ROYAL CANADIAN AIR CADETS

PROFICIENCY LEVEL FOUR

INSTRUCTIONAL GUIDE

SECTION 5

EO M490.05 – LIGHT FIRES USING IMPROVISED IGNITION

Total Time: 120 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-804/PG-001, *Proficiency Level Four Qualification Standard and Plan*, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

TPs 4 and 6 should be conducted on a sunny day.

For TPs 3–6, the cadets are only required to light the tinder.

PRE-LESSON ASSIGNMENT

Nil.

APPROACH

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.

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.

INTRODUCTION

REVIEW

Nil.

OBJECTIVES

By the end of this lesson the cadet shall be expected to light fires using improvised ignition.

IMPORTANCE

It is important for cadets to light fires using improvised ignition to demonstrate the basics for achieving the ignition of tinder. This is a fundamental skill that will enable the cadet to be warm and dry in any survival situation. Practicing these skills will enable the cadet to demonstrate these techniques to other cadets at the squadron.

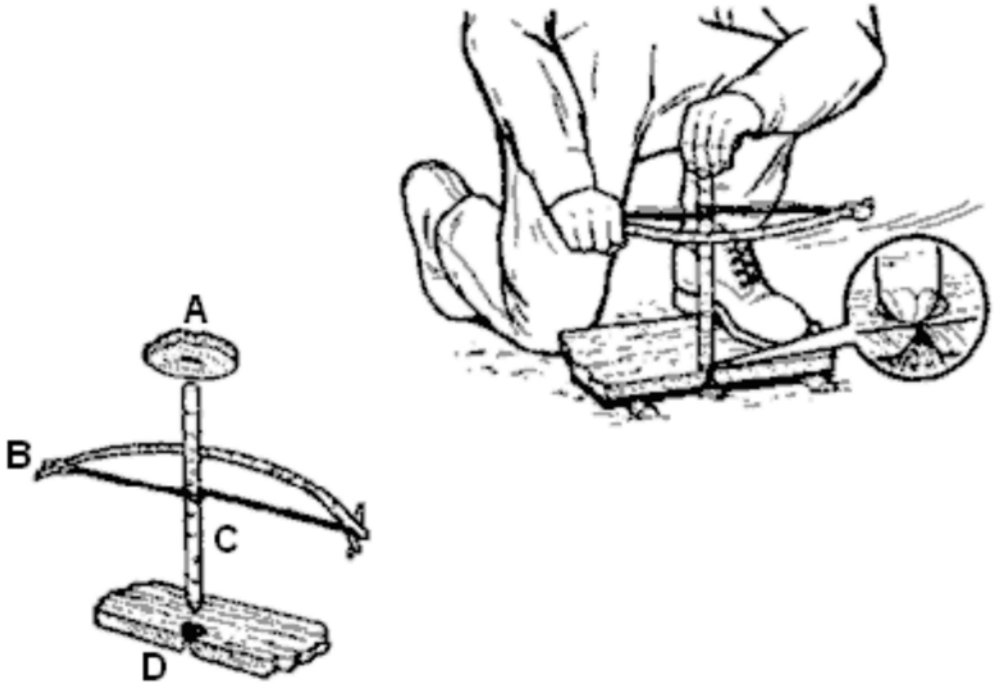
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Teaching point 1 **Explain and demonstrate lighting a fire using a bow drill.**

Time: 15 min Method: Demonstration

BOW DRILL

The bow drill is one of the oldest known methods of starting a fire.



Note. From U.S. Army Survival Handbook (p. 132), by Department of the Army, 2002, Guilford, CT: The Lyons Press.

Figure 1 The Bow Drill

The parts of a bow drill are:

A. The bearing block or handhold,

B. The bow,

C. The spindle or drill, and

D. The hearth or fire board.

The spindle is held at one end by the bearing block and at the other by the hearth. The middle of the bow string is wrapped around the spindle one or more times. Moving the bow back and forth causes the spindle to spin. This spinning movement and pressure on the bearing block causes friction at the spindle hearth contact point.

