EO M431.01 – EXPLAIN FEATURES OF WING DESIGN

1. **Performance**: Explain Features of Wing Design
2. **Conditions**:
   a. Given:
      (1) Supervision, and
      (2) Assistance as required.
   b. Denied: Nil.
   c. Environmental: Classroom or training area large enough to accommodate the entire group.
3. **Standard**: The cadet shall explain features of wing design, to include:
   a. airfoils,
   b. high-lift devices, and
   c. spoilers and speed brakes.
4. **Teaching Points**:

TP	Description	Method	Time	Refs
TP1	Explain airfoils, to include: a. chord, b. conventional airfoils, c. laminar flow airfoils, d. planform, e. aspect ratio, f. angle of incidence, g. wash-out, and h. wash-in.	Interactive Lecture	10 min	C3-116 (pp. 26–27)
TP2	Explain high-lift devices, to include: a. wing-tip design, b. wing fences, c. slats, d. slots, and e. flaps.	Interactive Lecture	10 min	C3-116 (pp. 27–30)
TP3	Explain spoilers and speed brakes.	Interactive Lecture	5 min	C3-116 (p. 28)

5. **Time**:

a.	Introduction / Conclusion:	5 min
b.	Interactive Lecture:	25 min
c.	Total:	

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Verify against the official publication.

30 min

6. **Substantiation**: An interactive lecture was chosen for this lesson to clarify, emphasize, and summarize features of wing design.

7. **References**: C3-116 ISBN 0-9680390-5-7 MacDonald, A. F. & Peppler, I. L. (2000). *From the ground up: Millennium edition*. Ottawa, ON: Aviation Publishers Co. Limited.

8. **Training Aids**:

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

   b. Model of a light fixed-wing aircraft with wing struts, fixed gear and control surface detail, and

   c. Model of a wing.

9. **Learning Aids**: Nil.

10. **Test Details**: This EO is assessed IAW Chapter 3, Annex B, Aviation Subjects–Combined Assessment PC.

11. **Remarks**: Cadets who are qualified Advanced Aviation may assist with this instruction.

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