and b. GR accuracy, in that: <ol style="list-style-type: none"> (1) a four-figure GR is accurate within a 1000 m square; and (2) a six-figure GR is accurate within a 100 m square. 	Interactive Lecture	5 min	A2-041 (p. 37)

TP	Description	Method	Time	Ref
TP2	<p>Explain, demonstrate, and have the cadet practice determining a four-figure GR, in that:</p> <ul style="list-style-type: none"> a. four-figure GRs will have four numerical digits derived from the numbers assigned to the eastings and northings on the map sheet; b. the numbers are listed by recording the two-digit easting followed by the two-digit northing; and c. the grid lines that intersect in the bottom left corner of the grid square are used to identify that grid square. 	Demonstration and Performance	10 min	A2-041 (p. 37)
TP3	<p>Explain, demonstrate, and have the cadet practice estimating a six-figure GR by:</p> <ul style="list-style-type: none"> a. creating an imaginary grid system (an overlay to divide a grid square into 100 equally sized smaller grid squares with 10 along the bottom edge and 10 along the left-side edge); b. noting that six-figure GRs will have six numerical digits derived from the numbers assigned to the eastings and northings on the map sheet and their estimated tenths; c. recognizing that the numbers are listed by recording the three-digit easting followed by the three-digit northing; and d. remembering that the grid lines that intersect in the bottom left corner of the grid square are used to identify that imaginary grid square. 	Demonstration and Performance	10 min	A2-041 (p. 38, p. 39)
TP4	<p>Define a romer as a device used for measuring a point within a grid square and identify the types of romers available for use and where to find them, to include:</p> <ul style="list-style-type: none"> a. compass, b. protractor, and c. constructed. 	Interactive Lecture	5 min	A2-041 (p. 40, p. 41)

TP	Description	Method	Time	Ref
TP5	<p>Explain, demonstrate, and have the cadet construct a romer for use in determining six-figure GRs by:</p> <ol style="list-style-type: none"> a. obtaining a blank piece of paper with a square edge; b. placing one side of the square edge along the 100 m scale bars; c. marking off 100 m segments beginning at the corner of the paper and working outward; d. numbering these markings from zero (at the corner of the paper) to ten; and e. repeating steps b. to d. for the adjacent edge. 	Demonstration and Performance	10 min	A2-041 (p. 40, p. 41)
TP6	<p>Explain, demonstrate, and have cadet practice determining a six-figure GR using a constructed romer, by:</p> <ol style="list-style-type: none"> a. placing the corner of the constructed romer on the bottom left corner of the grid square, noting the four-figure GR; b. moving the constructed romer to the right the number of tenths required to align the romer directly to or before (never past) the conventional sign or location for which the GR is being determined; c. reading the value along the X-axis of the romer where it crosses the easting on the map sheet (the value at this intersection becomes the value for the third digit of the six-figure GR); d. moving the constructed romer up the number of tenths required for the corner of the romer to be positioned on or before (never past) the conventional sign or location for which the GR is being determined; e. reading the value along the Y-axis of the romer where it crosses the northing on the map sheet (the value at this intersection becomes the value for the sixth digit of the six-figure GR); and f. combining the two sets of digits to create the six-figure GR. 	Demonstration and Performance	10 min	A2-041 (p. 38, p. 40)

5. **Time**

a. Introduction/Conclusion:	10 min
b. Interactive Lecture:	10 min
c. Demonstration and Performance:	40 min
d. Total:	60 min

6. **Substantiation**

- a. An interactive lecture was chosen for TPs 1 and 4 to introduce the grid system used to identify locations on a map.
- b. Demonstration and performance was chosen for TPs 2, 3, 5 and 6 as it allows the instructor to explain and demonstrate determining four- and six-figure GRs and the construction and use of romers while providing an opportunity for the cadet to practice these skills under supervision.

7. **References.** A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. **Training Aids**

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- b. Protractor,
- c. Constructed romer,
- d. Topographical maps,
- e. Paper, and
- f. Pen/pencil.

9. **Learning Aids**

- a. Topographical map,
- b. Paper, and
- c. Pen/pencil.

10. **Test Details.** This EO is assessed IAW Chapter 3, [Annex B](#), [Appendix 6](#), (390 PC).

11. **Remarks.** N/A.

EO M390.04 – DETERMINE DISTANCE ON A MAP AND ON THE GROUND

1. **Performance.** Determine Distance on a Map and on the Ground.

2. **Conditions**

a. Given:

- (1) Topographical map,
- (2) Compass,
- (3) Calculator,
- (4) Paper,
- (5) Pen/pencil,
- (6) Supervision, and
- (7) Assistance as required.

b. Denied: N/A.

c. Environmental: Field setting during the day.

3. **Standard.** The cadet shall determine distance:

a. on a map by measuring; and

b. on the ground by pacing.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain, demonstrate and have the cadet determine distance on a map, to include: <ol style="list-style-type: none"> a. measuring point-to-point; and b. measuring along a route between two points. 	Demonstration and Performance	30 min	A2-041 (pp. 16–18) C2-041 (p. 50)
TP2	Explain, demonstrate and have the cadet pace by: <ol style="list-style-type: none"> a. determining a personal pace for 100 m; b. counting paces; and c. calculating distance. 	Demonstration and Performance	15 min	C0-111 (p. 530, p. 531) C2-041 (p. 106)
TP3	Describe factors that affect pacing, to include: <ol style="list-style-type: none"> a. terrain, b. slopes, c. fatigue, d. equipment, e. weather, and f. obstacles. 	Interactive Lecture	5 min	C0-111 (p. 530, p. 531)

TP	Description	Method	Time	Ref
TP4	Demonstrate and have the cadet practice determining distance using the pace-counting method over varied terrain.	Practical Activity	30 min	

5. Time

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|----|--------------------------------|--------|
| a. | Introduction/Conclusion: | 10 min |
| b. | Demonstration and Performance: | 45 min |
| c. | Interactive Lecture: | 5 min |
| d. | Practical Activity: | 30 min |
| e. | Total: | 90 min |

6. Substantiation

- Demonstration and performance was chosen for TPs 1 and 2 as it allows the instructor to explain and demonstrate measuring distances on a map and determining personal pace, while providing an opportunity for the cadet to practice these skills under supervision.
- An interactive lecture was chosen for TP 3 to introduce the factors that can affect the cadets' personal pace.
- A practical activity was chosen for TP 4 as it is an interactive way for the cadet to experience pacing and the factors that affect it in a safe, controlled environment. This activity contributes to the development of pacing skills and knowledge in a fun and challenging setting.

