MODIFIED LESSON INSTRUCTIONS AND INSTRUCTIONAL GUIDES – TP 1 OF EO M130.02

A-CR-CCP-801/PG-001

EO M130.02 – DESCRIBE THE MAIN COMPONENTS OF AN AIRPLANE

1. **Performance.** Describe the Main Components of an Airplane.

2. **Conditions**

   a. Given:

      (1) supervision; and

      (2) assistance as required.

   b. Denied: N/A.

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

3. **Standard.** The cadets shall identify and describe the five major components of an airplane, to include:

   a. fuselage;

   b. wings;

   c. empennage;

   d. landing gear; and

   e. propulsion system.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Identify and explain the components of an airplane, to include: a. fuselage; b. wings; c. empannage; d. landing gear; and e. propulsion system.	Interactive Lecture	10 min	A3-001 (p. 9-13)

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.

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8. **Training Aids.** Presentation aids (i.e. whiteboards/flipcharts/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 M130.02 – DESCRIBE THE MAIN COMPONENTS OF AN AIRCRAFT

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.

Photocopy the handout Figure 12A-1 Components of an Airplane for each cadet, located at the end of this document.

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 describe the main components of an airplane.

IMPORTANCE

A basic understanding of the components of an airplane will provide a foundation for further aviation topics. It will create a familiarity with airplanes that will contribute to the cadets' appreciation of the familiarization of flying and aviation tour experiences.

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Teaching Point 1 **Identify and Explain the Main Components of an Airplane**

Time: 10 min Method: Interactive Lecture

MAIN COMPONENTS OF AN AIRPLANE

There are five main components of an airplane.

Fuselage. The body of the aircraft, designed to accommodate the crew, passengers and cargo. The cockpit or crew flight deck is the part of the fuselage where the pilot and flight crew operate the aircraft. The fuselage is the structural body to which the wings, the tail section, landing gear and (in most small aircraft) the engine are attached.

Wings. Fitted to the fuselage on both sides. The primary purpose of the wings is to support the aircraft in flight by producing lift. The wing root is where the wing meets the fuselage. The wing tip is the part farthest from the fuselage. The leading edge is the front edge of the wing running from wing root to wing tip. The trailing edge is the back edge of the wing running from wing root to wing tip.

Empennage. Refers to the whole tail section of a plane. It includes the horizontal stabilizer, elevator, vertical stabilizer, and rudder. The horizontal stabilizer is at the back of the aircraft, and helps keep the aircraft stable as it flies through the air. The elevator is hinged to the horizontal stabilizer and is operated by moving the control column forward and backward controlling pitch. The vertical stabilizer, also called the fin, is an upright surface on the empennage. The rudder is hinged to the fin and is operated by the rudder pedals in the cockpit. The rudder controls yaw.

Landing gear. Supports the aircraft when it is on the ground and absorbs the shock of landing. All aircraft have their landing gear under the main part of the fuselage or wings. Landing gear can be fixed or retractable. Fixed gear is attached to the airplane in a permanent position. Retractable gear can fold up into the wings or the fuselage.

Propulsion. Produced by an internal combustion engine with a two or three bladed propeller or a gas turbine (jet) engine. A jet can be used to power a propeller – this is called a turboprop engine.