The Bearing Block or Handhold

The bearing block can be made of anything that will protect the hand and apply pressure to the top of the spindle. Hardwood is easiest to procure, but bone, antler and stone work best as they can be easily lubricated, do not create as much friction, and do not burn. An indentation should be cut into the bottom of the block, matching the top of the spindle. The handhold can be lubricated with fat, grease, mud, soap or oil from the hair or face.

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The Bow

The bow is constructed from a piece of wood and cordage. The bow string should be approximately 6 mm (1/4 inch) diameter cord. The bow should be approximately 60–75 cm (24–30 inches) long and have a curve that measures 8–10 cm (3–4 inches) high when the ends are placed on a flat surface. The bow should be constructed from green wood or dry hardwood approximately the thickness of the thumb. Notches cut into the ends of the bow will help keep the bow string in place. A clove hitch should be used to fasten the cordage to the ends of the bow. The bow should maintain the proper tension on the bow string, allowing it to spin the spindle between the bearing block and the hearth. When using natural cordage, use less tension on the cord to prevent breakage.

The Spindle or Drill

The spindle is a piece of hard or softwood, about thumb thickness, usually 15–20 cm (6–8 inches) long. To create a properly shaped hole in the hearth, the spindle should be pointed on the bottom. To reduce friction at the top of the spindle, it should be chamfered (bevelled all around the edge) to a 45-degree angle.

The Hearth or Fire Board

The hearth is a rectangular piece of softwood, approximately 30 cm (12 inches) long, 6 cm (2 1/2 inches) wide and 1 cm (1/2 inch) thick. An indentation should be carved into the hearth, one spindle thickness in (from the edge), on the long edge of the hearth.

Using the Bow Drill

The position that a person assumes while operating the bow drill is as follows:

1. Place the right knee on the ground (assuming a right-handed operator) with the hearth located under the arch of the left foot, and the carved indentation to the right of the left foot.

2. Place the left wrist, holding the handhold, in front of the left shin to brace the hand and the handhold.

3. Hold the bow, with the cordage wrapped around the middle of the spindle, in the right hand. Place the spindle between the hearth and the handhold. Friction is achieved by pushing down on the handhold with the left hand and spinning the drill by pulling and pushing the bow with the right hand.

The hearth and spindle must be broken in before a glowing ember can be obtained. The heat of the friction between the hearth and the spindle creates charred dust. This dust will appear light brown at first. Continue spinning the spindle until the dust is dark brown. The spindle and indentation in the hearth now have matching profiles.



The spindle does not require a pointed tip in order to start a fire. The pointed tip is required to properly shape the indentation for a new hearth.

Cut a notch in the edge of the hearth perpendicular to the indentation created by the spindle. It should be wide enough to allow the dust to fall and collect in the notch. Place flat material under the notch to catch the dust and eventually the ember. Continue to spin the spindle with the bow and the dust will turn black and begin to smoke. Carefully watch for a glowing ember on the tinder. Carefully blowing on the ember will ignite the tinder.

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CONFIRMATION OF TEACHING POINT 1

QUESTIONS:

Q1. What are the four parts of a bow drill?

Q2. What is the easiest material to find to use as a handhold?

Q3. What is the usual position for using a bow drill?

ANTICIPATED ANSWERS:

A1. The four parts of a bow drill are:

- the bearing block or handhold,
- the bow,
- the spindle or drill, and
- the hearth or fire board.

A2. Hardwood.

A3. The usual position that a person assumes operating the bow drill is as follows:

(1) Place the right knee on the ground (assuming a right-handed operator) with the hearth located under the arch of the left foot and the carved indentation to the right of the left foot.

(2) Place the left wrist, holding the handhold, in front of the left shin to brace the hand and the handhold.

(3) Hold the bow, with the cordage wrapped around the middle of the spindle, in the right hand. Place the spindle between the hearth and the handhold. Friction is achieved by pushing down on the handhold with the left hand and spinning the drill by pulling and pushing the bow with the right hand.