7. References

- A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.
- C0-111 (ISBN 978-0-9740820-2-8) Tawrell, P. (2006). *Camping and Wilderness Survival: The Ultimate Outdoors Book* (2nd ed.). Lebanon, NH: Leonard Paul Tawrell.
- C2-041 (ISBN 0-07-136110-3) Seidman, D., & Cleveland, P. (1995). *The Essential Wilderness Navigator*. Camden, ME: Ragged Mountain Press.

8. Training Aids

- Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- Topographical maps (one per pair of cadets),
- Calculator,
- Paper, and
- Pen/pencil.

9. **Learning Aids**

- a. Topographical map (one per pair of cadets),
- b. Calculator,
- c. Paper, and
- d. Pen/pencil.

10. **Test Details.** This EO is assessed IAW Chapter 3, [Annex B](#), [Appendix 6](#) (390 PC).

11. **Remarks.** N/A.

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EO M390.05 – DETERMINE BEARINGS ON A MAP AND ON THE GROUND

1. **Performance.** Determine Bearings on a Map and on the Ground.
2. **Conditions**
 - a. Given:
 - (1) Topographical map,
 - (2) Compass,
 - (3) Predetermined declinations,
 - (4) Supervision, and
 - (5) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet shall determine bearings on a map and on the ground.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Identify and explain the 16 points of a compass, to include: <ol style="list-style-type: none"> a. the four cardinal points, b. the four inter-cardinal points, and c. the eight intermediate points. 	Interactive Lecture	10 min	A2-041 (p. 47)
TP2	Explain the degree system on a compass.	Interactive Lecture	5 min	A2-041 (p. 47)
TP3	Identify and explain the three norths, to include: <ol style="list-style-type: none"> a. true north, b. grid north, and c. magnetic north. 	Interactive Lecture	5 min	A2-041 (p. 50, p. 51)
TP4	Explain bearings, to include: <ol style="list-style-type: none"> a. the definition of a bearing, and b. the types of bearings. 	Interactive Lecture	5 min	A2-041 (pp. 48–50)

TP	Description	Method	Time	Ref
TP5	<p>Explain, demonstrate and have the cadets practice determining a bearing on a map by:</p> <ol style="list-style-type: none"> setting the predetermined declination on the compass; identifying and marking the start (point A) and finish (point B) points on a map; drawing a plotting ray from point A to point B; laying the fully opened compass with the edge of the compass base plate along the plotting ray, and the sighting arrow pointed in the direction of travel (point A to point B); holding the compass in place and rotating the compass dial so that the compass meridian lines align with the easting lines on the map, ensuring north on the dial points north on the map; and reading the bearing at the luminous index pointer. 	Demonstration and Performance	15 min	A2-041 (p. 70)
TP6	<p>Explain, demonstrate, and have cadets determine the bearing of a prominent object, using the following steps:</p> <ol style="list-style-type: none"> Set the predetermined declination on the compass. Hold the compass at eye level and at arm's length, and turn to face the prominent object. Aim at the object using the compass sight, ensuring the sighting line is in line with the index pointer. Adjust the compass cover so the compass dial is seen in the sighting mirror. Look in the mirror and turn the compass dial until the magnetic needle is over the orienting arrow (put the red in the bed). Read the number on the compass dial at the luminous index pointer. 	Demonstration and Performance	10 min	A2-041 (pp. 68–70)

5. Time

a. Introduction/Conclusion:	10 min
b. Interactive Lecture:	25 min
c. Demonstration and Performance:	25 min
d. Total:	60 min

6. Substantiation

- a. An interactive lecture was chosen for TPs 1–4 to introduce the cadets to the compass, the degree system, the three norths, and bearings.
- b. Demonstration and performance was chosen for TPs 5 and 6 as it allows the instructor to explain and demonstrate determining bearings on a map and on the ground while providing an opportunity for the cadets to practice these skills under supervision.

7. **References.** A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. Training Aids

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- b. Topographical map, and
- c. Compass.

9. Learning Aids

- a. Topographical map,
- b. Compass, and
- c. Predetermined declinations.

10. **Test Details.** This EO is assessed IAW Chapter 3, [Annex B](#), [Appendix 6](#) (390 PC).

11. **Remarks.** To preserve and reuse the maps, the maps should be covered or coated to allow the use of wet-erase markers instead of pencils or pens.

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EO C390.01 – IDENTIFY TYPES OF MAPS

1. **Performance.** Identify Types of Maps.
2. **Conditions**
 - a. Given:
 - (1) Examples of different types of maps, to include:
 - (a) topographical,
 - (b) orienteering,
 - (c) street, and
 - (d) road;
 - (2) Topographical map worksheet,
 - (3) Supervision, and
 - (4) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet shall:
 - a. identify types of maps, to include:
 - (1) topographical,
 - (2) orienteering,
 - (3) street, and
 - (4) road; and
 - b. fold a map.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain the purpose of a map, in that: <ol style="list-style-type: none"> a. a map is a scale representation of the ground; b. a map uses symbols to represent both physical and man-made features found on the ground; c. maps identify locations such as towns, lakes, and rivers, by name; and d. map designs reflect the needs of the user (eg, urban planners, travellers, educators, cadets). 	Interactive Lecture	5 min	C0-007 (pp. 9–11, p. 17, p. 18)

