ROYAL CANADIAN AIR CADETS

PROFICIENCY LEVEL TWO

INSTRUCTIONAL GUIDE

SECTION 4

EO M290.04 – CONSTRUCT GROUND-TO-AIR SIGNALS

Total Time: 60 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-802/PG-001, 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.

Photocopy the handout located at Annex A for each cadet.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP1 to introduce methods of signalling to the cadets.

A practical activity was chosen for TP2 as it is an interactive way to introduce cadets to methods of signalling and allows the cadets an opportunity to practice. This activity contributes to the development of survival skills in a fun and challenging setting.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have constructed a ground-to-air signal.

IMPORTANCE

It is important for cadets to know how to construct ground-to-air signals as they may help them get rescued in a survival situation. Many ground-to-air signals are internationally recognized and can be made with almost any substance; in the snow, with logs, with rocks, or by trampling grass. The purpose of ground-to-air signals is to be located, noticed, or to convey a message to rescuers.

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Verify against the official publication.

Teaching point 1 — **Discuss Ground-to-air Signals Employed To Communicate With Aircraft**

Time: 15 min — Method: Interactive Lecture

GROUND-TO-AIR SIGNALS

Signal Dimensions

- Signals should be large with the letters or lines 3 metres (10 feet) wide and if possible 10 metres (40 feet) long, with 3 metres (10 feet) between signals.
- The markings should be deep or high and positioned so that the shadows cast by the sun are the longest.
- Experience teaches one to associate an object with its shape or outline. At a distance, the outline of an object can be clearly recognized long before the details that make up the object can be determined. Geometric shapes can tell the rescuer that the sign is man-made.

Creating Contrasting Shades or Colours

- Colour is an aid to an observer when there is contrast between the colour of an object and its background. The greater the colour contrast the more visible the object.
- While colour alone will not usually identify an object, it is often an aid in locating the object. Usually the darker shades of any given colour will be less likely to attract an observer's attention than the lighter, more brilliant shades.
- An object may cast a shadow beside it, which may be visible although the object itself is out of sight. Objects in shadow may be missed because the eye tends to accept conspicuously dark or light areas as uniform, and does not seek minor differences in darkness or lightness within them.
- To construct a signal on a lighter background dig a shallow ditch and build a low wall of dirt or logs, etc. to cast a shadow larger than your construction.
- Place the signal in an open area easily spotted from the air.

Signals

- Require assistance.
- Require medical assistance.
- Proceed in this direction.
- All is well.
- Require food and water.



Distribute copies of the handout located at Annex A.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What should the signal dimensions be?

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Q2. Name two of the signals.

Q3. How do you construct a signal on a lighter background?

ANTICIPATED ANSWERS

A1. Signals should be large with the letters or lines 3 metres (10 feet) wide and if possible 10 metres (40 feet) long, with 3 metres (10 feet) between signals.

A2. Require assistance, require medical assistance, proceeding in this direction, all is well, and require food and water.

A3. To construct a signal on a lighter background dig a shallow ditch or build a low wall of dirt or logs, etc. to cast a shadow larger than your construction.

Teaching point 2 **Construct a Ground-to-air Signals as a Member of a Group**

Time: 35 min Method: Practical Activity

ACTIVITY

OBJECTIVE

The objective of this activity is to have the cadets construct a ground-to-air signal as a member of a group.

RESOURCES

- Shovel,
- Items found in nature,
- Rope, and
- Handout.

ACTIVITY LAYOUT

An area must be selected that is large enough to construct the ground-to-air signals.

ACTIVITY INSTRUCTIONS

1. Divide cadets into groups of four.

2. Distribute given materials to the groups.

3. Assign a ground-to-air signal to each group.

4. The cadets shall choose a location for the ground-to-air signals. If the cadets have access to beaches or fields they may use the area accordingly (e.g. drawing signals in the sand).

5. Have groups gather resources needed for signals.

6. Each group shall construct a ground-to-air signal.

7. Ensure that the final constructed signal looks the same as the picture.

8. Disassemble signals after completion of the activity.

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9. Return natural resources back to the environment.



Give each group of cadets a different ground-to-air signal from the list to construct. If there are more than 5 groups restart the list from the top and work your way through it again.

SAFETY

Ensure parameters are established so the cadets do not go outside the training area or get lost.

END OF LESSON CONFIRMATION

The cadets' participation in TP2 will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

It is important for the cadets to know how to construct ground-to-air signals in a survival situation to improve their chances of a quick rescue. Many ground-to-air signals are internationally recognized and can be made with almost any substance; in the snow, with logs, with rocks, or by trampling grass. The purpose of ground-to-air signals is to be located, noticed, or to convey a message to rescuers.

INSTRUCTOR NOTES/REMARKS

All materials used in the construction of ground-to-air signals will be from the surrounding environment.

All ground-to-air signals should be removed and returned to the environment after the completion of the practical activity.

REFERENCES

C2-044 Transport Canada (2007). *Ground-to-Air Signals.* Retrieved 9 February 2007, from http://www.tc.gc.ca/CivilAviation/publications/tp14371/SAS/4-0.htm.

C3-003 (ISBN 1-896713-00-9) Tawrell, P. (1996). *Camping and Wilderness Survival: The Ultimate Outdoors Book.* Green Valley, ON: Falcon Distribution.

C3-118 Wilderness Survival. (2007). *Signalling Techniques.* Retrieved 12 March 2007, from http://www.wilderness-survival.net/chpt19.php.

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GROUND-TO-AIR SIGNALS

	MESSAGE	SYMBOL
1	REQUIRE ASSISTANCE	V
2	REQUIRE MEDICAL ASSISTANCE	X
3	PROCEEDING IN THIS DIRECTION	↑
4	ALL IS WELL	LL
5	REQUIRE FOOD AND WATER	F

D Cdts 3, 2007, Ottawa, ON: Department of National Defence

Figure A-1 Ground-to-air Signals

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