ROYAL CANADIAN ARMY CADETS

GOLD STAR

INSTRUCTIONAL GUIDE

SECTION 3

EO M424.03 – WEAVE CORDAGE

Total Time:	90 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-704/PG-001, *Gold Star 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.

Information on types of trees can be found in A-CR-CCP-702/PF-001, *Red Star Instructional Guides*, EO C221.03 (Identify Species of Trees).

Conduct a reconnaissance of the area being used for the lesson and identify cordage materials in the area.

An assistant instructor may be required for TPs 3–5.

PRE-LESSON ASSIGNMENT

Nil.

APPROACH

An interactive lecture was chosen for TPs 1 and 2 as it introduces the cadet to the characteristics and many uses of cordage.

A demonstration and performance was chosen for TPs 3–5 as it allows the instructor to explain and demonstrate making and weaving cordage while providing an opportunity for the cadet to practice this skill under supervision.

INTRODUCTION

REVIEW

The review for this lesson is from EO M424.02 (Employ the Improvising Process).

QUESTIONS:

Q1. What are the seven enemies of survival?

Q2. Why are boredom and loneliness two of the toughest enemies of survival?

Q3. What enemy has a greater impact on a person's ability to survive, thirst or hunger?

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ANTICIPATED ANSWERS:

A1. The seven enemies of survival are pain, cold, thirst, hunger, fatigue, boredom and loneliness.

A2. Boredom and loneliness are two of the toughest enemies of survival because they are often unexpected and can creep up on a person.

A3. A person can live without food longer than they can live without water. Dehydration can kill within a couple of days.

OBJECTIVES

By the end of this lesson the cadet shall have weaved cordage from raw materials.

IMPORTANCE

It is important for cadets to be able to weave cordage from natural resources. Possessing this skill makes it easier for the cadet to survive in a survival situation. Cordage has multiple uses that can assist the cadet with combating the seven enemies of survival.

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Teaching point 1 **Identify the uses of cordage.**

Time: 5 min Method: Interactive Lecture



Cordage (cord). A long thin flexible material made from several twisted strands—usually thicker than string and finer than rope.



The purpose of this TP is to introduce the cadets to the different ways that cordage can be used.

Brainstorming is a method that can be used to present this material, as cadets will have some previous knowledge of the topic.

If brainstorming, the following questions could be asked:

(1) What is cordage?

(2) How can cordage be used in a survival situation?

Brainstorming works best if one cadet is assigned to write the other cadets' responses on flip chart paper.

Cordage may be used in many different ways to combat the seven enemies of survival.

USES FOR CORDAGE

One of the most indispensable items in a survival situation is cordage. Some of its common uses include:

- lashing materials together;
- binding materials;
- making snares;
- hanging food;
- hanging items;
- constructing water carrying devices;
- making shelter;
- constructing clothing; and
- sewing items together.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS:

Q1. What is cordage?

Q2. What are three uses for cordage that will assist an individual to combat hunger?

Q3. How would cordage be used when making shelter?

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ANTICIPATED ANSWERS:

A1. Cordage (cord) is a long thin flexible material made from several twisted strands—usually thicker than string and finer than rope.

A2. The following uses of cordage will assist an individual in combating hunger:

- making snares;
- hanging food; and
- constructing water carrying devices.

A3. When making shelter, cordage may be used to lash and bind materials together.

Teaching point 2 **Identify the characteristics of cordage materials.**

Time: 5 min Method: Interactive Lecture



The purpose of this TP is to introduce cadets to the characteristics of cordage. Remind cadets of the two types of rope—natural and synthetic.

Have examples of cordage to assist in explaining the characteristics.

Cordage may be used in a multitude of ways. It is important to ensure that the materials selected meet some basic characteristics. This makes it easier to construct the cordage and to ensure that the final product is of high quality.

CHARACTERISTICS OF CORDAGE MATERIALS

The following characteristics must be considered when selecting cordage materials:

Length of the fibre. The longer the fibre being used, the easier it is to work with. Longer fibres also make cordage stronger as there are fewer weak areas in the cordage where smaller pieces are joined together.

Strength of the fibre. The fibres must be strong enough that they may be pulled apart without breaking. This ensures that when the cordage is being constructed, pieces do not break apart.

Pliability of the fibre. The fibre should be pliable enough to be tied into a knot without breaking.



Pliable. Bending easily / supple.

Availability of grip on the fibre. To assist with making cordage, the fibre should have some grip that allows it to bite into (dig into) other pieces when twisted together. This grip may be caused by ridges on the surface, jagged edges, etc.



