EO C440.01 – DESCRIBE MODEL ROCKETRY

1. **Performance**: Describe Model Rocketry
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 describe model rocketry, to include:
   a. the parts of a model rocket engine,
   b. the parts of a model rocket,
   c. the flight profile of a model rocket, and
   d. model rocketry safety rules.
4. **Teaching Points**:

TP	Description	Method	Time	Refs
TP1	Describe the parts of a model rocket engine, to include: a. engine case, b. clay nozzle, c. black powder propellant, d. delay composition, e. ejection charge, and f. igniter.	Interactive Lecture	15 min	C3-162 C3-259
TP2	Describe the parts of a model rocket, to include: a. nose cone, b. body tube, c. fins, d. launch lug, e. engine stop, f. engine restraint, g. shock cord, and h. parachute.	Interactive Lecture	10 min	C3-162 C3-259

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TP	Description	Method	Time	Refs
TP3	Describe the flight profile of a model rocket, to include: a. ignition, b. power, c. coast / delay, d. ejection, e. descent, and f. landing.	Interactive Lecture	10 min	C3-162 C3-163 C3-259
TP4	Explain model rocketry safety rules.	Interactive Lecture	15 min	C3-162 C3-259

5. **Time**:

a.	Introduction / Conclusion:	10 min
b.	Interactive Lecture:	50 min
c.	Total:	60 min

6. **Substantiation**: An interactive lecture was chosen for this lesson to present basic information on model rocketry and summarize the teaching points.

7. **References**:

   a. C3-162 Beach, T. (1993). *Model rocketry technical manual*. Retrieved October 10, 2007, from http://www.estesrockets.com/assets/downloads/roecketrytechniques.pdf

   b. C3-163 Cannon, R. L. (1999). *A learning guide for model rocket launch systems*. Retrieved October 10, 2007, from http://www.estesrockets.com/assets/downloads/launchsystemguide.pdf

   c. C3-259 ISBN 978-0471472421 Stine, G. H. (2004). *Handbook of model rocketry*. Toronto, ON: John Wiley & Sons.

8. **Training Aids**:

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

   b. Model rocket cutaway,

   c. Model rocket kit,

   d. Model rocket engine, and

   e. Digital scale.

9. **Learning Aids**: Nil.

10. **Test Details**: Nil.

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

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