ROYAL CANADIAN SEA CADETS

PHASE ONE

INSTRUCTIONAL GUIDE

SECTION 1

EO M121.01 – TIE KNOTS, BENDS AND HITCHES

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-601/PG-001, *Phase One 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.

Set up six stations with line.

Photocopy the cards located at Attachment A. Cut and place a card at each station.

PRE-LESSON ASSIGNMENT

Nil.

APPROACH

A demonstration and performance was chosen for TPs 1-3 as it allows the instructor to explain and demonstrate the skill the cadets are expected to acquire while providing an opportunity for the cadets to practice the skill under supervision.

An in-class activity was chosen for TP 4 as it is an interactive way to provoke thought and stimulate interest among cadets about tying knots, bends and hitches.

INTRODUCTION

REVIEW

Nil.

OBJECTIVES

By the end of this lesson the cadet shall have tied and know where to use the reef knot, figure eight, sheet bend, bowline, clove hitch and round turn and two half hitches.

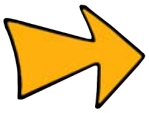
IMPORTANCE

Knowledge of the effective use of different knots, bends and hitches is one of the foundations of the sea cadet program and will be used in a variety of future training and activities such as rigging sailboats and lifting devices.

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.



Demonstrate and have the cadets tie the knots, bends and hitches.



The following are some suggestions to make the class more enjoyable for the cadets:

- Use different coloured line to teach the knots.
- Have licorice for the cadets to tie their knots with. Once the knots are completed correctly, the cadets can eat the licorice.
- It may be useful to put the accompanying diagrams on overheads for the cadets to refer to.
- Demonstrate all knots in a realistic way; try using simulated sail corners, or use spars and posts to tie bowlines and hitches to.
- Have senior cadets circulate through the class to check the cadets' progress.



Bight

A bight is any curved section, slack part, or loop between the ends of a rope, string, or yarn.

Standing end

The standing end is the end of the rope not involved in the knot.

Standing part

Section of line between knot and the standing end.

Working end

The active end of a line used in making the knot.

Working part

Section of line between knot and the working end.

Teaching point 1 **Explain, demonstrate and have the cadets tie a reef and figure of eight knot.**

Time: 20 min Method: Demonstration and Performance

DEFINITION OF KNOTS

A knot is something tied at the end of a line, or using a line itself. It is the term often applied to anything that is not a bend, splice or hitch.

REEF KNOT

The reef knot is commonly used to tie two lines of equal diameter together, or it can be used to tie off the two ends of a line around an object (eg, parcels, or sails). It got its name from being the knot used to tie up or reduce the reefs or panels of sails.

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

An easy way to remember how to tie a reef knot is that the ends must be crossed in opposite directions each time they are knotted (eg, right over left then left over right, or vice versa).

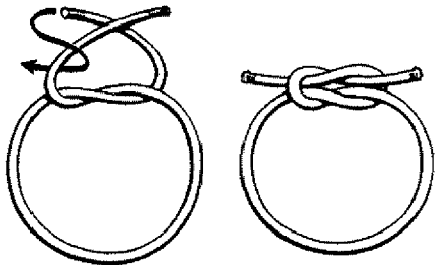
The knot is made using the following method:

1. Put the left hand working end of the line on top of the right hand working end.

2. Bring the left hand working end of the line under the right hand working end.

3. Put the working end that is now on the right on top of the working end that is now on the left.

4. Bring the working end that is on top over and then under the other working end so that the working end in the left hand comes out of the same space through which it entered the knot.



CFCD 105 Seamanship Rigging and Procedures Manual

Figure 1 Reef Knot

FIGURE OF EIGHT

The figure of eight is a stopper knot, used to tie off the end of a line. It is commonly used to prevent the ends of the sheets of sails from pulling through blocks, eyebolts or fairleads.

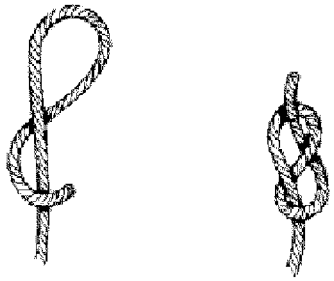
The knot is made using the following method:

1. Hold the standing end in one hand, and make a crossing turn with the working end passing under the standing part of the rope.

2. Bring the working end over the standing part.

3. Tuck the working end up through the loop from behind, forming a figure eight.

4. Pull tight on the working part.



CIC Sea Environmental Training Instructor Guide 2005

Figure 2 Figure of Eight

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS:

Q1. If you are rigging a sailboat, what knot would you use to stop the line from running all the way through the fairleads?