The stronger the fibre, the stronger the cordage will be. Some stiff fibres, such as vines, may be made more pliable by steaming or warming them in warm water.

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CONFIRMATION OF TEACHING POINT 2

QUESTIONS:

Q1. What are the four characteristics that must be considered when selecting cordage materials?

Q2. What happens if the fibre is short?

Q3. How is the pliability of a piece of fibre assessed?

ANTICIPATED ANSWERS:

A1. The four characteristics that must be considered when selecting cordage materials are:

- length of the fibre,
- strength of the fibre,
- pliability of the fibre, and
- availability of grip on the fibre.

A2. If the fibre is short, it is difficult to work the fibre into cordage and it may make the cordage weak due to the number of smaller pieces used.

A3. The pliability of a piece of fibre is assessed by tying it into a knot. If it ties into a knot, then it is pliable.

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Teaching point 3 **Explain, demonstrate and have the cadets select cordage materials.**

Time: 20 min Method: Demonstration and Performance



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

(1) Introduce the cadets to the five types of materials that can be used to make cordage.

(2) Give cadets a guided tour of the area to show them examples of the materials that are available in the general area.

(3) Have the cadets select and gather cordage materials for use in TPs 4 and 5 (they only need one type, [eg, tree bark]).

(4) Demonstrate how to prepare the following types of cordage materials:

a. tree bark,

b. stalks from pithy plants,

c. leaves,

d. roots, and

e. grasses.

(5) Have the cadets prepare the cordage materials selected for use in TPs 4 and 5.

Have cadets select cordage materials that require little preparation. There is no time for soaking and drying.

Note. If using an area that does not have enough materials available, cadets may be grouped into pairs or groups of three.

It is important to understand that it is not the actual raw material—bark, root, vine—that makes it a good selection for making cordage. It is the fibres that make up / come from that piece of raw material.



Think about the fabric that makes up a silk shirt. The fabric is constructed from hundreds of silk fibres that are woven together to make string. The pieces of string are constructed from the leaves of a silk plant that have been separated.

CORDAGE MATERIALS

The following is a list of raw materials that can be used to make cordage:

- trees,
- stalks,
- leaves,
- roots, and

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- miscellaneous materials, to include:
  - rushes / sedges / grasses,
  - animal sinew, and
  - animal hair.

TREES

The dried inner bark of just about any tree supplies workable material to construct cordage. Some of the best bark comes from the following trees:

- basswood,
- elm,
- walnut,
- cherry,
- aspen,
- cottonwood,
- maple, and
- cedar.

When collecting bark to use for cordage, it is best to look for dead, rather than live trees. The fibrous, inner bark should be pulled off the dead tree in strips that are as long as possible. If there are no dead trees in the area, live trees can be used by stripping the inner bark off the tree and then letting it dry out before use.



Note. From "Wildwood Survival", Cordage, Copyright 2008 by Walter Muma. Retrieved April 23, 2009, from http://www.wildwoodsurvival.com/survival/cordage/basswood/index.html

Figure 1 Bark Fibres

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If a tree has been down a long time, it may have decayed. Test the fibres to ensure they are not too brittle.

STALKS

The dried inner portion of the stalk of fibrous plants can also be useful in making cordage. Examples include:

- dogbane,
- milkweed,
- velvet leaf,
- wild hemp,
- evening primrose,
- stinging nettles,
- fireweed,
- sagebrush,
- thistle, and
- yucca.

When using stalks to make cordage, the fibrous material can be extracted:

A pithy plant has a spongy inner core, while a non-pithy plant has a hard inner core.

- from pithy plants (eg, dogbane, milkweed, thistle) by pulling off the outside of the stalk in long ribbons (when wet) or when dry by crushing and opening up the stalk, breaking off sections of the woody inner core to get long ribbons of fibres; and



Note. From "Wildwood Survival", Cordage, Copyright 2008 by Walter Muma. Retrieved April 23, 2009, from http://www.wildwoodsurvival.com/survival/cordage/dogbane/index.html

Figure 2 Pulling off the Outside Stalk of a Dogbane

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- from non-pithy (eg, nettles) plants by soaking the long stems in water for 24 hours, laying them on a piece of wood, pounding them with a smooth stone to shred the outer surface, exposing the fibrous centre and drying the fibrous centre.



Note. From "Wildwood Survival", Cordage, Copyright 2008 by Walter Muma. Retrieved April 23, 2009, from http://www.wildwoodsurvival.com/survival/cordage/syucca/index.html

Figure 3 Extracting Fibres From the Yucca Stalk

When selecting plants, look for ones that grow very tall. This makes constructing cordage from the collected fibrous material much easier.