TP	Description	Method	Time	Ref
TP2	Describe the various types of maps, to include: a. topographical, b. orienteering, c. political, d. street, e. road, f. statistical, g. relief, h. outline, and i. air photo.	Interactive Lecture	5 min	A2-036 (p. 5–2) A2-041 (p. 5) C0-007 (pp. 11–14) C2-041 (pp. 27–30)
TP3	Describe how to care for a topographical map, to include: a. waterproofing the map; b. drying technique; c. only partially opening in a strong wind; d. using pencil and erasing when work is complete; and e. storing in a dry place, rolled, folded or laid flat.	Interactive Lecture	5 min	C2-041 (p. 58)
TP4	Explain, demonstrate, and have cadets practice folding a map.	Demonstration and Performance	10 min	A2-036 (p. 5–5) C2-041 (p. 58, p. 59)

5. Time

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|-----------------------------------|--------|
| a. Introduction/Conclusion: | 5 min |
| b. Interactive Lecture: | 15 min |
| c. Demonstration and Performance: | 10 min |
| d. Total: | 30 min |

6. Substantiation

- An interactive lecture was chosen for TPs 1–3 to orient the cadets to maps and present basic or background material on the purposes, types, and care of maps.
- Demonstration and performance was chosen for TP 4 as it allows the instructor to explain and demonstrate folding a map while providing an opportunity for the cadets to practice folding a map under supervision.

7. References

- A2-036 A-CR-CCP-121/PT-001 Director Cadets 3. (2003). *Royal Canadian Army Cadet Reference Book*. Ottawa, ON: Department of National Defence.
- A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

- c. C0-007 (ISBN 0-02-029265-1) Kjellstrom, B. (1994). *Be Expert With Map and Compass: The Complete Orienteering Handbook*. New York, NY: Hungry Minds, Inc.
- d. C2-041 (ISBN 0-07-136110-3) Seidman, D., & Cleveland, P. (1995). *The Essential Wilderness Navigator*. Camden, ME: Ragged Mountain Press.

8. **Training Aids**

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- b. Maps, to include:
 - (1) topographical,
 - (2) orienteering,
 - (3) street, and
 - (4) road; and
- c. Topographical map worksheet.

9. **Learning Aids**

- a. Maps, to include:
 - (1) topographical,
 - (2) orienteering,
 - (3) street, and
 - (4) road; and
- b. Topographical map worksheet.

10. **Test Details.** N/A.

11. **Remarks.** The maps listed in paragraph 8.b. are the minimum required to instruct this lesson.

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EO C390.02 – INTERPRET CONTOUR LINES

1. **Performance.** Interpret Contour Lines.
2. **Conditions**
 - a. Given:
 - (1) Contour line worksheets,
 - (2) Supervision, and
 - (3) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** IAW B-GL-382-005/PT-001, the cadet shall interpret contour lines in order to relate the actual shape of the ground to what is portrayed on a map.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	<p>Explain how contour lines are interpreted to indicate the shape of the ground, to include:</p> <ol style="list-style-type: none"> a. relief, b. contour lines and intervals, c. the shape of the ground, and d. types of slopes, to include: <ol style="list-style-type: none"> (1) steep (lines spaced closely together), (2) gentle (lines spaced further apart), (3) uniform (lines spaced equally), (4) convex (gentle at the top, steep at the bottom), (5) concave (steep at the top, gentle at the bottom), (6) spurs (extends from a slope), and (7) re-entrants (cuts back into a slope). 	Interactive Lecture	15 min	A2-041 (pp. 27–31)
TP2	Have the cadets interpret contour lines.	Practical Activity	10 min	

5. **Time**

a. Introduction/Conclusion:	5 min
b. Interactive Lecture:	15 min
c. Practical Activity:	10 min
d. Total:	30 min

6. **Substantiation**

- a. An interactive lecture was chosen for TP 1 to illustrate to the cadets how to interpret contour lines.
- b. A practical activity was chosen for TP 2 as it is an interactive way to introduce cadets to interpreting contour lines in a safe, controlled environment. This activity contributes to the development of ground navigation skills and knowledge in a fun and challenging setting.

7. **References.** A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. **Training Aids**

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area, and
- b. Contour line worksheets.

9. **Learning Aids.** Contour line worksheets.

10. **Test Details.** N/A.

11. **Remarks.** N/A.

EO C390.03 – ORIENT A MAP BY INSPECTION

1. **Performance.** Orient a Map by Inspection.
2. **Conditions**
 - a. Given:
 - (1) Topographical map of the exercise area,
 - (2) The cadet's location on the map,
 - (3) Supervision, and
 - (4) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day with a minimum of three prominent objects that are located on the given map.
3. **Standard.** IAW B-GL-382-005/PT-001, the cadet shall orient a map by inspection by:
 - a. selecting three prominent objects visually and finding them on the map;
 - b. rotating the map until the three prominent objects line up with those same objects on the ground; and
 - c. ensuring that all features on the map match the topography.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain the purpose of orienting a map.	Interactive Lecture	5 min	A2-041 (p. 75)
TP2	Explain and demonstrate how to orient a map, to include: <ol style="list-style-type: none"> a. identifying their approximate location on the map; b. selecting three prominent objects around the cadet's current location and finding them on the map; c. rotating the map until all identified objects on the map line up with the direction in which the objects are located on the ground; and d. ensuring that all features line up with their positions on the map. 	Demonstration and Performance	20 min	A2-041 (p. 75)

5. **Time**

- | | |
|-----------------------------------|--------|
| a. Introduction/Conclusion: | 5 min |
| b. Interactive Lecture: | 5 min |
| c. Demonstration and Performance: | 20 min |
| d. Total: | 30 min |

6. **Substantiation**

- a. An interactive lecture was chosen for TP 1 to give the cadets an overview of the purpose of orienting a map.
- b. Demonstration and performance was chosen for TP 2 as it allows the instructor to explain and demonstrate orienting a map by inspection while providing an opportunity for the cadets to practice the skill under supervision.

7. **References.** A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. **Training Aids**

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- b. Demonstration map,
- c. Topographical map of the exercise area, and
- d. The cadets' location on the map.

9. **Learning Aids**

- a. Topographical map of the exercise area, and
- b. The cadets' location on the map.

