ROYAL CANADIAN ARMY CADETS

GREEN STAR

INSTRUCTIONAL GUIDE

SECTION 2

EO M122.02 – IDENTIFY MARGINAL INFORMATION AND CONVENTIONAL SIGNS

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-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 interactive lecture was chosen for TP 1 to orient the cadets to marginal information and generate interest.

An in-class activity was chosen for TP 2 as an interactive way to provoke thought and stimulate interest in conventional signs.

INTRODUCTION

REVIEW

The pertinent review for this lesson, from EO M122.01 (Section 1), Identify Types of Maps, will include:

Q1. What type of map is most commonly used by the military?

Q2. What are three things we should protect maps from?

Q3. How are maps to be stored?

ANTICIPATED ANSWERS

A1. Topographical.

A2. Water, dirt, and wind.

A3. Maps should be stored in a dry place, and rolled, folded, or laid flat.

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OBJECTIVES

By the end of this lesson the cadet shall be expected to identify map features to include: marginal information, and conventional signs found on a topographical map.

IMPORTANCE

Cadets shall be able to identify features on the map as they relate to objects on the ground. The cadets will apply this knowledge during training where any type of map is to be used.

Teaching point 1 **Identify marginal information found on a topographical map.**

Time: 20 min Method: Interactive Lecture

MARGINAL INFORMATION

The margins provide information important to the full understanding and use of the map. Before using any unfamiliar map, it is important to have a good look at the information contained in its margins. The layout and contents of the marginal information should be in relatively the same area for all topographical maps. This information includes:

- name of map sheet,
- number of the map and index of adjoining maps,
- date of map data,
- map scale,
- scale bars or graphic linear scales,
- contour interval,
- military index number, normally found at the top right corner of the map sheet, which is used for ordering additional maps,
- declination diagram,
- Universal Transverse Merecator Grid System (UTM), and
- legend of conventional signs.

Name of Map Sheet. For ease of reference the name of the map is usually a major community or district the map covers (you will find this at the bottom centre of the margin, as well as in the bottom right corner).



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Figure 1 Name of Map Sheet

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Number of the Map and Index of Adjoining Maps. A diagram showing the position of the map sheet in relation to adjoining sheets is shown near the lower right hand margin. The diagram shows the sheet numbers of the adjoining sheets and accentuates the sheet in hand.

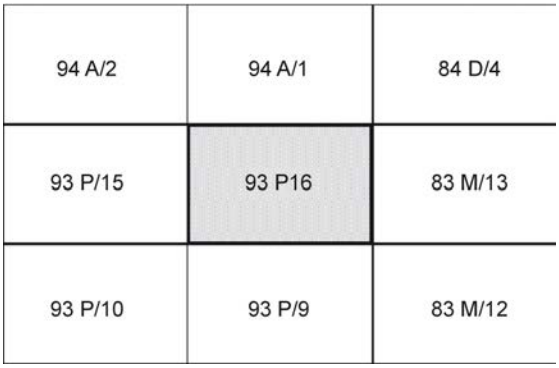

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Figure 2 Index of Adjoining Maps

Date of Map Data. Helps to indicate the amount of change that may have occurred since the map was printed (you will find it in the copyright information in the bottom left and right corners).

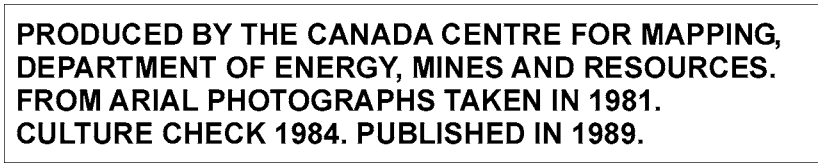

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Figure 3 Date of Map Data

Map Scale. The scale of the map, e.g. 1:50 000, is shown prominently in the bottom margin.

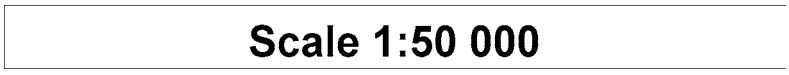

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Figure 4 Map Scale

Scale Bars. Used to help measure distance on the map (you will find them under the map scale, bottom centre). Notice how the left end of the scale bars is divided into tenths for measuring accurate distances.

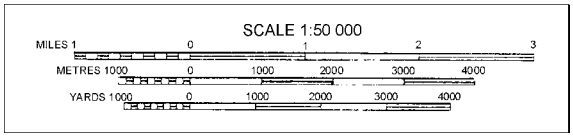

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Figure 5 Scale Bars

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Contour Interval. Used to indicate a set distance between the contour lines. The contour interval could be in feet or metres (you will find this in the bottom margin, just right of the scale bars).



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Figure 6 Contour Interval

Military Index Number for Ordering This Map. The index is found in the top right corner of the map sheet; used for ordering additional maps, and includes the following information:

- Map series number, which identifies both the area and the scale of the map and the series number taken from the map catalogue.
- Sheet numbers or name to identify the map (identity by sheet name is rare).
- Edition designation (identifies the currency of the information shown on the map; the edition number will increase with each revision).



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Figure 7 Military Index Number

Declination Diagram. Each map contains the information necessary to relate the true, grid, and magnetic bearing of any line within the area covered by the map sheet. This information is given in the form of a diagram with explanatory notes. The diagram is in the right side margin.