Q2. What is a reef knot commonly used for?

ANTICIPATED ANSWERS:

A1. A figure of eight knot.

A2. To tie together two lines of equal diameter.

Teaching point 2 **Explain demonstrate and have the cadets tie a sheet bend and bowline.**

Time: 20 min Method: Demonstration and Performance

DEFINITION OF BEND

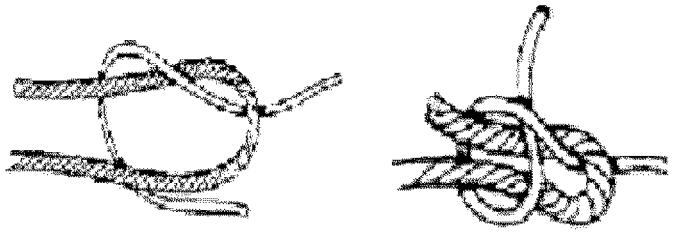
A bend is used to join together two lines temporarily, and is characterized by making a bend in one of the lines.

SHEET BEND

The sheet bend is one of the simplest and easiest ways of joining together two pieces of line of unequal diameter; the smaller line is always made fast to the bight of the larger one. It can be used to tie a sailboat to another line.

The bend is made using the following method:

1. Fold an end of the larger line back on itself to form a bight.
2. Bring the working end of the line up to form a loop at the bottom, make the resulting loop the required size.
3. Take the working end of the smaller line around behind both pieces of the first line.
4. Tuck the working end of the smaller line under itself and pull tight.



CIC Sea Environmental Training Instructor Guide 2005

Figure 3 Sheet Bend

BOWLINE

The bowline is the most useful knot for putting a temporary eye in a line; it can also be used as a lifeline around a person’s waist.

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

The knot is made using the following method:

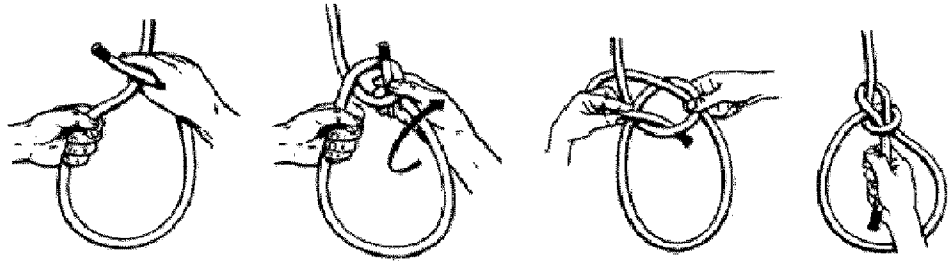
1. With the standing end in one hand, form a small bight with the working end of the line, and lay it over top of the standing end of the line.

2. Bring the working end of the line up to form a loop at the bottom, and make the resulting loop the required size.

3. Bring the working end up through the bight and around the standing end.

4. Bring the working end down through the bight.

5. Hold the two sides of the loop and the working end in one hand, while the other hand holds the standing end of the line, and pull in opposite directions.



CFCD 105 Seamanship Rigging and Procedures Manual

Figure 4 Bowline

The Royal Canadian Navy encourages every member of a ship's company to be able to tie a bowline around their waist with their eyes closed, and to be able to do it quickly in the dark or under adverse conditions.

Time: 10 min

OBJECTIVE

The objective of this activity is to recognize a knot or bend by touch and practice tying knots and bends.

RESOURCES

- Line, one per cadet.
- Piece of fabric, one per cadet.

ACTIVITY LAYOUT

Nil.

ACTIVITY INSTRUCTIONS

1. Blindfold each cadet.

2. Tie one of the knots that have been taught.

3. Pass the knot along to all cadets. Each will have ten seconds to hold the line and try to determine the knot.

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

4. Once all cadets have touched the knot, have the cadets tie the knot they think they touched.

5. The cadet that can tie the knot correctly first will then describe its use.

6. Continue until all the knots have been tied.

SAFETY

Nil.

CONFIRMATION OF TEACHING POINT 2

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

Teaching point 3 **Explain, demonstrate and have the cadets tie a clove hitch and round turn and two half hitches.**

Time: 20 min Method: Demonstration and Performance

DEFINITION OF HITCHES

A hitch is tied around or to something, such as a ring, spar or post. They are generally quick to tie and easy to untie.