Teaching point 2 **Explain and demonstrate lighting a fire using a fire piston.**

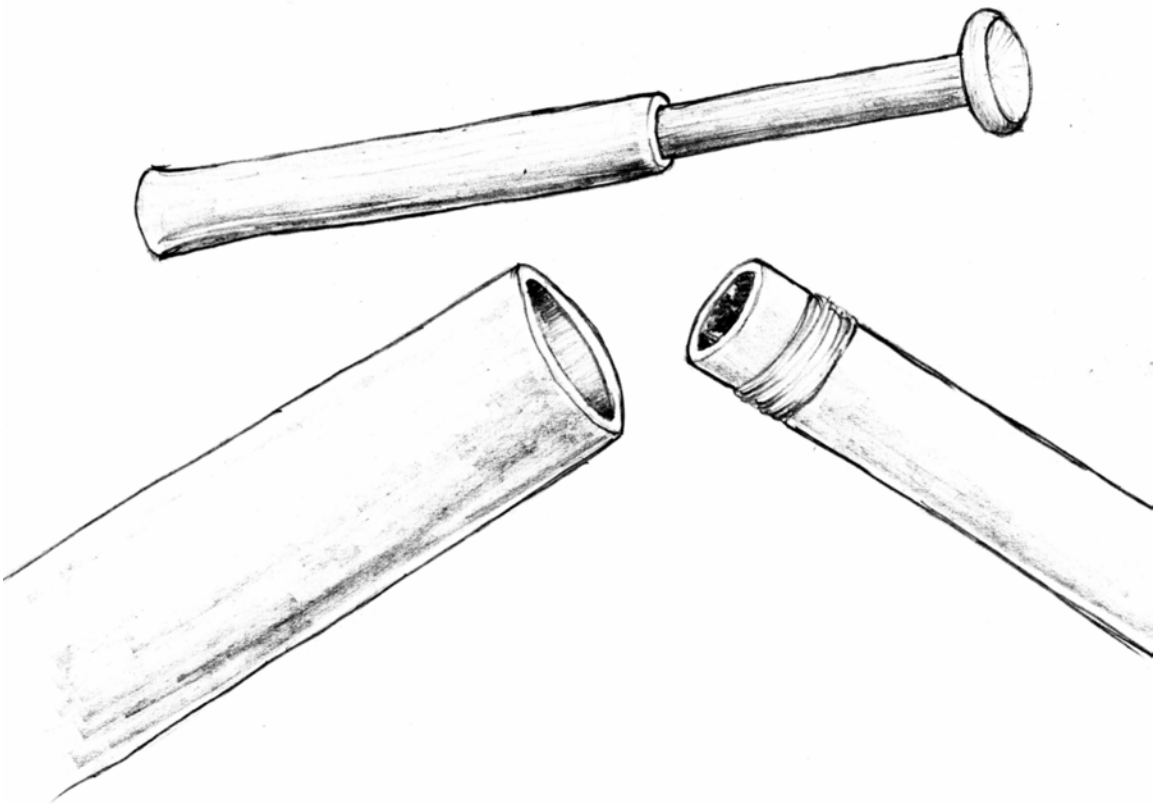
Time: 15 min Method: Demonstration

FIRE PISTON

The fire piston is an ancient method of starting fires. It is believed to have originated in areas that developed blowguns in East Asia.

The fire piston is a unique method of producing fire. Fire pistons rely on the principle that compressing a volume of air raises its temperature. This is the same principle that is used in diesel engines. If air is compressed quickly enough, it can ignite tinder.

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Note. Created by Director Cadets 3, 2009, Ottawa, ON Department of National Defence.

Figure 2 Fire Piston

A fire piston consists of a closed end cylinder and a plunger. The plunger should fit into the cylinder with an airtight seal. Tinder is placed into the cylinder (or in a hole on the end of the plunger) and the plunger is inserted a short way into the cylinder. The plunger is quickly forced down into the cylinder, compressing the air and raising its temperature, igniting the tinder and creating an ember. The movement is similar to smacking the plunger into the cylinder. The compressed air in the cylinder pushes the plunger outward. The plunger is quickly removed and the ember carefully removed and placed into a larger bundle of tinder and then blown into flame.

Traditionally, bamboo was used to construct fire pistons but they can be crafted from metal tubing salvaged from an aircraft or vehicle or carefully carved from hardwood.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS:

Q1. What principle does the fire piston use?

Q2. What are the two main parts of a fire piston?

Q3. From what material can fire pistons be crafted?

