ROYAL CANADIAN ARMY CADETS

SILVER STAR

INSTRUCTIONAL GUIDE

SECTION 7

EO C322.01 – PRACTICE NAVIGATION AS A MEMBER OF A SMALL GROUP

Total Time: 90 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-703/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.

Review the activities in TP 2 to confirm local resources required and prepare the route to be used to include grid references and bearings.

Prepare a route based on the area and activity.

If assistant instructors are not available, determine a safety bearing to a known location.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP 1 to give direction on procedures and to illustrate the application of rules for the navigation exercise.

A practical activity was chosen for TP 2 as it is an interactive way to allow cadets to experience navigation in a safe, controlled environment. This activity contributes to physical fitness and to the development of navigation skills and knowledge in a fun and challenging setting.

A group discussion was chosen for TP 3 as it allows the cadets to interact with their peers and share their knowledge, experiences, opinions, and feelings about navigation training.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have practiced navigation as a member of a small group.

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IMPORTANCE

It is important for cadets to practice navigation skills taught in Silver Star using a map, compass and a GPS receiver. Participation in these activities contributes to the development of navigation skills and knowledge in a fun and challenging setting. Cadets will rely on this skill set throughout navigation and expedition training.

Teaching point 1 **Attend a Safety Briefing**

Time: 10 min Method: Interactive Lecture



This briefing is being conducted to pass on vital information and to answer any questions regarding the safe conduct of a navigation activity, to include:

- actions that can be taken if they become lost, may include:
  - returning to the previous checkpoint;
  - using a radio, if available; or
  - following a safety bearing to a known location;
- a time limit for the activity of 55 minutes;
- boundaries set for the conduct of the activity;
- rules and safety procedures for the activity; and
- a narrative of the activity being conducted.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What actions shall be taken if a group becomes lost?

Q2. What is the time limit for this activity?

Q3. What are the boundaries for this activity?

ANTICIPATED ANSWERS

A1. If a group becomes lost, they should return to the previous checkpoint, use a radio, if available or follow a safety bearing to a known location.

A2. This activity will last no more than 55 minutes.

A3. The answers to this question will vary based on the local area used.

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Teaching point 2 **Have the Cadets Participate in a Navigation Activity**

Time: 55 min Method: Practical Activity



Conduct one of the following activities in the time allocated. If time permits, conduct both activities. Prepare for each activity in advance using available resources.

NAVIGATION TRAIL

Cadets will be given a map, compass and GPS receiver. Upon arrival at each point, cadets will be given directions by a staff member travelling with the group or at a checkpoint. (magnetic or grid bearing and distance in metres or paces) to follow from one checkpoint to the next. The course will consist of a minimum of six legs, approximately 100–200 m in length. When each group arrives at the checkpoint, they will compare the grid reference (GR) on the map with that on the GPS receiver, determine the distance between each checkpoint and be given directions to the next checkpoint. The group with the most accurate GRs and distance between each checkpoint and the fastest time is the winning group.

NAVIGATION BRAIN TEASER

Using a map, compass and GPS receiver, cadets will navigate to predetermined points on the map. The course will consist of a minimum of six legs, approximately 100–200 m in length. Following the clues provided, when each group arrives at the checkpoint, they will record the GR on the GPS receiver (to ensure they were at each checkpoint) and be given clues (magnetic bearing, GR, or distance) directing them to another checkpoint. The clues should make the cadets think about and use their navigations skills to find the next checkpoint. The group that locates the most checkpoints and has the fastest time is the winning group.

PHOTO FINISH

Create a sheet of 12 - 20 prominent but relatively small landmarks within the immediate area of the cadet training area. Each landmark should be given a point value based on the difficulty to locate the object. Instructions must include the Datum (NAD 83) and the reference system (MGRS) to set on the GPS. Groups of cadets will then seek out the landmark and upon finding one record the 10 figure MGRS grid reference of the object. The group that gives the correct GR of landmarks to achieve the highest point score in the time allocated wins.



Depending on terrain selected and complexity of the navigation instructions, a navigation trail can be as easy or as challenging as you wish to make it.

ACTIVITY 1 – NAVIGATION TRAIL

OBJECTIVE

The objective of the Navigation Trail activity is to have the cadets, as a member of a small group, use navigation training taught during Silver Star.

RESOURCES

- GPS receiver (one per group),

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- Topographical map of the area (one per group),
- Compass (one per group), and
- A predetermined navigation route.

ACTIVITY LAYOUT

Clearly mark the start and finish lines.

ACTIVITY INSTRUCTIONS



To keep things interesting, interchange the type of bearing and distance directions for each checkpoint (eg, magnetic or grid, paces or metres).

1. Divide the cadets into groups by the number of GPS receivers available.
2. Issue each group a map, compass and GPS receiver.
3. Have the cadet leading the group plot the bearing and distance onto the map.
4. Start groups at two-minute intervals and record start times.
5. Have cadets record GRs and distance for each leg.
6. Have cadets alternate turns leading the group at least once.
7. Record the finish time for each group.
8. Compare the results of each group.
9. The group with the most accurate GRs and distances between each checkpoint and the fastest time is the winning group.



If available, use an assistant instructor at each checkpoint to answer questions and to prevent groups from following each other or sharing answers.

SAFETY

N/A.