10. **Test Details.** N/A.

11. **Remarks.** N/A.

EO C390.04 – ORIENT A MAP USING A COMPASS

1. **Performance.** Orient a Map Using a Compass.
2. **Conditions**
 - a. Given:
 - (1) Topographical map of the exercise area,
 - (2) Compass,
 - (3) Predetermined magnetic declination,
 - (4) The cadet's location on the map.
 - (5) Supervision, and
 - (6) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** IAW B-GL-382-005/PT-001, the cadet shall orient a map using a compass.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain the purpose of orienting a map.	Interactive Lecture	5 min	A2-041 (p. 75)
TP2	Explain, demonstrate and have the cadets practice orienting a map using a compass by: <ol style="list-style-type: none"> a. identifying the approximate location on the map; b. setting the magnetic declination; c. setting the compass dial to north; d. laying the compass flat on the map with the cover open; e. pointing the mirror to north (top of the map); f. aligning the compass meridian lines with the map easting lines; g. turning the map until the magnetic needle lines up with the orienting arrow; and h. ensuring that all features line up with their positions on the map. 	Demonstration and Performance	20 min	A2-041 (p. 76)

5. **Time**

- | | |
|-----------------------------------|--------|
| a. Introduction/Conclusion: | 5 min |
| b. Interactive Lecture: | 5 min |
| c. Demonstration and Performance: | 20 min |
| d. Total: | 30 min |

6. **Substantiation**

- a. An interactive lecture was chosen for TP 1 to give the cadets an overview of the purpose of orienting a map.
- b. Demonstration and performance was chosen for TP 2 as it allows the instructor to explain and demonstrate orienting a map using a compass while providing an opportunity for the cadets to practice the skill under supervision.

7. **References.** A2-041 B-GL-382-005/PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. **Training Aids**

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- b. Demonstration map,
- c. Topographical map of the exercise area,
- d. Compass,
- e. Predetermined magnetic declination, and
- f. The cadet's location on the map.

9. **Learning Aids**

- a. Topographical map of the exercise area,
- b. Compass,
- c. Predetermined magnetic declination, and
- d. The cadet's location on the map.

10. **Test Details.** N/A.

11. **Remarks.** N/A.

EO C390.05 – CALCULATE MAGNETIC DECLINATION

1. **Performance.** Calculate Magnetic Declination.
2. **Conditions**
 - a. Given:
 - (1) Magnetic declination worksheet,
 - (2) Pen/pencil,
 - (3) Supervision, and
 - (4) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Classroom or training area large enough to accommodate the entire group.
3. **Standard.** The cadet shall calculate magnetic declination.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Discuss the three norths and magnetic declination, to include: <ol style="list-style-type: none"> a. true north, b. grid north, c. magnetic north. 	Interactive Lecture	5 min	A2-041 (pp. 50–54)
TP2	Explain, demonstrate and have cadets calculate magnetic declination, to include: <ol style="list-style-type: none"> a. locating declination diagram; b. identifying the formula used to calculate magnetic declination; c. calculating magnetic declination by: <ol style="list-style-type: none"> (1) identifying grid magnetic angle; (2) identifying current year; (3) identifying year of declination information; (4) identifying annual change; (5) determining whether the annual change is positive or negative; (6) inputting the information into the formula; (7) solving for current declination; and (8) determining whether the magnetic declination is east or west. 	Demonstration and Performance	15 min	A2-041 (pp. 53–58)

TP	Description	Method	Time	Ref
TP3	Have cadets calculate magnetic declination.	In-Class Activity	30 min	

5. **Time**

- | | |
|-----------------------------------|--------|
| a. Introduction/Conclusion: | 10 min |
| b. Interactive Lecture: | 5 min |
| c. Demonstration and Performance: | 15 min |
| d. In-Class Activity: | 30 min |
| e. Total: | 60 min |

6. **Substantiation**

- An interactive lecture was chosen for TP 1 to orient the cadet to calculating magnetic declination and present basic material.
- Demonstration and performance was chosen for TP 2 as it allows the instructor to explain and demonstrate calculating magnetic declination while providing an opportunity for the cadets to practice calculating magnetic declination under supervision.
- An in-class activity was chosen for TP 3 as it is an interactive way to reinforce calculating magnetic declination.

7. **References.** A2-041 B-GL-382-005-PT-001 Canadian Forces. (2006). *Maps, Field Sketching, Compasses and the Global Positioning System*. Ottawa, ON: Department of National Defence.

8. **Training Aids**

- Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- Magnetic declination worksheet,
- Pen/pencil, and
- Magnetic declination worksheet answer key.

9. **Learning Aids**

- Magnetic declination worksheet, and
- Pen/pencil.

10. **Test Details.** N/A.

11. **Remarks.** Cadets may use a calculator if they wish.

EO C390.06 – DETERMINE DIRECTION USING THE SUN

1. **Performance.** Determine Direction Using the Sun.
2. **Conditions**
 - a. Given:
 - (1) Analog watch,
 - (2) Supervision, and
 - (3) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day with a clear view of the sun.
3. **Standard.** The cadet shall determine direction using the sun with:
 - a. a shadow stick, and
 - b. an analog watch.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain, demonstrate and have cadets determine direction using a shadow stick.	Demonstration and Performance	15 min	C3-002 (p. 351, p. 352)
TP2	Explain, demonstrate and have cadets determine direction using an analog watch.	Demonstration and Performance	10 min	C3-002 (p. 352, p. 353)

5. **Time**

- a. Introduction/Conclusion: 5 min
- b. Demonstration and Performance: 25 min
- c. Total: 30 min

6. **Substantiation.** Demonstration and performance was chosen for this lesson as it allows the instructor to explain and demonstrate determining direction using the sun while providing an opportunity for the cadets to practice the skill under supervision.

7. **References.** C3-002 (ISBN 0-00-653140-7) Wiseman, J. (1999). *The SAS Survival Handbook*. Hammersmith, London: HarperCollins Publishers.

8. **Training Aids**

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area, and
- b. Analog wall clock.