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ANTICIPATED ANSWERS:

A1. Fire pistons rely on the principle that compressing a volume of air raises its temperature.

A2. The cylinder and plunger.

A3. Traditionally, bamboo was used to construct fire pistons but they can be crafted from metal tubing salvaged from an aircraft or vehicle or carefully carved from hardwood.

Teaching point 3 **Explain, demonstrate and have the cadets light a fire using a magnesium fire starter.**

Time: 20 min Method: Demonstration and Performance



For this skill lesson, it is recommended that instruction take the following format:

(1) Explain and demonstrate the complete skill while cadets observe.

(2) Explain and demonstrate each step required to complete the skill. Monitor cadets as they imitate each step.

(3) Monitor the cadets' performance as they practice the complete skill.

Note: Assistant instructors may be employed to monitor cadet performance.

Magnesium is a metal, that when powdered or shaved, will ignite from a spark. It burns at a very high temperature, making it an effective way to light a fire.

A magnesium fire starter consists of a piece of magnesium and a striking rod. Shaved off pieces of magnesium can be used with a rock or steel object to strike a spark onto the shavings.

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Note. Created by Director Cadets 3, 2009, Ottawa, ON, Department of National Defence

Figure 3 Magnesium Fire Starter

The steps to use a magnesium fire starter are:

1. Prepare the area for the fire by assembling tinder and wood for the fire.

2. Place the bottom edge of the magnesium block on a small rock or piece of wood next to the tinder. The small rock or piece of wood will prevent the magnesium block from sinking into soft ground during the shaving process.

3. Using a knife blade, scrape the magnesium, making a small pile approximately the size of a quarter, at the base of the block.

The magnesium shavings are very light in weight. When experiencing high wind conditions, use your body or an object as a wind block and create a small depression where the block is resting on to catch the shavings.

4. Support the edge of the tool on the small rock or piece of wood approximately 25 cm (1 inch) from the pile of magnesium shavings. Using a piece of steel or a sharp rock, strike the sparking side of the magnesium

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block. Position the magnesium block so the spray of sparks is directed onto the pile of magnesium shavings. This will ignite the magnesium shavings.



Always move the tinder to the magnesium. The burning magnesium is too hot to handle. Carefully place pieces of tinder on the pile of burning magnesium shavings.

ACTIVITY

Time: 5 min

OBJECTIVE

The objective of this activity is to have the cadets light a fire using a magnesium fire starter.

RESOURCES

- Magnesium fire starter,
- Knife,
- Tinder, and
- Pails of sand.

ACTIVITY LAYOUT

Nil.

ACTIVITY INSTRUCTIONS

1. Distribute the magnesium fire starters, knives, and tinder to each cadet.
2. Have each cadet scrape the magnesium block to produce a pile of shavings.
3. Have each cadet ignite the shavings and then add tinder to the burning magnesium.
4. After confirmation that the tinder has been lit, have the cadets extinguish the burning tinder using sand.
5. Gather the equipment.
6. Debrief the cadets on the activity.

SAFETY

Magnesium burns at a temperature of approximately 2200 degrees Celsius. The flames from burning magnesium seldom pass 30 cm in height. It will only burn as shavings or dust.

Burning magnesium is hard to extinguish as it can burn in nitrogen and carbon dioxide.

Under no circumstances should water be used to extinguish a magnesium fire.

A carbon dioxide (CO_2) fire extinguisher will not extinguish a magnesium fire.

Sand can be used to extinguish a magnesium fire.

CONFIRMATION OF TEACHING POINT 3

The cadets' participation in the activity will serve as the confirmation of this TP.

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Teaching point 4 **Explain, demonstrate and have the cadets light a fire using an aluminium can and a bar of chocolate.**

Time: 20 min Method: Demonstration and Performance



Dark tinted sunglasses will help alleviate eye strain and allow visual confirmation of the focal point.



For this skill lesson, it is recommended that instruction take the following format:

(1) Explain and demonstrate the complete skill while cadets observe.

(2) Explain and demonstrate each step required to complete the skill. Monitor cadets as they imitate each step.

(3) Monitor the cadets' performance as they practice the complete skill.

Note: Assistant instructors may be employed to monitor cadet performance.