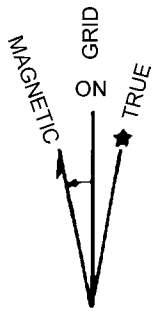

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Figure 8 Declination Diagram

Universal Transverse Merecator (UTM) Grid System. The UTM grid is divided into “zones”, each covering six degrees of longitude and eight degrees of latitude. The 60 longitude bands are numbered and the 20 latitude

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bands are lettered. Each grid zone is one rectangle of the grid pattern, established by the bands and designated by the figures of the longitude band followed by the letter of latitude band (e.g. 17T).

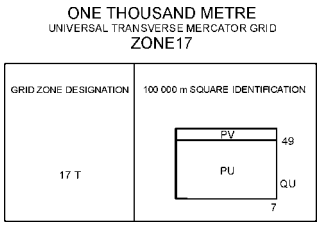

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Figure 9 UTM Grid System

Conventional Signs. A table showing the conventional signs used on the sheet in their correct colours with their descriptions is shown in the bottom or side margin, plus in a more complete list on the back of the map.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. Where are the map name, scale, and scale bar found?

Q2. Where is the date of map data found?

Q3. Where is the declination diagram found?

ANTICIPATED ANSWERS

A1. At the bottom centre of the map sheet.

A2. Bottom right and bottom left corner of the map sheet.

A3. Right side of the map sheet.

Teaching point 2 **Identify conventional signs.**

Time: 30 min Method: In-Class Activity

BACKGROUND INFORMATION

Conventional Signs

The information in this teaching point is presented to provide the instructor with background knowledge of conventional signs. The instructor may choose to review the information with the cadets prior to the commencement of the activity outlined below.

A number of symbols are used to indicate an object or item of detail that cannot be shown either by outline or by a line symbol. Most have been established through long usage and standardization agreements. The meaning of most symbols is obvious. If there is doubt however, consult the table of conventional symbols located on every map. Located on the back of most maps you will find many additional conventional signs.

Map reading not only involves the ability to interpret the symbols shown on the map and to understand the information given in pictorial or written form, but it also involves a true understanding of the ground portrayed and an appreciation of the reliability and value of the particular map being used.

Where the symbol may have more than one meaning, the sign or symbol will be accompanied by a descriptive word (e.g. tank or tower).

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The use of different colours is a major means of showing and distinguishing detail of any or all types of detail.

Man-made Features by Colour

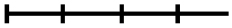
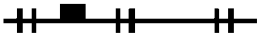
Red is used to identify paved roads and highway numbers. Red is also used to shade in areas of urban development.

Road paved surface 2 lane; 1 lane (red)	

Orange is used to represent unpaved roads.

Road loose surface 2 lane; 1 lane (orange)	

Black is used for cultural features, toponyms (place names), some symbols and precise elevations.

Tunnel	
Railway (single track)	
Railway (multiple track) with station	
Road/Track	
School	
Fire Department	
Police Station	
Church	
Buildings	

Natural Features by Colour

Brown is used for contour lines, contour elevations, spot elevations, sand, cliffs, and other geological features.

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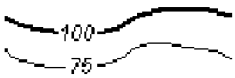
Contours (dark)	
Cliff (dark)	
Sand (brown)	

Blue is used for water or permanent ice features (i.e., rivers, lakes, swamps and ice fields), names of water features and the grid lines.

River with arrow indicating direction of flow	
Rapids	

Green, which is used for vegetation features (i.e., woods, orchards and vineyards).

Orchard (green)	

Additional Features by Colour

Grey is used for the legend of conventional signs on the back of the map.

Purple is used for updates that are made over top of the original map information.

ACTIVITY – BUILDING MAPVILLE

Time: 31 min

OBJECTIVE

- By the end of this lesson, the cadet shall be expected to identify and draw conventional signs.

RESOURCES

- Flipchart/whiteboard.
- Markers/dry erase markers.

ACTIVITY LAYOUT

This activity will be a participative exercise designed to involve the cadets, while teaching the various conventional signs found on a topographical map. The cadets will design and draw the map for a new town called Mapville.

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Activity Instructions:

- The instructor will draw a large outline of a topographical map on the flipchart/whiteboard at the front of the room.
- The cadets will be asked to approach the front, one at a time, and draw a conventional sign on the developing map of Mapville.
- The cadets must explain what the sign is for and why they chose to put it where they did.
- No sign may be used more than once.
- The instructor may choose to take a photograph of the finished product, to display around the parade area.

SAFETY

- This is a supervised activity.

INSTRUCTOR GUIDELINES

- Instructors are to continuously supervise and monitor the activity to ensure the material being presented is being utilized correctly.
- In the event of misplaced or misused conventional signs, the instructor shall stop the cadets, correct the problem, and have the cadets return to their seats. Have the cadets attempt another sign at the end of the activity.
- The instructor is to observe carefully, as this activity will constitute the final confirmation of the lesson.

CONFIRMATION OF TEACHING POINT 2

The activity outlined above will serve as the confirmation of this teaching point.

END OF LESSON CONFIRMATION

The activity at the end of TP2 will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

Nil.

METHOD OF EVALUATION

The cadet will be required to properly identify marginal information and conventional signs found on a topographical map.

CLOSING STATEMENT

The information presented in this lesson will enable the cadet to identify features on the map as they relate to objects on the ground. The cadets will apply this knowledge during any training where any type of map is to be used.

INSTRUCTOR NOTES/REMARKS

Nil.

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REFERENCES

A2-004 B-GL-382-005-FP-001 Canadian Forces. (1976). *Maps, Fields, Sketching, and Compasses* (Vol. 8). Ottawa, ON: National Defence.

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