LEAVES

The leaves of some plants / trees are very fibrous and may be used to make cordage. Examples include the:

- lily,
- aloe,
- palm,
- cattails, and
- yucca.

When using leaves to make cordage, it is important that the leaves are soaked to remove the flesh, however, leave the fibrous portion.

A leaf may be tested to see if it is fibrous by tearing it apart to see if it separates into stringy layers.

ROOTS

The surface roots of many trees can be used to make very strong cordage. Roots that run just above or just under the surface of the ground are often the most pliable and strong. The thinner the root, the better it is. Examples of trees with good roots are:

- cedar,

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- pine,
- juniper,
- tamarack, and
- spruce.



It is best to gather roots from dead trees. If this is not possible, cut only small sections of root from a variety of trees in the area. This limits damage to trees.



Note. From "Wildwood Survival", Cordage, Copyright 2008 by Walter Muma. Retrieved April 23, 2009, from http://www.wildwoodsurvival.com/survival/cordage/roots/index.html

Figure 4 Roots

Miscellaneous Materials

There are a number of other sources of fibrous materials to make cordage. They include:

Rushes / sedges / grasses. These types of items can be found anywhere. They should be used while still green and it is important to remember that as they dry out, their strength diminishes. When selecting rushes, sedges and grasses, choose the longest pieces first.



A sedge is a grasslike plant that grows in wet areas.

Animal sinew. Animal sinew (tendons, ligaments) can be used to create exceptionally strong cordage. The longest sinew is found in the white cords that run along either side of an animal's backbone or attached to muscles and bones. The sinew is cut out, removed from its protective sheath, cleaned, dried, separated into fibres and then placed in hot water just before use to make it pliable.

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Animal hair. Animal hair provides an excellent and easy to use source for making cordage—if it can be found. Large amounts, the longer the better, are required to ensure the cordage is strong. Animal hair can be found on trees, the ground and on the carcass of a dead animals.

CONFIRMATION OF TEACHING POINT 3

The cadets' selecting of cordage material will serve as the confirmation of this TP.

Teaching point 4 **Explain, demonstrate and have the cadet construct cordage from the selected materials by wrapping the raw materials into a 1-m (3-foot) long continuous cord.**

Time: 20 min Method: Demonstration and Performance



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

(1) Explain and demonstrate constructing cordage from selected materials into continuous cord while the cadets observe.

(2) Explain, demonstrate and have the cadets complete each step to construct cordage from selected materials into a 1-m (3-foot) long continuous cord.

Note: Assistant instructors may be required.

The first step in making cordage is to wrap the raw materials that have been gathered into long single strands. To do this:

1. Collect and prepare raw materials, as required (completed in TP 3).



Note. From Tom Brown's Field Guide: Wilderness Survival (p. 245), by T. Brown, Jr., and Morgan, B., 1983, New York, NY: Berkley Publishing Group. Copyright 1983 by Tom Brown, Jr.

Figure 5 Collecting Raw Materials

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It is important to ensure the raw material is broken down completely and as much of the fibre as possible is separated from the non-fibrous materials. This can be done by rolling the raw material between the palms of the hands.

2. Decide on the desired width and length of the cordage to be constructed.



For this TP cadets will be required to construct a 1-m (3-foot) long continuous cord.

3. Collect the required amount of raw materials to achieve the width and length desired.
4. Select a bundle of fibres (enough to cover the palm of the hand).



A larger bundle of fibres will not necessarily make the piece of cordage stronger. Stronger cordage is made by combining multiple pieces of wrapped strands.

5. Place the bundle on the top of the upper thigh.
6. Roll the bundle on the thigh, in one direction, using the palm of the hand to wrap the fibres.



Note. From "Wildwood Survival", Cordage, Copyright 2008 by Walter Muma. Retrieved April 23, 2009, from http://www.wildwoodsurvival.com/survival/cordage/men79/index.html

Figure 6 Rolling Fibres on the Thigh



It is sometimes easier to wrap fibres when the thigh is damp.

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7. Add additional fibres, in small staggered bundles, to one end by spreading and fitting the fibres into each other to create a continuous piece of cordage the desired length.



The rolling wraps the fibres together. The staggering of the new fibres ensures they bind at different intervals along the piece of cordage—making it stronger.

CONFIRMATION OF TEACHING POINT 4

The cadets' construction of a piece of cordage will serve as the confirmation of this TP.

