ROYAL CANADIAN ARMY CADETS

GREEN STAR

INSTRUCTIONAL GUIDE

SECTION 5

EO C123.03 – PARTICIPATE IN A SNOWSHOEING HIKE

Total Time: 270 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-701/PG-001, *Green Star 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 experiential approach was chosen for this lesson as it allows the cadets to acquire new knowledge and skills through a direct experience. The cadets experience snowshoeing and define that experience on a personal level. The cadets will be given the opportunity to reflect on and examine what they saw, felt and thought while participating in snowshoeing and consider how it relates to what they already learned and experienced as well as how it will relate to future experiences.

INTRODUCTION

REVIEW

Nil.

OBJECTIVES

By the end of this lesson, the cadets shall be expected to know the basic principles and techniques for snowshoeing.

IMPORTANCE

Snowshoeing enhances winter camping and hiking by providing a mode of personal transportation to use in the winter. It also provides fun, physically challenging exposure to a new sport.

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Teaching point 1 **Discuss snow.**

Time: 15 min Method: Interactive Lecture

CONDITIONS OF TEMPERATURE

Newly fallen snow undergoes many alterations on the ground. As the snow on the ground becomes denser, snowflakes consolidate and trapped air is expelled. These changes are affected by conditions of temperature that are caused by sunlight and wind.

Sunlight. In the springtime, the sun may melt the surface of the snow even though the air temperature is below freezing. This will usually cause dry, powdery snow in shaded areas, and wetter snow in sunny areas. Low temperatures at night can cause the wet snow to form a crust over the surface during the night.

Wind. Wind can pack and drift snow. The more constant the wind is, the harder the snow will be packed. Activities such as snowshoeing, skiing and walking will make no impression on the surface. Changes in temperature between warm wind, and those below freezing, will cause an ice crust to form. Movement under such conditions can be quite difficult. Loose snow will drift in the wind causing a wavy surface.

MAIN CHARACTERISTICS OF SNOW

There are three main characteristics of snow that are of interest:

Carrying Capacity. The harder the snow is packed, the greater the amount of weight it will be able to support. An ice crust may have a good carrying capacity, but be difficult to move across because it is too slippery.

Sliding Characteristics. Generally dry snow, packed snow and crusted snow provide better sliding characteristics than wet snow, falling snow and newly fallen snow.

Holding Capacity. This is of interest mainly to skiers, not to snowshoers. It is the ability of the snow to hold the ski and prevent it from sliding backward.

CATEGORIES OF SNOW

Wet Snow. Wet snow is most common in springtime, but can be found in autumn or late winter. It can be made into a solid snowball.

Moist Snow. Moist snow is usually found in early winter, but may occur later in the winter during warm periods. It can be made into a snowball, but has a tendency to fall apart.

Dry Snow. Generally found in mid-winter but can occur at any time when the temperatures are low. It may be packed from the wind, or powdered. At very low temperatures, this snow is more like sand, and has poor qualities for sliding.

New Snow. It may be wet, moist or dry depending on the conditions in which it falls.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What are two factors that contribute to the effect on temperature?

Q2. What is carrying capacity?

Q3. What are the four categories of snow?

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ANTICIPATED ANSWERS

A1. Sunlight and wind.

A2. Carrying capacity means that the harder the snow is packed, the more weight it can endure.

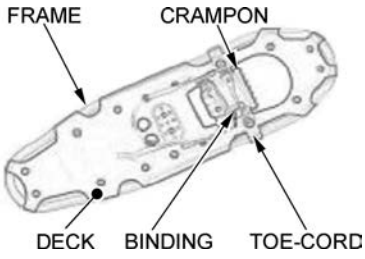
A3. Wet, moist, dry, and new.

Teaching point 2 **Describe snowshoe components.**

Time: 10 min Method: Interactive Lecture



The instructor is to use the actual snowshoe being utilized during the activity portion of the period as the model for identifying parts.



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Figure 1 Parts of the Snowshoe

FRAMES

The frame is the skeleton. It usually, but not always, includes both an outside framework and crosspieces that provide stability within. Most snowshoes have either a traditional steamed and bent wood frame, or an aluminum alloy frame that is welded or riveted together.

Wood Frame. Wood frames must be made from wood that has straight grain and no knots or other flaws that may weaken it. Common woods for snowshoes are white ash, sugar maple or yellow birch.

Aluminum Frame. Some aluminum alloy frames are adonized with an electrostatic coating that protects the aluminum from corrosion. Others are painted using an etching preparation to prevent chipping. Some snowshoes, particularly military-issue snowshoes, are made with frames made of high-strength, aircraft-grade magnesium alloy.

Plastic Frame. Some interjected snowshoes have a frame and deck that are constructed to be one solid piece of plastic.

