MODIFIED LESSON INSTRUCTIONS AND INSTRUCTIONAL GUIDES – TPS 1 AND 2 OF EO M160.02

A-CR-CCP-801/PG-001

EO M160.02 – IDENTIFY FEATURES OF A RUNWAY

1. **Performance.** Identify Features of a Runway.

2. **Conditions**

   a. Given:

      (1) supervision; and

      (2) assistance as required.

   b. Denied: N/A.

   c. Environmental: Suitable classroom facilities to accommodate the entire group.

3. **Standard.** The cadet shall identify features of a runway, to include:

   a. runway lights; and

   b. runway numbering.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Identify and explain runway lights, to include that different coloured lights identify different parts of the runway.	Interactive Lecture	5 min	A3-001 (p. 93)
TP2	Identify and explain runway numbering.	Interactive Lecture	5 min	A3-001 (p. 91)

5. **Time**

   a. Introduction/Conclusion: 5 min

   b. Interactive Lecture: 10 min

   c. Total: 15 min

6. **Substantiation.** The interactive lecture method was chosen as it allows the instructor to make a semi-formal presentation of the material where the cadets can participate by asking or responding to questions and commenting on the material. For this lesson, this method is most effective as it matches well the taxonomic level of the material and is age-appropriate by virtue of its participatory nature.

7. **References.** A3-001 A-CR-CCP-263/PT-001, *From the Ground Up: Millennium Edition.* (2000). Ottawa, ON: Aviation Publishers Co. Limited.

8. **Training Aids.** Presentation aids (i.e. whiteboard/flipchart/OHP/multimedia projector) appropriate for classroom/training area.

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

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

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

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ROYAL CANADIAN AIR CADETS

PROFICIENCY LEVEL ONE

INSTRUCTIONAL GUIDE

SECTION 2

EO M160.02 – IDENTIFY FEATURES OF A RUNWAY

Total Time:	15 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in Chapter 4 of the QSP. 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

N/A.

APPROACH

The interactive lecture method was chosen as it allows the instructor to make a semi-formal presentation of the material where the cadets can participate by asking or responding to questions and commenting on the material. For this lesson, this method is most effective as it matches well the taxonomic level of the material and is age-appropriate by virtue of its participatory nature

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall be expected to identify features of a runway.

IMPORTANCE

It is important for cadets to understand the features of a runway as it will be helpful during tours and familiarization flights. The various features of runways will be referred to in future aviation lessons at the squadron and the CSTC. In the aviation industry, pilots and air traffic controllers require this information to perform their jobs.

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Teaching Point 1 **Identify and Explain Runway Lights**

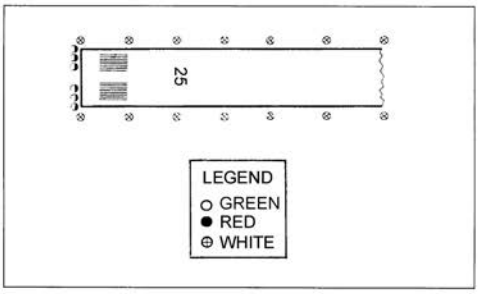
Time: 5 min Method: Interactive Lecture



Create a large runway on the floor, whiteboard or flipchart.

RUNWAY LIGHTS

Runways are lined down both sides by white lights. These lights are used to define the overall area of the runway on each side. Runways also contain red/green lights at the ends. These lights are double sided with red on one side and green on the other. As seen for the pilot's perspective, the red side of the lights faces toward the runway and indicates the end of the runway. The green side faces away from the runway and shows the beginning of the runway to aircraft that are landing.



Royal Canadian Air Cadet Manual, Proficiency Level One Handbook, Cadets Canada, 1998

Figure 14-2-1 Runway Lights

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What colour lights define the runway on each side?

Q2. What is the importance of the red lights?

Q3. What is the importance of the green lights?

ANTICIPATED ANSWERS

A1. White lights.

A2. Red lights indicate the end of the runway.

A3. Green lights indicate the beginning of the runway.

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Teaching Point 2 **Identify and Explain Runway Numbering**

Time: 5 min Method: Interactive Lecture

RUNWAY NUMBERING

The runway number is always indicated in large print as a two-digit number at the end of the runway. Runways are numbered according to their magnetic direction and are rounded off to the nearest ten degrees. Once rounded, the hundreds and tens digits are used to number the runway. For example, a runway that points in the direction of 266 degrees magnetic would be numbered 27. Therefore, the highest runway number possible is 36 (360 degrees).

When runways run parallel, they are designated left or right (e.g. 27L and 27R). The runway number is displayed at the approach end of each runway. A single runway would, therefore, have different numbers at each of its two ends. These numbers would be 180 degrees apart. For example, runway 09 would be numbered 27 at the other end.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. On what basis are runways numbered?

Q2. If a runway points in the direction of 176 degrees magnetic, how would it be numbered?

Q3. If a runway points in the direction of 43 degrees magnetic, how would it be numbered?

ANTICIPATED ANSWERS

A1. Their magnetic direction.

A2. 18 (Round 176 to 180, and use only the hundreds and tens digits).

A3. 04 (Round 43 to 40, and use only the hundreds and tens digits).

END OF LESSON CONFIRMATION

QUESTIONS

Q1. What colour lights define the runway on each side?

Q2. If a runway points in the direction of 241 degrees magnetic, how would it be numbered?

Q3. If a runway points in the direction of 358 degrees magnetic, how would it be numbered?

ANTICIPATED ANSWERS

A1. White lights.

A2. 24 (Round 241 to 240, and use only the hundreds and tens digits).

A3. 36 (Round 358 to 360, and use only the hundreds and tens digits).

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CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Being familiar with the various features of runways can assist cadets in a number of areas of their training. Understanding the features of a runway enhances cadet knowledge of aerodrome components and gives further insight into the runways' role with respect to take-off and landing procedures of aircraft.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

A3-001 A-CR-CCP-263/PT-001, *From the Ground Up: Millennium Edition* (2000). Ottawa, ON: Aviation Publishers Co. Limited.

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