9. **Learning Aids**

- a. Analog watch, and
- b. Stick.

10. **Test Details.** N/A.

11. **Remarks.** Sticks to be collected by the cadets in the field.

EO C390.07 – DETERMINE DIRECTION AT NIGHT

1. **Performance.** Determine Direction at Night.
2. **Conditions**
 - a. Given:
 - (1) Sky map,
 - (2) Red-filtered flashlight,
 - (3) Supervision, and
 - (4) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the night with a clear view of the sky.
3. **Standard.** The cadet shall determine direction at night, to include:
 - a. using the moon to determine south; and
 - b. identifying the major constellations used to find Polaris (North Star).
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain, demonstrate and have cadets determine direction using the moon, to include: <ol style="list-style-type: none"> a. identifying the phases of the moon; and b. determining south. 	Demonstration and Performance	10 min	C0-111 (p. 520, p. 567) C3-002 (p. 356)
TP2	Explain, demonstrate and have cadets identify the major constellations required to find Polaris, to include: <ol style="list-style-type: none"> a. Ursa Major (Big Dipper), b. Cassiopeia, c. Orion, and d. Ursa Minor (Little Dipper). 	Demonstration and Performance	10 min	C0-111 (pp. 568–571) C3-002 (pp. 356–358)
TP3	Explain, demonstrate and have cadets locate Polaris using the major constellations identified in TP2.	Demonstration and Performance	5 min	C0-111 (p. 520, pp. 568–571)

5. **Time**
 - a. Introduction/Conclusion: 5 min
 - b. Demonstration and Performance: 25 min
 - c. Total: 30 min

6. **Substantiation.** Demonstration and performance was chosen for this lesson as it allows the instructor to demonstrate determining direction at night while providing an opportunity for the cadet to practice the skill under supervision.
7. **References**
 - a. C0-111 (ISBN 978-0-9740820-2-8) Tawrell, P. (2006). *Camping and Wilderness Survival: The Ultimate Outdoors Book* (2nd ed.). Lebanon, NH: Leonard Paul Tawrell.
 - b. C3-002 (ISBN 0-00-653140-7) Wiseman, J. (1999). *The SAS Survival Handbook*. Hammersmith, London: HarperCollins Publishers.
8. **Training Aids**
 - a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
 - b. Sky map,
 - c. Red-filtered flashlight, and
 - d. Compass.
9. **Learning Aids**
 - a. Sky map, and
 - b. Red-filtered flashlight.
10. **Test Details.** N/A.
11. **Remarks.** N/A.

EO C390.08 – USE BLAZING TECHNIQUES

1. **Performance.** Use Blazing Techniques.
2. **Conditions**
 - a. Given:
 - (1) Handout of blazing techniques,
 - (2) Supervision, and
 - (3) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet shall:
 - a. identify reasons for blazing;
 - b. identify blazing techniques; and
 - c. blaze a trail.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain the reasons for blazing, to include: <ol style="list-style-type: none"> a. leaving and returning to the site; and b. acting as a guide to a ground search and rescue (SAR) party. 	Interactive Lecture	5 min	A3-016 (p. 169)
TP2	Explain and demonstrate blazing techniques, to include: <ol style="list-style-type: none"> a. blazing techniques, b. examples of blazing, to include <ol style="list-style-type: none"> (1) grass, (2) rocks, (3) trees, and (4) branches; and c. steps to blaze a trail. 	Demonstration	10 min	A3-016 (pp. 169–172) C0-111 (p. 41 p. 547)
TP3	Have cadets blaze a trail.	Performance	10 min	

5. **Time**

a. Introduction/Conclusion:	5 min
b. Interactive Lecture:	5 min
c. Demonstration:	10 min
d. Performance:	10 min
e. Total:	30 min

6. **Substantiation**

- a. An interactive lecture was chosen for TP 1 to present basic material on blazing.
- b. Demonstration was chosen for TP 2 as it allows the instructor to explain and demonstrate blazing techniques.
- c. Performance was chosen for TP 3 as it provides an opportunity for the cadet to practice blazing techniques under supervision.

7. **References**

- a. A3-016 B-GG-217-001/PT-001 Director Air Operations and Training. (1983). *Down But Not Out*. Ottawa, ON: Department of National Defence.
- b. C0-111 (ISBN 978-0-9740820-2-8) Tawrell, P. (2006). *Camping and Wilderness Survival: The Ultimate Outdoors Book* (2nd ed.). Lebanon, NH: Leonard Paul Tawrell.

8. **Training Aids**

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area, and
- b. Handout of blazing techniques.

9. **Learning Aids.** Handout of blazing techniques.

10. **Test Details.** N/A.

11. **Remarks.** N/A.

EO C390.09 – IDENTIFY ELEMENTS OF THE NIGHT SKY

1. **Performance.** Identify Elements of the Night Sky.
2. **Conditions**
 - a. Given:
 - (1) Planisphere star chart,
 - (2) Red-filtered flashlight,
 - (3) Supervision, and
 - (4) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the night with a clear view of the sky.
3. **Standard.** The cadet shall identify elements of the night sky, to include:
 - a. the moon,
 - b. Venus,
 - c. Polaris, and
 - d. constellations, such as:
 - (1) Ursa Major,
 - (2) Ursa Minor,
 - (3) Cassiopeia,
 - (4) Orion, and
 - (5) the signs of the zodiac.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Describe conditions required to view the elements of the night sky, to include: <ol style="list-style-type: none"> a. clouds, b. moon, and c. light pollution. 	Interactive Lecture	5 min	C3-179 (p. 6, p. 48)
TP2	Explain, demonstrate and have the cadets use a planisphere star chart.	Demonstration and Performance	10 min	C3-180

TP	Description	Method	Time	Ref
TP3	Describe and have the cadets identify elements of the night sky, to include: <ol style="list-style-type: none"> a. the moon, b. Venus, c. Polaris, and d. constellations, such as: <ol style="list-style-type: none"> (1) Ursa Major, (2) Ursa Minor, (3) Cassiopeia, (4) Orion, and (5) the signs of the zodiac. 	Practical Activity	95 min	C3-179 (pp. 120–135) C3-221

5. Time

a. Introduction/Conclusion:	10 min
b. Interactive Lecture:	5 min
c. Demonstration and Performance:	10 min
d. Practical Activity:	95 min
e. Total:	120 min

6. Substantiation

- a. An interactive lecture was chosen for TP 1 in order to orient the cadets to the conditions required to observe the elements of the night sky.
- b. Demonstration and performance was chosen for TP 2 as it allows the instructor to explain and demonstrate how to use a planisphere star chart while providing an opportunity for the cadets to practice the skill under supervision.
- c. A practical activity was chosen for TP 3 as it is an interactive way to introduce the cadets to elements of the night sky. This activity contributes to the development of astronomy skills and knowledge in a fun and challenging setting.