ACTIVITY 2 – NAVIGATION BRAIN TEASER

OBJECTIVE

The objective of the Navigation Brain Teaser activity is to have the cadets, as members of a small group, use their navigations skills to find as many checkpoints as possible.

RESOURCES

- GPS receiver (one per group),
- Topographical map (one per group),

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- Compass (one per group), and
- A predetermined navigation route.

ACTIVITY LAYOUT

- Clearly mark the start and finish lines.
- Position a clue at each point to direct the groups to the next point.

ACTIVITY INSTRUCTIONS



To keep things interesting, the clues should not be too easy or too hard for the cadets to find each checkpoint. Stagger the clues to prevent groups from following each other or sharing answers.

1. Divide the cadets into groups by the number of GPS receivers available.
2. Issue each group a map, compass and GPS receiver.
3. Give the clue for the first checkpoint to the cadet leading the group.
4. Start groups at two-minute intervals and record start times.
5. On a piece of paper, have cadets record clues in the order they complete the checkpoints.
6. Have cadets alternate turns leading the group at least once.
7. Collect sheets and record the finish time for each group.
8. The group that locates the most checkpoints and has the fastest time is the winning group.



If available, use an assistant instructor at each checkpoint to give cadets the next clue and answer questions.

SAFETY

N/A.

ACTIVITY 3 – PHOTO FINISH

OBJECTIVE

The objective of the Photo Finish activity is to have the cadets, as members of a small group, use a GPS to locate a series of ten figure GRs.

RESOURCES

- GPS receiver (one per group),
- Photo Hunt activity sheet including 12 to 20 landmark photos and GPS setup information (one per group),

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ACTIVITY LAYOUT

- Create a photo hunt activity sheet to include 12 to 20 photos of prominent landmarks in the area of the training location. Landmarks should be small enough that an accurate grid reference can be obtained for the location (+/- 15 m), eg, an intersection street sign, legion cenotaph, advertising sign, etc. Landmarks must not be on private property without the express permission of the landowner. The sheet must also include the applicable GPS setup information, eg, Datum (NAD 83) and grid system (MGRS).
- Create an answer sheet using a GPS with the same setup information as prescribed on the photo hunt activity sheet.
- Establish a finish time for the activity, which may include a point score penalty system for late arrivals.
- Ensure GPS units are not set to the same setup information as listed on the photo hunt activity sheet.
- Establish a finish location.

ACTIVITY INSTRUCTIONS



To keep things interesting, the difficulty of finding the landmarks should vary and point values should be based on difficulty, eg, distance and/or obscurity of the landmark.

1. Divide the cadets into groups by the number of GPS receivers available.
2. Issue each group a photo hunt activity sheet and GPS receiver.
3. Have the cadets assign a peer leader for the group.
4. Groups may start at the same time or at intervals depending on the number of groups.
5. On a piece of paper, have cadets record the GR of each landmark as they find it.
6. Have cadets alternate using the GPS to identify the GR.
7. Collect sheets and record the point score less any time penalty for each group.
8. The group that has the highest point score is the winning group.

SAFETY

Cadets shall be briefed on boundaries which must take into account any dangerous obstacles or crossings. If radios are available each group should be given a radio.

CONFIRMATION OF TEACHING POINT 2

The cadets' participation in the navigation activities will serve as the confirmation of this TP.

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Teaching point 3 **Conduct a Debriefing**

Time: 15 min Method: Group Discussion

BACKGROUND KNOWLEDGE

GROUP DISCUSSION



TIPS FOR ANSWERING/FACILITATING DISCUSSION

- Establish ground rules for discussion, eg, everyone should listen respectfully; don't interrupt; only one person speaks at a time; no one's ideas should be made fun of; you can disagree with ideas but not with the person; try to understand others as much as you hope they understand you; etc.
- Sit the group in a circle, making sure all cadets can be seen by everyone else.
- Ask questions that will provoke thought; in other words avoid questions with yes or no answers.
- Manage time by ensuring the cadets stay on topic.
- Listen and respond in a way that indicates you have heard and understood the cadet. This can be done by paraphrasing their ideas.
- Give the cadets time to respond to your questions.
- Ensure every cadet has an opportunity to participate. One option is to go around the group and have each cadet answer the question with a short answer. Cadets must also have the option to pass if they wish.
- Additional questions should be prepared ahead of time.

Suggested Questions

Q1. What navigation skills were required to complete the activity?

Q2. What was the hardest part of the activity to complete?

Q3. What was the most exciting part of the activity?

Q4. How will the activity help you with navigation in the future?



Other questions and answers will develop throughout the group discussion. The group discussion should not be limited to only those suggested.



Reinforce those answers given and comments made during the group discussion, ensuring the teaching point has been covered.

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CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the group discussion will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the navigation activities and the group discussion will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Navigating using a GPS receiver or a map and compass are skills that can also be used in situations outside the Cadet Program. True proficiency in the skills used during these activities can only be achieved by practicing. These activities allow the cadets the opportunity to develop their navigation skills and knowledge in a fun and challenging setting.

INSTRUCTOR NOTES/REMARKS

The intent of this activity is to give the cadet experience navigating with a map and compass, determine distance and follow a bearing from point-to-point.

This activity may be conducted using any available map appropriate for this activity.

This complementary activity can be conducted up to three times during supported complementary days or sessions. Participation is limited to a maximum of nine periods.

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.

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