When the Sun's rays are focused, either through a lens or a concave reflector, they can generate enough heat to ignite tinder. The bottom of an aluminum can may have a concave shape suitable for focusing the Sun's rays. Polishing this concave shape with a compound will allow it to focus the Sun's rays. Possible polishing compounds can include:

- toothpaste,
- sink cleaner,
- chocolate, or
- very fine steel wool.

Toothpaste and sink cleaner have an aggressive grit and will polish the concave bottom quickly but will be less reflective. Chocolate has a fine grit and can take up to one hour to polish the concave bottom. The type of chocolate used can affect the time required to polish the bottom. Pure dark chocolate is best. Chocolate with nuts or raisins may take longer to polish the can. White chocolate usually does not have an abrasive quality. If more than one type of polish is available, start the process with the coarsest polishing compound and finish with the finest.



The aluminum particles removed from the can's bottom are considered harmful. They appear as a blackening of the polishing compound. Do not put any substance used in polishing in the mouth. Wash hands before eating. Do not eat the chocolate used to polish the can's bottom.

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Note. From "Fire from a can of coke and a chocolate bar", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/cokecanandchocolatebar/index.html

Figure 4 Polishing the Aluminum Can Bottom

Polishing the Aluminium Can Base

Apply some polishing compound to a soft cloth. If using chocolate, the wrapper can be used as the polishing cloth. Polish the bottom of the can in a circular motion until the bottom has a mirror finish. The polishing will remove any evidence of printed information on the can's bottom. Embossed numbers or letters will not affect the can's ability to focus the Sun's rays.

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Figure 5 Verifying the Polish

The state of polish can be verified by examining the reflection of an object in the centre of the bottom of the can. Look for a clear reflection.

Igniting Tinder with the Focused Rays of the Sun

Several factors must be addressed when using this method. Full sun is required to use the can's polished bottom to ignite the tinder. The tinder must be very dry and sized to allow as much of the sun's rays as possible to enter the concave bottom of the can. The tinder must be centred at the focal point of the sun's rays. The can bottom and the tinder should be held still and close to the face to allow blowing on the tinder. Some types of tinder will smoke but will not ignite unless air is added. This is done by blowing gently on the tinder while the sun's rays are focused on it.

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Note. From "Fire from a can of coke and a chocolate bar", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/cokecanandchocolatebar/index.html

Figure 6 Large Ring of Light



Note. From "Fire from a can of coke and a chocolate bar", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/cokecanandchocolatebar/index.html

Figure 7 Medium Ring of Light

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Note. From "Fire from a can of coke and a chocolate bar", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/cokecanandchocolatebar/index.html

Figure 8 Focused Spot of Light



Note. From "Fire from a can of coke and a chocolate bar", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/cokecanandchocolatebar/index.html

Figure 9 Using the Aluminum Can and Tinder

The focal point of the Sun's rays passing through a convex lens or reflected by a concave reflector is the hottest point. This is where the tinder will ignite. To find the focal point, hold the can in one hand with the bottom pointed directly to the sun. The tinder can be placed on the end of a twig to avoid blocking the Sun's rays from the can's bottom.

To determine the best position for the can, hold the twig with the tinder so that the tinder is approximately three cm from the bottom of the centre of the can. Keep fingertips to the side of the can. The tinder can also be long and thin to avoid blocking sunlight (eg, birch bark, dry grass, slice of shelf mushroom).

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Adjust the angle of the can by looking at the ring of light projected onto the underside of the tinder until the oval of sunlight becomes a circle. Sunglasses are recommended for this operation. Bring the tinder closer to or further from the bottom of the can until the circle of sunlight becomes the smallest dot possible. In a few moments, the tinder will start to smoke.

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets light tinder using the polished concave bottom of an aluminum can and polishing compound.

RESOURCES

- Dark tinted sunglasses (one per cadet),
- Aluminum can (one per cadet),
- Chocolate,
- Toothpaste,
- Tinder, and
- Pails of sand.

ACTIVITY LAYOUT

Nil.

ACTIVITY INSTRUCTIONS



Polishing the bottom of the aluminum can with chocolate may take up to one hour. Toothpaste is preferred as a polish for this TP. If the cadets cannot finish in the allocated time, polishing of the aluminum can be done on their own time.