7. References

- a. C3-179 (ISBN 1-55209-302-6) Dickenson, T. (2006). *Night Watch: A Practical Guide to Viewing the Universe*. Richmond Hill, ON: Firefly Books Ltd.
- b. C3-180 (ISBN 1-55297-853-2) Scagell, R. (2004). *Firefly Planisphere: Latitude 42 Degrees North*. Toronto, ON: Firefly Books Ltd.
- c. C3-221 National Research Council of Canada. (2007). *Explore the Night Sky*. Retrieved December 3, 2007, from <http://www.nrc-cnrc.gc.ca/eng/education/astronomy/constellations/html.html>.

8. Training Aids

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,

- b. Planisphere star chart, and
- c. Red-filtered flashlight.

9. **Learning Aids**

- a. Planisphere star chart, and
- b. Red-filtered flashlight.

10. **Test Details.** N/A.

11. **Remarks**

- a. It is recommended this lesson be conducted after EO C340.04 (Describe Elements of the Night Sky, Section 6).
- b. Planispheres may be created from EO C340.04 (Describe Elements of the Night Sky) A-CR-CCP-803/PF-001, Chapter 15, Section 6, Figure 15U-4 and Figure 15U-5.

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EO C390.10 – IDENTIFY METHODS OF PREPARING AND COOKING A SMALL ANIMAL OR FISH

1. **Performance.** Identify Methods of Preparing and Cooking a Small Animal or Fish.
2. **Conditions**
 - a. Given:
 - (1) Supervision, and
 - (2) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet shall identify methods of preparing and cooking a small animal or fish, to include:
 - a. skinning or preparing methods, and
 - b. cooking methods.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Explain and demonstrate skinning a small animal, to include: <ol style="list-style-type: none"> a. removing urine; b. cutting a hole in the belly area; c. pulling the skin apart and removing the guts; d. cutting the skin around the front and hind paws; e. hanging the small animal; f. removing the skin; and g. cutting the head off the small animal. 	Demonstration	15 min	C3-003 (p. 146)
TP2	Explain and demonstrate preparing a fish, to include: <ol style="list-style-type: none"> a. bleeding; b. gutting; c. scaling; and d. filleting. 	Demonstration	15 min	C3-002 (p. 239)
TP3	Explain methods of cooking a small animal or fish and demonstrate one of the methods listed, to include: <ol style="list-style-type: none"> a. grilling; b. roasting; or c. frying. 	Demonstration	20 min	C0-111 (p. 456) C3-002 (pp. 283–286)

5. **Time**

- | | |
|-----------------------------|--------|
| a. Introduction/Conclusion: | 10 min |
| b. Demonstration: | 50 min |
| c. Total: | 60 min |

6. **Substantiation.** Demonstration was chosen for this lesson as it allows the instructor to explain and demonstrate skinning a small animal, preparing a fish and cooking a small animal or fish.

7. **References**

- a. C0-111 (ISBN 978-0-9740820-2-8) Tawrell, P. (2006). *Camping and Wilderness Survival: The Ultimate Outdoors Book* (2nd ed.). Lebanon, NH: Leonard Paul Tawrell.
- b. C3-002 (ISBN 0-00-653140-7) Wiseman, J. (1999). *The SAS Survival Handbook*. Hammersmith, London: HarperCollins Publishers.
- c. C3-003 (ISBN 1-896713-00-9) Tawrell, P. (1996). *Camping and Wilderness Survival: The Ultimate Outdoors Book*. Green Valley, ON: Paul Tawrell.

8. **Training Aids**

- a. Small animal (eg, rabbit or squirrel),
- b. Fish,
- c. Cord,
- d. Green sticks,
- e. Sheet of metal, and
- f. Knife.

9. **Learning Aids.** N/A.

10. **Test Details.** N/A.

11. **Remarks**

- a. Cadets who feel uncomfortable with skinning a small animal do not have to participate in that portion of the class but should be present for the TP on preparing a small animal or fish.
- b. If a rabbit or squirrel cannot be caught in a snare, it may be bought at a farmers' market or a similar venue.
- c. If a fish cannot be caught, it may be bought at a farmers' market or a similar venue.

EO C390.11 – CONSTRUCT CAMP CRAFTS

1. **Performance.** Construct Camp Crafts.
2. **Conditions**
 - a. Given:
 - (1) Knife,
 - (2) Cord,
 - (3) Axe,
 - (4) Bow saw,
 - (5) Diagrams detailing camp craft construction,
 - (6) Supervision, and
 - (7) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet, in pairs, shall construct two of the following camp crafts using natural materials:
 - a. a ladder bed,
 - b. a pack frame,
 - c. a shower,
 - d. a washstand,
 - e. a drying rack,
 - f. a tool rack,
 - g. a camp craft for cooking, including:
 - (1) a pot rod,
 - (2) a swinging pot holder, or
 - (3) a Chippewa kitchen;
 - h. a wheelbarrow,
 - i. a coat hanger,
 - j. a simple bench,
 - k. a bench with back rest,
 - l. a camp table, or
 - m. a friction-lock table.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	<p>Have the cadets, in pairs, construct two camp crafts from the following:</p> <ul style="list-style-type: none"> a. a ladder bed, b. a pack frame, c. a shower, d. a washstand, e. a drying rack, f. a tool rack, g. a camp craft for cooking, such as: <ul style="list-style-type: none"> (1) a pot rod, (2) a swinging pot holder, or (3) a Chippewa kitchen; h. a wheelbarrow, i. a coat hanger, j. a simple bench, k. a bench with back rest, l. a camp table, or m. a friction-lock table. 	Practical Activity	110 min	<p>A0-039</p> <p>C2-046</p> <p>C3-002 (p. 309, p. 311, p. 372)</p>

5. **Time**

a.	Introduction/Conclusion:	10 min
b.	Practical Activity:	110 min
c.	Total:	120 min

6. **Substantiation.** A practical activity was chosen for this lesson as it is an interactive way to allow the cadets to practice constructing camp crafts in a safe, controlled environment.

