EO C331.03 – IDENTIFY ASPECTS OF HELICOPTER AERODYNAMICS

1. **Performance.** Identify Aspects of Helicopter Aerodynamics.

2. **Conditions**

   a. Given:

      (1) Supervision, and

      (2) Assistance as required.

   b. Denied: N/A.

   c. Environmental: Classroom or training area large enough to accommodate the entire group.

3. **Standard.** The cadet shall identify aspects of helicopter aerodynamics, to include:

   a. the main rotor,

   b. the anti-torque rotor, and

   c. the control inputs.

4. **Teaching Points**

TP	Description	Method	Time	Ref
TP1	Describe the main rotor of a helicopter, to include: a. rotor systems, b. rotor drag, and c. factors influencing rotor thrust.	Interactive Lecture	15 min	C3-249 (p. 45)
TP2	Describe the anti-torque rotor of a helicopter, to include: a. location on the airframe, b. function, and c. power source.	Interactive Lecture	5 min	C3-249 (p. 67)
TP3	Explain the control inputs of a helicopter, to include: a. collective, b. cyclic, and c. pedals.	Interactive Lecture	5 min	C3-249 (p. 77)

5. **Time**

   a. Introduction/Conclusion: 5 min

   b. Interactive Lecture: 25 min

   c. Total: 30 min

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Verify against the official publication.

6. **Substantiation.** An interactive lecture was chosen for this lesson to introduce the cadet to aspects of helicopter aerodynamics.

7. **References.** C3-249 (ISBN 978-1-56027-649-4) Wagtendok, W. J. (2006). *Principles of Helicopter Flight: Second US Edition*. Newcastle, WA: Aviation Supplies & Academics, Inc.

8. **Training Aids**

   a. Presentation aids (eg, whiteboard/flip chart/OHP/multimedia projector) appropriate for the classroom/training area, and

   b. Model of a helicopter.

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

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

11. **Remarks.** If the squadron has the opportunity to participate in familiarization flights in a helicopter, this EO could be conducted at that time.

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