1. Distribute an aluminum can, piece of cloth and a dab of toothpaste to each cadet.
2. Have the cadets polish the bottom of the can with the polishing compound.
3. Wearing sunglasses, have the cadets practice establishing the focal point on the tinder.
4. After confirmation that the tinder has been lit, have the cadets extinguish all glowing / lit tinder using sand.
5. Gather the equipment.
6. Debrief the cadets on the activity.

SAFETY

A fire extinguisher and pails of sand shall be available at the site.

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CONFIRMATION OF TEACHING POINT 4

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching point 5 **Explain, demonstrate and have the cadets light a fire using a battery, wire and steel wool.**

Time: 20 min Method: Demonstration and Performance

Like magnesium, steel is another metal that can burn when it is shaved or in powder form. Steel wool is made by shaving thin strands of iron off iron wire. It is used in wood and metal manufacturing as a mild abrasive and polish.



Note. From "Steel wool and a battery", 2003, Practicalsurvivor.com, Copyright 2003. Retrieved April 7, 2009, from http://www.practicalsurvivor.com/node/32

Figure 10 Using Batteries and Steel Wool

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Note. From "Steel wool and a battery", 2003, Practicalsurvivor.com, Copyright 2003. Retrieved April 7, 2009, from http://www.practicalsurvivor.com/node/32

Figure 11 Battery and Steel Wool Ignition

When an electrical current passes through the strands of steel wool, the electrical resistance of the steel strands causes them to oxidize quickly enough to ignite and burn. The size and shape of the wool allows it to burn. Fine steel wool works best. Adding oxygen to the steel wool by blowing on it will increase the rate of oxidation, causing greater heat. Steel wool will burn when wet. The finer the grade of steel wool, the faster it will burn.

One battery (AA, C and D cell) does not have enough voltage and amperage to ignite the steel wool by itself. Two batteries (AA, C and D cell), a nine volt battery, cell phone or radio battery will ignite the steel wool but this will drain the batteries quickly. This use of batteries should be evaluated carefully as the batteries may be more useful in an object like a GPS, cell phone or radio.

To use steel wool and batteries:

1. Pull the steel wool into a multi-strand bundle long enough to reach both battery terminals.
2. Prepare tinder where the fire will be lit.
3. Place one end of the bundle on one terminal of the batteries.
4. Place the other end of the bundle on the opposite battery terminal.

The bundle of steel wool will ignite immediately and can be added to the tinder.

Steel wool can also be ignited by a spark from flint (hard rock) and steel, the flint of a empty lighter or any other source of spark.

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ACTIVITY

Time: 10 min

The objective of this activity is to have the cadets light a fire using a battery and steel wool.

RESOURCES

- AA batteries (two per cadet),
- Tinder,
- Pails of sand, and
- Steel wool.

ACTIVITY LAYOUT

Nil.

ACTIVITY INSTRUCTIONS

1. Distribute the batteries, steel wool and tinder to the cadets.
2. Have the cadets crouch down to the ground and ignite the steel wool with the batteries.
3. Have the cadet place the tinder on the burning steel wool and blow gently on it to ignite the tinder.
4. After confirmation that the tinder is lit, have the cadets extinguish the tinder using sand.
5. Gather the equipment.
6. Debrief the cadets on the activity.

SAFETY

A fire extinguisher and pails of sand shall be available at the site.

CONFIRMATION OF TEACHING POINT 5

The cadets' participation in the activity will serve as the confirmation of this TP.

Teaching point 6 **Explain, demonstrate and have the cadets light a fire using a magnifying lens.**

Time: 20 min Method: Demonstration and Performance

A magnifying lens will accomplish the same objective as the bottom of the aluminum can. It will focus the sun's rays into one point that will ignite tinder. It can be made of glass, plastic, ice or water.

Glass or plastic lenses can be obtained from:

- a magnifying glass,
- binoculars,
- a cameras, or
- eyeglasses.

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The type of tinder will dictate how much effort will be required to ignite it. Average tinder and a small lens will require additional air to ignite.