Teaching point 5 **Explain, demonstrate and have the cadet weave cordage into a 0.5-m (1.5-foot) one-strand braid (simple wrap).**

Time: 30 min Method: Demonstration and Performance



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

(1) Explain and demonstrate weaving cordage into a 0.5-m (1.5-foot) one-strand braid while the cadets observe.

(2) Explain, demonstrate and have the cadets complete each step to weave cordage into a 0.5-m (1.5-foot) one-strand braid.

Note: Assistant instructors may be required.

Once the piece(s) of long continuous cordage has been constructed, the next step in the process is to weave the cordage together. There are multiple ways to weave cordage together—the more strands that are weaved together, the stronger the end product is going to be. The chosen method of weaving will therefore depend on what the cordage is going to be used for. The following weaves, in order of strength with strongest being listed last, can be completed:

- one-strand braid (simple wrap),
- two-strand braid (reverse wrap),
- three-strand braid, and
- four-strand braid.

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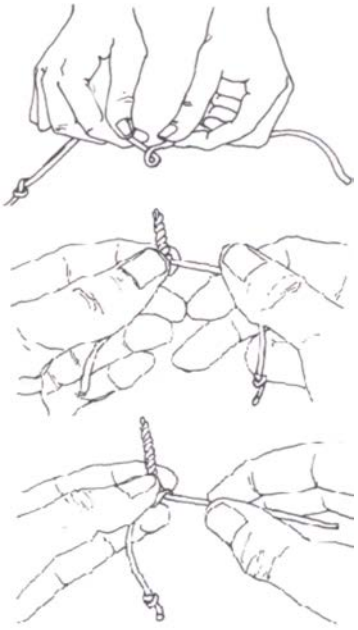
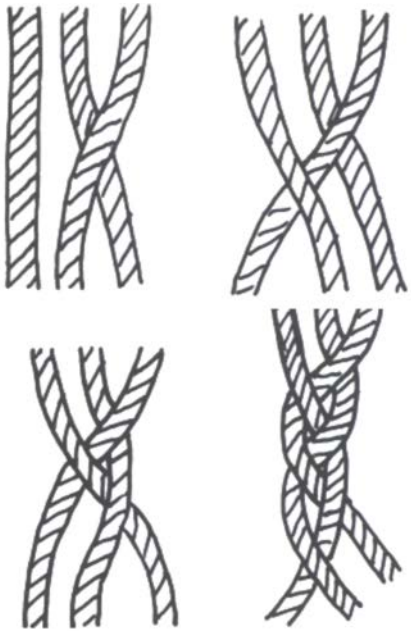


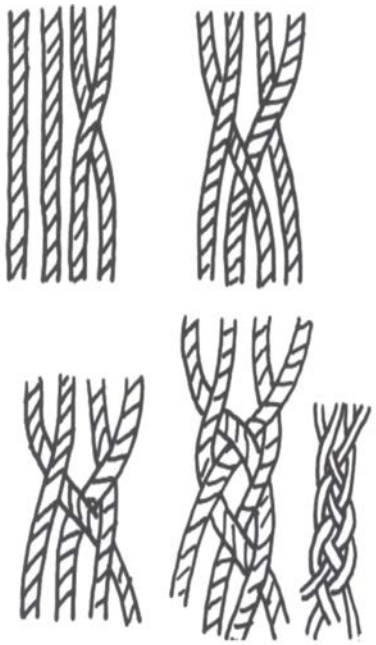
Note. From Tom Brown's Field Guide: Wilderness Survival (p. 243), by T. Brown, Jr., and Morgan, B., 1983, New York, NY: Berkley Publishing Group. Copyright 1983 by Tom Brown, Jr.

Figure 7 Two-Strand Braid (Reverse Wrap)



Note. From Wilderness Survival (p. 271), by J. Davenport, 2006, Mechanicsburg, PA: Stackpole Books. Copyright 2006 by Gregory J. Davenport.

Figure 8 Three-Strand Braid



Note. From Wilderness Survival (p. 272), by J. Davenport, 2006, Mechanicsburg, PA: Stackpole Books. Copyright 2006 by Gregory J. Davenport.

Figure 9 Four-Strand Braid

The one-strand braid (single wrap) is a quick and easy way to weave cordage that can be used in many different applications where strength is not the primary concern. To execute a one-strand braid (single wrap) use the following process:

1. Hold one end of the cordage between the thumb and forefinger of the non-dominant hand.
2. Roll the cordage with the palm of the dominant hand in one direction on the thigh until tight.