7. **References**

- a. A0-039 CATO 11-08 Director Cadets 3. (1997). *Environmental Protection and Stewardship*. Ottawa, ON: Department of National Defence.
- b. C2-046 PioneeringProjects.org. (2004). *PioneeringProjects.org*. Retrieved February 20, 2007, from <http://www.pioneeringprojects.org/projects/index.htm>.
- c. C3-002 (ISBN 0-00-653140-7) Wiseman, J. (1999). *The SAS Survival Handbook*. Hammersmith, London: HarperCollins Publishers.

8. **Training Aids**

- a. Knife,
- b. Cord,

- c. Axe,
 - d. Bow saw, and
 - e. Diagrams detailing camp craft construction.
9. **Learning Aids**
- a. Knife,
 - b. Cord,
 - c. Axe
 - d. Bow saw, and
 - e. Diagrams detailing camp craft construction.
10. **Test Details.** N/A.
11. **Remarks**
- a. Natural resources found in the field, such as fallen or dead wood, are to be used for construction.
 - b. The directives found in CATO 11-08, *Environmental Protection and Stewardship* are to be followed during this lesson.
 - c. The more difficult camp crafts should be constructed in advance for demonstration purposes.

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EO C390.12 – PERFORM MINOR FIRST AID IN A FIELD SETTING

1. **Performance.** Perform Minor First Aid in a Field Setting.
2. **Conditions**
 - a. Given:
 - (1) Cord,
 - (2) First aid kit,
 - (3) Supervision, and
 - (4) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet shall perform minor first aid in a field setting, to include:
 - a. taking action at the scene;
 - b. moving a casualty to shelter, if necessary; and
 - c. treating minor wounds and first-degree burns.
4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Demonstrate and have the cadets perform minor first aid for the following: <ol style="list-style-type: none"> a. breathing problems, to include the recovery position, b. exposure, c. shock, to include: <ol style="list-style-type: none"> (1) describing the circulatory system; (2) identifying the causes; (3) recognizing signs and symptoms; (4) preventing; and (5) treating; and d. dehydration, to include: <ol style="list-style-type: none"> (1) recognizing signs and symptoms; and (2) identifying prevention methods. 	Demonstration and Performance	25 min	C2-030 (pp. 2–12, p. 52)

TP	Description	Method	Time	Ref
TP2	<p>Demonstrate and have the cadets practice actions to be taken at an emergency scene, to include:</p> <ul style="list-style-type: none"> a. ensuring personal safety; and b. following the steps in the Priority Action Approach, to include: <ul style="list-style-type: none"> (1) Airway and cervical spine (A), (2) Breathing (B), (3) Circulation (C), (4) Deadly bleeds (D), and (5) Shock (S). 	Demonstration and Performance	30 min	C2-030 (pp. 13–17)
TP3	<p>Demonstrate and have the cadets move a casualty to shelter, to include:</p> <ul style="list-style-type: none"> a. moving and carrying over short distances, to include: <ul style="list-style-type: none"> (1) drags, (2) tarp drag method, (3) single-rescue carries, to include: <ul style="list-style-type: none"> (a) packstrap carry, (b) pickaback carry, and (c) carrying seat; and b. carrying over long distances using two-person carries, to include: <ul style="list-style-type: none"> (1) the fore-and-aft lift and carry, and (2) two-hand seat. 	Demonstration and Performance	30 min	C0-111 (p. 1020) C2-030 (pp. 18–33)
TP4	<p>Have the cadets identify:</p> <ul style="list-style-type: none"> a. minor wounds, to include: <ul style="list-style-type: none"> (1) abrasions and scrapes, and (2) nicks and cuts; and b. types of burns, to include: <ul style="list-style-type: none"> (1) first-degree burns, (2) second-degree burns, and (3) third-degree burns. 	Interactive Lecture	10 min	C2-030 (pp. 117–133, pp. 214–226)

TP	Description	Method	Time	Ref
TP5	Demonstrate and have the cadets treat: a. minor wounds, to include: (1) abrasions and scrapes, and (2) nicks and cuts; and b. first-degree burns, to include: (1) heat burns, and (2) radiation burns (sunburns).	Demonstration and Performance	15 min	C2-030 (pp. 117–133, pp. 214–226)

5. Time

- | | |
|-----------------------------------|---------|
| a. Introduction/Conclusion: | 10 min |
| b. Demonstration and Performance: | 100 min |
| c. Interactive Lecture: | 10 min |
| d. Total: | 120 min |

6. Substantiation

- Demonstration and performance was chosen for TPs 1–3 and 5 as it allows the instructor to explain and demonstrate minor first aid while providing an opportunity for the cadet to practice and develop these skills under supervision.
- An interactive lecture was chosen for TP 4 to introduce the cadets to the treatment of minor wounds and burns.

7. References

- C0-111 (ISBN 978-0-9740820-2-8) Tawrell, P. (2006). *Camping and Wilderness Survival: The Ultimate Outdoors Book* (2nd ed.). Lebanon, NH: Leonard Paul Tawrell.
- C2-030 (ISBN 0-7710-8250-9) Merry, W. (1994). *St. John Ambulance: The Official Wilderness First Aid Guide*. Toronto, ON: McClelland & Stewart Inc.

