EO M232.04 – RECOGNIZE THE FUNCTIONS OF OIL IN A FOUR-STROKE PISTON-POWERED ENGINE

1. **Performance**: Recognize the Functions of Oil in a Four-stroke Piston-powered Engine

2. **Conditions**:

   a. Given:

      (1) Hand cream;

      (2) Supervision; and

      (3) Assistance as required.

   b. Denied: N/A.

   c. Environmental: Suitable classroom facilities or training area large enough to accommodate the entire group.

3. **Standard**: In accordance with A-CR-CCP-263/PT-001, the cadet shall recognize the functions of oil in a four-stroke piston-powered engine, to include:

   a. lubricating;

   b. sealing;

   c. cooling; and

   d. flushing.

4. **Teaching Points**:

TP	Description	Method	Time	Refs
TP1	Explain how oil lubricates the engine and aspects of lubrication, to include: a. grades and viscosities of oil; and b. thinning of oil as temperature increases.	Interactive Lecture	5 min	C3-116 (pp. 57–59)
TP2	Allow the cadets to compare the friction and heat.	In-Class Activity	5 min	C3-116 (pp. 57–59)
TP3	Explain that oil seals the combustion chamber to prevent the expanding gases from leaking out during the power stroke.	Interactive Lecture	5 min	C3-116 (pp. 57–59)
TP4	Explain how oil cools hot spots in the engine.	Interactive Lecture	5 min	C3-116 (pp. 57–59)
TP5	Explain that oil removes and holds particles harmful to the engine.	Interactive Lecture	5 min	C3-116 (pp. 57–59)

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Verify against the official publication.

5. **Time**:

a.	Introduction / Conclusion:	5 min
b.	Interactive Lecture:	20 min
c.	In-Class Activity:	5 min
d.	Total:	30 min

6. **Substantiation**:

   a. An interactive lecture was chosen for TP1 and TP3 to TP5 to introduce the functions of oil in a four-stroke piston-powered engine and to give an overview of them.

   b. An in-class activity was chosen for TP2 as it is an interactive way to provoke thought and stimulate interest among cadets.

7. **References**: C3-116 A-CR-CCP-263/PT-001 (ISBN 0-9680390-5-7) MacDonald, A. F. and Peppler, I. L. (2000). *From the Ground Up: Millennium Edition.* Ottawa, ON: Aviation Publishers Co. Limited.

8. **Training Aids**:

   a. Presentation aids (e.g. whiteboard/flipchart/OHP) appropriate for the classroom/training area; and

   b. Hand cream.

9. **Learning Aids**: Hand cream.

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

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

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