Steps 1 and 2 are the same as Steps 5 and 6 in constructing cordage.

3. Grasp the other end of the cordage.
4. Place the middle of the cordage between the teeth.

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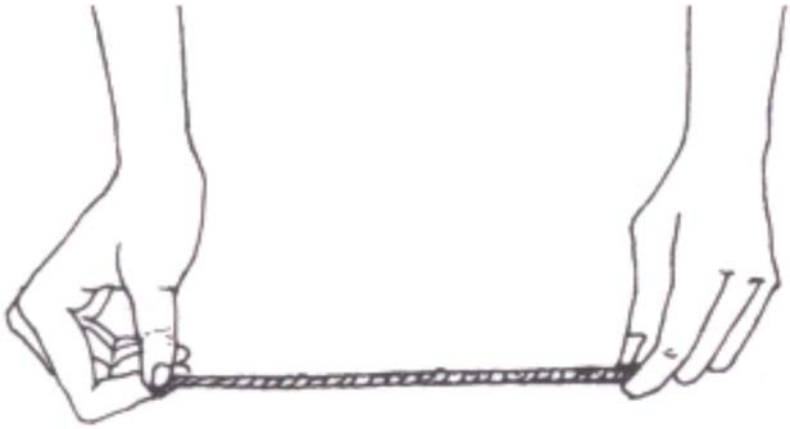
Note. From Tom Brown's Field Guide: Wilderness Survival (p. 245), by T. Brown, Jr., and Morgan, B., 1983, New York, NY: Berkley Publishing Group. Copyright 1983 by Tom Brown, Jr.

Figure 10 Placing Middle of Cordage Between Teeth

It is important to ensure that cordage being used was not constructed from poisonous raw materials when placing cordage into mouth.

5. Bring both ends of the cordage tightly together.
6. Hold the ends of the cordage tightly together in one hand.
7. Release the doubled cordage from between the teeth to create the braid (wrap).

Releasing the cordage allows for it to naturally twist around itself to form the braid.



Note. From Tom Brown's Field Guide: Wilderness Survival (p. 245), by T. Brown, Jr., and Morgan, B., 1983, New York, NY: Berkley Publishing Group. Copyright 1983 by Tom Brown, Jr.

Figure 11 Doubled Cordage

8. Tighten the braid (wrap) by twisting it and adjusting the cordage.

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Note. From Wilderness Survival (p. 270), by J. Davenport, 2006, Mechanicsburg, PA: Stackpole Books. Copyright 2006 by Gregory J. Davenport.

Figure 12 Example of Good Braid (Top) and Bad Braid (Bottom)

9. Tie an overhand knot at the end of the cordage.

Once the braid (wrap) is completed, the length of the cordage has shrunk by at least half. This must be taken into consideration to ensure the length of the final product meets what is required.



Note. From "Wildwood Survival", Cordage, Copyright 2008 by Walter Muma. Retrieved April 23, 2009, from http://www.wildwoodsurvival.com/survival/cordage/finishedcordage.html

Figure 13 Examples of Completed Cordage—Burdock and Hemp

CONFIRMATION OF TEACHING POINT 5

The cadets' weaving of a piece of cordage will serve as the confirmation of this TP.

END OF LESSON CONFIRMATION

The cadets' weaving of cordage will serve as the confirmation of this lesson.

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CONCLUSION

HOMEWORK / READING / PRACTICE

Nil.

METHOD OF EVALUATION

This lesson is assessed IAW A-CR-CCP-704/PG-001, *Gold Star Qualification Standard and Plan*, Chapter 3, Annex B, 424 PC.

CLOSING STATEMENT

Being able to weave cordage from raw materials is a skill that will assist a cadet in survival when lost. Cordage may be used in so many different ways, that it is an integral item to have in a survival situation. Applying this skill assists in combating the seven enemies of survival.

INSTRUCTOR NOTES / REMARKS

Select an area where the raw materials required for this EO may be found. If that is not possible, gather enough raw materials, for each cadet, from an alternate location and bring them to the area.

REFERENCES

C2-008 ISBN 0-00-653140-7 Wiseman, J. (1999). *The SAS survival handbook*. Hammersmith, London: HarperCollins Publishers.

C2-068 ISBN 0-425-10572-5 Brown, T., Jr., & Morgan, B. (1983). *Tom Brown's field guide: Wilderness survival*. New York, NY: The Berkley Publishing Group.

C2-148 ISBN 978-0-8117-3292-5 Davenport, G. (2006). *Wilderness survival*. Mechanicsburg, PA: Stackpole Books.

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