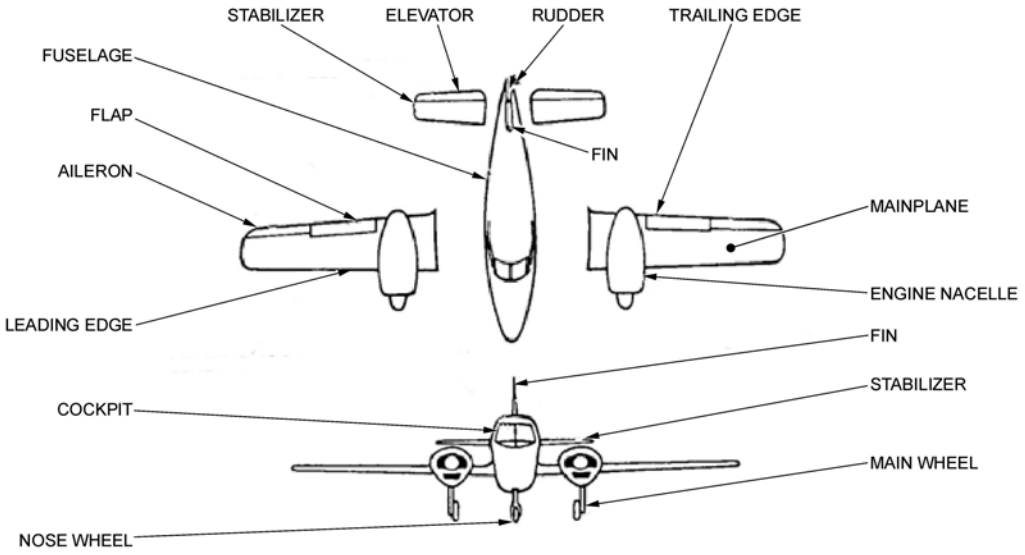
The cowling (also called the nacelle) encloses the engine and streamlines the airplane to reduce drag. The cowling provides cooling of the engine by ducting cool air around the engine.



Distribute the handout of Figure 12A-1 Components of an Airplane, located at the end of this document.

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Figure 12-2-1 Airplane Components

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What is the fuselage?

Q2. What is the primary purpose of the wings?

Q3. Name the five main components of an airplane.

ANTICIPATED ANSWERS

A1. The body of the aircraft, designed to accommodate the crew, passengers and cargo.

A2. To support the aircraft in flight by producing lift.

A3. Fuselage, wings, empennage, landing gear and propulsion system.

END OF LESSON CONFIRMATION

The questions for TP1 will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

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METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Being able to describe the main components of an airplane will give cadets the knowledge needed to appreciate and successfully participate in further aviation topics.

INSTRUCTOR NOTES/REMARKS

N/A.

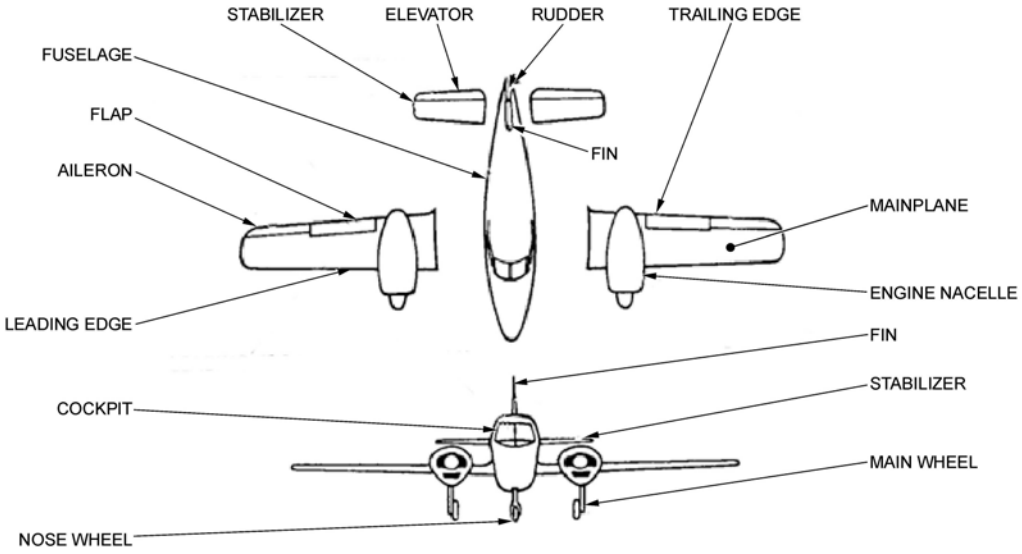
REFERENCES

A3-001 A-CR-CCP-263/PT-001 *From the Ground Up: Millennium Edition (28th Edition)*. (2000). Ottawa, ON: Aviation Publishers.

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Chapter 12, Annex A

COMPONENTS OF AN AIRPLANE



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Figure 12A-1 Components of an Airplane

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