Note. From "Magnifying lens", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/fire/magnifier.html

Figure 12 Using Binoculars to Ignite Tinder

Larger and thicker lenses will generate higher temperatures at the focal point but the point may be too far from the lens to be effective. Most eyeglasses will prove difficult to use lighting fires as they do not have the magnification necessary to ignite tinder. Experimentation is necessary to find the focal point of a lens or set of lenses. Before disassembling an object containing lenses, evaluate its worth during the survival situation.

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Fire From Ice



Note. From "Fire from ice", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/fire/ice/rb/rbfirefromice4b.html

Figure 13 Rough Carved Sphere of Ice

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Note. From "Fire from ice", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/fire/ice/rb/rbfirefromice4b.html

Figure 14 Polishing a Sphere of Ice

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Verify against the official publication.



Note. From "Fire from ice", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/fire/ice/rb/rbfirefromice4b.html

Figure 15 Using a Piece of Tubing to Shape an Ice Sphere

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Note. From "Fire from ice", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/fire/ice/rb/rbfirefromice4b.html

Figure 16 Igniting Tinder with an Ice Sphere

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Spherical ice lenses can be made in cold climates. A sphere of ice used as a lens will give a usable focal point that can be used to ignite tinder. Ice from a lake or shore of a river that is free of air bubbles and crystal clear is necessary for this method of fire lighting. The sphere should be larger than 4 cm (1 1/2 inches) to be effective.

To make a spherical lens of ice:

1. Start by cutting the rough shape from a larger block of ice.

2. Once the spherical shape has been established, turn the sphere in bare hands to smooth and polish the surface. If a metal tube is available (eg. aircraft exhaust or spar tubing) spinning the sphere on the end of the tube will shave it almost perfectly round. The tubing must be slightly smaller in diameter than the ice sphere.

3. The sphere can be held by wrapping a strip of cloth or bootlace around its circumference and twisting it tight.

Fire From Water



Note. From "Fire from ice", by W. Muma, 2003, Wildwood Survival, Copyright 2003 by W. Muma. Retrieved April 6, 2009, from http://www.wildwoodsurvival.com/survival/fire/ice/rb/rbfirefromice4b.html

Figure 17 Igniting Tinder with Plastic Wrap and Water

A clear piece of plastic wrap, balloon or condom can also be used if partially filled with water. The object is to make a perfect sphere by twisting the open end tight so the plastic takes a spherical shape. The Sun's rays can then be focused on the tinder.

1. Place some water in the plastic. The sphere should be larger than 4 cm (1 1/2 inches) to be effective.

2. Twist the opening tightly to form a sphere.

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3. Hold the sphere between the tinder and the sun.
4. Locate the focal point and ignite the tinder.



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Figure 18 Igniting Tinder with a Broken Light Bulb and Water

A piece of broken light bulb, wine glass or any other round clear object holding some water can also be used to focus the Sun's rays.

ACTIVITY

Time: 10 min

OBJECTIVE

The objective of this activity is to have the cadets ignite tinder using a magnifying lens.

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RESOURCES

- Magnifying lens,
- Clear plastic bag,
- Water,
- Tinder, and
- Pails of sand.

ACTIVITY LAYOUT

Nil.

ACTIVITY INSTRUCTIONS

1. Have the cadet select a method of ignition from:
   a. magnifying lens, or
   b. clear plastic bag.
2. Distribute lens or clear plastic bag and water and tinder to the cadets.
3. Have the cadets ignite the tinder with the selected lens.
4. After confirmation that the tinder is lit, extinguish the tinder using sand.
5. Gather the equipment.
6. Debrief the cadets on the activity.

SAFETY

A fire extinguisher and pails of sand shall be available at the site.

CONFIRMATION OF TEACHING POINT 6

The cadets' participation in the activity will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' participation in the activities will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK / READING / PRACTICE

Nil.

METHOD OF EVALUATION

This EO is assessed IAW A-CR-CCP-804/PG-001, *Proficiency Level Four Standard and Plan*, Chapter 3, Annex B, 490 PC.

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CLOSING STATEMENT

There are many methods for igniting tinder in a survival situation. The ones demonstrated in this lesson should be practiced often. The heat and warmth of a fire can be a necessity in a survival situation.

INSTRUCTOR NOTES / REMARKS

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).

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

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