EO M490.05 – LIGHT FIRES USING IMPROVISED IGNITION

1. **Performance**: Light Fires Using Improvised Ignition

2. **Conditions**:

   a. Given:

      (1) Aluminium can,

      (2) Battery,

      (3) Chocolate,

      (4) Cordage,

      (5) Knife,

      (6) Magnesium fire starter,

      (7) Magnifying lens,

      (8) Shovel,

      (9) Steel wool,

      (10) Sunglasses,

      (11) Toothpaste,

      (12) Water,

      (13) Wire,

      (14) Supervision, and

      (15) Assistance as required.

   b. Denied: Nil.

   c. Environmental: Field exercise during the day, with a low to moderate rating under the Canadian Wildland Fire Information System (CWFIS).

3. **Standard**: The cadet shall light fires using improvised ignition by:

   a. selecting an improvised ignition from the following:

      (1) magnesium fire starter,

      (2) aluminium can and chocolate,

      (3) battery, wire and steel wool, and

      (4) magnifying lens;

   b. constructing the fire;

   c. lighting and maintaining the fire;

   d. extinguishing the fire; and

   e. repeating steps b–d for each type of ignition.

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4. **Teaching Points**:

TP	Description	Method	Time	Refs
TP1	Explain and demonstrate lighting a fire using a bow drill.	Demonstration	15 min	C3-003 (pp. 127–128)
TP2	Explain and demonstrate lighting a fire using a fire piston.	Demonstration	15 min	C3-315
TP3	Explain, demonstrate and have the cadets light a fire using a magnesium fire starter.	Demonstration and Performance	20 min	C3-002 (p. 275) C3-003 (p. 129)
TP4	Explain, demonstrate and have the cadets light a fire using an aluminium can and a bar of chocolate, to include: a. polishing the aluminium can base; and b. igniting tinder with the focused rays of the sun.	Demonstration and Performance	20 min	C3-314
TP5	Explain, demonstrate and have the cadets light a fire using a battery, wire and steel wool.	Demonstration and Performance	20 min	C3-002 (p. 275)
TP6	Explain, demonstrate and have the cadets light a fire using a magnifying lens.	Demonstration and Performance	20 min	C3-002 (p. 275) C3-003 (p. 129)

5. **Time**:

a.	Introduction / Conclusion:	10 min
b.	Demonstration:	30 min
c.	Demonstration and Performance:	80 min
d.	Total:	120 min

6. **Substantiation**:

a. A demonstration was chosen for TPs 1 and 2 to allow the cadets to observe lighting a fire with a bow drill and a fire piston, and to stimulate interest in lighting fires using improvised ignition.

b. A demonstration and performance was chosen for TPs 3–6 as it allows the instructor to explain and demonstrate lighting fires with improvised ignition and permits the cadets to practice lighting fires under supervision.

7. **References**:

a. C3-002 ISBN 0-00-653140-7 Wiseman, J. (1999). *The SAS survival handbook*. Hammersmith, London: HarperCollins Publishers.

b. C3-003 ISBN 1-896713-00-9 Tawrell, P. (1996). *Camping and wilderness survival: The ultimate outdoors book*. Green Valley, ON: Author.

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c. C3-314 Wildwood Survival. (2009). *Fire from a can of coke and a chocolate bar*. Retrieved February 9, 2009, from http://www.wildwoodsurvival.com/survival/fire/cokeandchocolatebar/index.html

d. C3-315 Primitive Ways. (1996). *The fire piston: Ancient firemaking machine*. Retrieved February 9, 2009, from http://www.primitiveways.com/fire_piston.html

8. **Training Aids**:

a. Aluminium can,

b. Battery,

c. Chocolate,

d. Cordage,

e. Bow drill,

f. Fire piston,

g. Fire extinguisher,

h. Gasoline,

i. Knife,

j. Magnesium fire starter,

k. Magnifying lens,

l. Rags,

m. Shovel,

n. Steel wool,

o. Sunglasses,

p. Toothpaste

q. Water, and

r. Wire.

9. **Learning Aids**:

a. Aluminium can,

b. Battery,

c. Chocolate,

d. Cordage,

e. Knife,

f. Magnesium fire starter,

g. Magnifying lens,

h. Steel wool,

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i. Sunglasses, and

j. Toothpaste.

10. **Test Details**: This EO is assessed IAW Chapter 3, Annex B, 490 PC.

11. **Remarks**:

a. Petroleum products such as gasoline should be handled with care due to its combustible properties. Avoid skin contact. Refer to Material Safety Data Sheet (MSDS).

b. Cadets who are qualified Survival Instructor may assist with this instruction.

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