8. Training Aids

- Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- Cord, and
- First aid kit.

9. Learning Aids

- Cord, and
- First aid kit.

10. Test Details. N/A.

- Remarks.** There is no requirement for a qualified first aid instructor to teach the material contained in this lesson, as the cadets are not required to qualify in first aid; however, the instructor should be a qualified first-aider.

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EO C390.13 – ACT AS A MEMBER OF A GROUND SEARCH AND RESCUE (SAR) PARTY

1. **Performance.** Act as a Member of a Ground Search and Rescue (SAR) Party.
2. **Conditions**
 - a. Given:
 - (1) Prepared briefing,
 - (2) Compass,
 - (3) First aid kit,
 - (4) Hand-held radio (one per two cadets),
 - (5) Spare batteries,
 - (6) Whistle,
 - (7) Supervision, and
 - (8) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Field setting during the day.
3. **Standard.** The cadet, in pairs, shall act as a member of a ground SAR party, to include:
 - a. identifying lost person behaviour;
 - b. limiting the search area;
 - c. identifying clue orientation; and
 - d. participating in a ground SAR exercise.

4. Teaching Points

TP	Description	Method	Time	Ref
TP1	<p>Explain:</p> <p>a. lost person behaviour, to include:</p> <p>(1) children (1–3 years),</p> <p>(2) children (3–6 years),</p> <p>(3) children (6–12 years),</p> <p>(4) older persons,</p> <p>(5) people with intellectual disabilities (all ages), and</p> <p>(6) hikers; and</p> <p>b. general information, to include:</p> <p>(1) category and circumstances,</p> <p>(2) terrain,</p> <p>(3) weather,</p> <p>(4) personality,</p> <p>(5) physical conditions, and</p> <p>(6) medical problems.</p>	Interactive Lecture	10 min	A3-052 (pp. 71–75)
TP2	<p>Explain and demonstrate limiting the search area, to include:</p> <p>a. why the search area is limited;</p> <p>b. confinement; and</p> <p>c. confinement methods.</p>	Demonstration	20 min	A3-052 (pp. 84–87)
TP3	<p>Explain and demonstrate clue orientation, to include:</p> <p>a. general principles, and</p> <p>b. searching for clues.</p>	Demonstration	10 min	A3-052 (pp. 92–94)
TP4	Cadets, in pairs, will participate in a ground SAR exercise.	Practical Activity	70 min	

5. Time

a. Introduction/Conclusion:	10 min
b. Interactive Lecture:	10 min
c. Demonstration:	30 min
d. Practical Activity:	70 min
e. Total:	120 min

6. Substantiation

- a. An interactive lecture was chosen for TP 1 to present the categories of lost persons and other general information to the cadets.
- b. Demonstration was chosen for TPs 2 and 3 as it allows the instructor to explain and demonstrate limiting the search area and clue orientation which the cadet is expected to learn.
- c. A practical activity was chosen for TP 4 as it is an interactive way to experience being a member of a search and rescue party. This activity contributes to the development of search and rescue skills and knowledge in a fun and challenging setting.

7. References

- a. A3-052 (ISBN 0-913724-30-0) LaValla, P. (1999). *Search Is an Emergency*. Olympia, WA: ERI International Inc.
- b. C3-208 (ISBN 0-7637-4807-2) National Association for Search and Rescue. (2005). *Fundamentals of Search and Rescue*. Mississauga, ON: Jones and Bartlett Publishers Canada.

8. Training Aids

- a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area,
- b. Prepared briefing,
- c. Compass (one per two cadets),
- d. First aid kit,
- e. Hand-held radio,
- f. Spare batteries, and
- g. Whistle.

9. Learning Aids

- a. Prepared briefing,
- b. Compass,
- c. First aid kit,
- d. Hand-held radio (one per two cadets),
- e. Spare batteries, and
- f. Whistle.

10. Test Details. N/A.**11. Remarks**

- a. A briefing will be conducted before the practical activity, to include:
 - (1) the scenario (eg, downed pilot, lost hiker),
 - (2) the confinement area,
 - (3) search bearing, and

(4) call signs.

b. The scenario's survival site should be set up prior to the activity.

EO C390.14 – PARTICIPATE IN A PRESENTATION GIVEN BY A GUEST SPEAKER FROM THE SEARCH AND RESCUE (SAR) COMMUNITY

1. **Performance.** Participate in a Presentation Given by a Guest Speaker From the Search and Rescue (SAR) Community.
2. **Conditions**
 - a. Given:
 - (1) Supervision, and
 - (2) Assistance as required.
 - b. Denied: N/A.
 - c. Environmental: Classroom or training area large enough to accommodate the entire group.
3. **Standard.** The cadet shall participate in a presentation given by a guest speaker from the SAR community to gain awareness of their function.
4. **Teaching Points.** The SAR guest speaker is asked to:
 - a. familiarize the cadets with:
 - (1) the major purposes and activities,
 - (2) occupations in the unit,
 - (3) titles of positions,
 - (4) duties of personnel,
 - (5) training required to qualify for different duties,
 - (6) variety of tasks,
 - (7) equipment that is used,
 - (8) working conditions; and
 - b. describe their duties; and
 - c. facilitate a question and answer period.
5. **Time**
 - a. Introduction/Conclusion: 10 min
 - b. Interactive Lecture: 50 min
 - c. Total: 60 min

6. **Substantiation.** An interactive lecture was chosen for this lesson to review, clarify, emphasize and summarize the roles and activities of the SAR community.
7. **References.** N/A.
8. **Training Aids.** Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area.
9. **Learning Aids.** N/A.
10. **Test Details.** N/A.
11. **Remarks**
 - a. Members of the SAR community may include:
 - (1) Local police,
 - (2) Provincial police,
 - (3) Royal Canadian Mounted Police (RCMP),
 - (4) Canadian Forces (CF),
 - (5) Canadian Coast Guard (CCG),
 - (6) Civil Air Search and Rescue Association (CASARA), and
 - (7) Search and Rescue Volunteer Association of Canada (SARVAC).
 - b. There is no instructional guide for this EO.