DECKING

Decking (or lacing), is also known as the carrying surface, is the surface that effectively makes our feet bigger. It may be webbed, as are traditional rawhide-laced snowshoes, or it may be solid or nearly solid, as are many new design snowshoes with neoprene or other synthetic decks. These new style decks give better flotation using a solid decking than those with more traditional webbing. As a result, a smaller snowshoe can be worn if it is decked.

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Neoprene is a rubber-like material. It is the same material used to make wet suits.

BINDINGS

The binding attaches the foot to the snowshoe. Bindings come in a bewildering array of styles, from an impromptu harness fashioned of cord, to a snap-in binding similar to those used for cross-country skis or snowboards, designed so the wearer can switch from one to another in a matter of seconds. Between those two extremes are the A-type and the H-type bindings, named for the approximate shapes their straps form. The binding may also have a crampon, or metal cleat, used to dig in on icy routes.



The instructor is to concentrate on the type of snowshoe and binding being used by the cadets on the FTX; however, the other designs are worthy of mention, in the event the cadets encounter them on future training.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. What are the three types of frames?

Q2. What is the decking?

Q3. What does the binding attach the foot to?

ANTICIPATED ANSWERS

A1. Wood, aluminum and plastic.

A2. Decking is known as the carrying surface. It effectively makes the foot bigger.

A3. The binding attaches the foot to the snowshoe.

Teaching point 3 **Explain and demonstrate snowshoeing techniques.**

Time: 85 min Method: Demonstration and Performance



The instructor shall provide an EXPLANATION and DEMONSTRATION of the complete skill.

The instructor shall also provide an EXPLANATION and DEMONSTRATION of each step required to effectively complete the skill.

WALKING

Simply place one foot in front of the other, sliding it if the binding provides free rotation, stepping if fixed. Make sure one snowshoe does not land on the other, or you will tumble. If you fall, roll your weight back on to the snowshoes while tucked, and then rise. Once you are able to walk, try finding a pace that is comfortable for you.

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BACKING UP

Backing up is a little more difficult. The easiest way to reverse direction is to make a sweeping U-turn, but it is not often possible. While stepping in reverse, it helps to watch your feet. Fixed-rotation snowshoes and free-rotation snowshoes without tails make it easier to move backward.

EDGING

To move across a hillside, kick the uphill edge of the snowshoe into the hillside, to create a horizontal step. Poles will help you balance as you move.

TRAVERSING

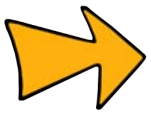
Traversing is probably the most practical climb and descent manoeuvre. In this switchback edging technique, you move diagonally back and forth across a hill, creating a zigzag track up or down the hill.

DOWNHILL

Going downhill can be one of the most difficult snowshoe manoeuvres. The snowshoe will tend to slide. When going downhill a snowshoe with heel traction is useful. Keep your knees bent, leaning back slightly to place as much weight as possible on the heels, providing additional traction. No matter where you are walking, try not to walk too close to rocks, trees, or shrubs, especially if they are partially covered with snow. The wind may have left snow less pockets near these objects into which you might drop.

USING POLES

Poles can be a great aid in helping you balance on top of your snowshoes. You can also push against poles for some forward momentum, taking some of the weight off your legs and giving more of the work to your upper body and arms. Poles can also be used to prod the snow in search of avalanche victims.



Cadets will IMITATE the demonstration provided by the instructor for each step within the skill. The instructor(s) will SUPERVISE the cadets during this imitation.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

Q1. What do you do when you fall?

Q2. What should you try to avoid when walking on snowshoes?

Q3. When using poles, which part of the body will get more of a workout?

ANTICIPATED ANSWERS

A1. Roll your weight onto your snowshoes and then rise.

A2. You should avoid walking near rocks, trees and shrubs.

A3. The upper body and arms will get more of a workout if you are using your poles.

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END OF LESSON CONFIRMATION

Once cadets have had suitable time for practice, they should participate in a winter hike for the remainder of the time allocated to this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

Cadets should practice snowshoeing techniques until they are more comfortable with the various techniques and manoeuvres.

METHOD OF EVALUATION

Nil.

CLOSING STATEMENT

Snowshoeing can be a fun winter adventure training activity. It allows cadets to remain active and they will learn a new hiking skill.

INSTRUCTOR NOTES/REMARKS

This lesson is best delivered under the supervision of a cold weather instructor.

EO C123.02 (Explain Snowshoe March Discipline) shall be conducted prior to this lesson.

The route chosen for the march should cover different types of terrain, allowing the cadets a full snowshoeing experience, and simulating most conditions found in the field.

REFERENCES

A2-009 A-CR-CCP-107/PT-002 D Cdts. (1978). *Royal Canadian Army Cadets Course Training Plan Corps Training Program Winter Adventure Training Manual.* Ottawa, ON: The Department of National Defence.

C2-013 (ISBN 0-8117-2928-1) Griffin, S.A. (1998). *Snowshoeing.* Mechanicsburg, PA: Stackpole Books.

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