CLOVE HITCH

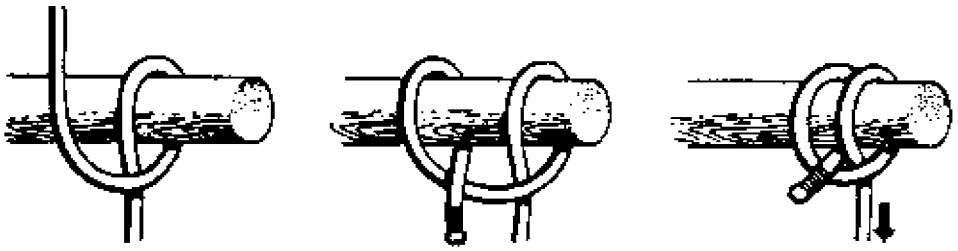
The clove hitch can be used to secure a line temporarily to a post or spar, such as securing a small sailboat.

The hitch is made using the following steps:

1. With the running end, make a turn around a spar.

2. To the left of the first turn, make another turn.

3. Pass the running end between the two turns, so that it comes up in the opposite direction from the standing part.



CFCD 105 Seamanship Rigging and Procedures Manual

Figure 5 Clove Hitch

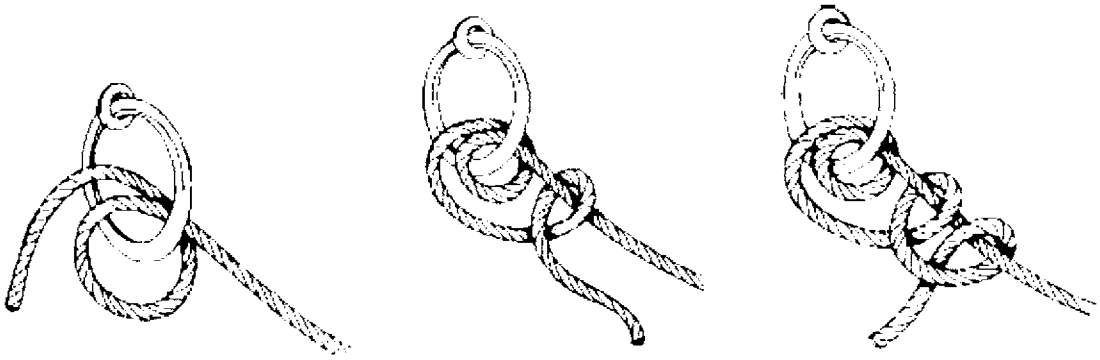
ROUND TURN AND TWO HALF HITCHES

The round turn and two half hitches is another way to secure a sailboat to a post or ring. It will never jam and can be untied quickly. The hitches should always be made with the running end of the line going in one direction.

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

The knot is made using the following method:

1. Bring the working end of the line around the post or ring two turns, making a full round turn.
2. Take the working end around the standing end, and tuck it behind itself.
3. Bring the working end around the standing end again and tuck to make a second half hitch.
4. Pull tight to finish the knot.



CFCD 105 Seamanship Rigging and Procedures Manual

Figure 6 Round Turn and Two Half Hitches

CONFIRMATION OF TEACHING POINT 3

QUESTIONS:

Q1. What can you use a clove hitch for?

Q2. Can you make the hitches for a round turn and two half hitches in opposite directions?

ANTICIPATED ANSWERS:

A1. You can use it to tie up a small sailboat.

A2. No, they should be made in the same direction.

Teaching point 4 **Practice tying knots, bends and hitches.**

Time: 50 min Method: In-Class Activity

Time: 50 min

OBJECTIVE

The objective of this activity is to identify and tie knots, bends and hitches.

RESOURCES

- Seamanship cards, located at Attachment A.
- Line, three per station.

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

ACTIVITY LAYOUT

Six stations with each station having three pieces of line, and one of the seamanship cards.

ACTIVITY INSTRUCTIONS

1. Divide the cadets into groups, depending upon the size of the class.
2. Have the cadets go to each station and follow the steps on the card to tie the knot, bend or hitch.
3. Once each cadet has tied the knot, bend or hitch, have the cadets move to the next station.
4. Continue until cadets have tied all the knots, bends and hitches.

SAFETY

Nil.

END OF LESSON CONFIRMATION

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

CONCLUSION

HOMEWORK/READING/PRACTICE

The cadets should be encouraged to practice the knots, bends and hitches on their own time.

METHOD OF EVALUATION

Nil.

CLOSING STATEMENT

These knots, bends and hitches will be used in a variety of cadet training activities so it is important that the cadets become proficient in them.

INSTRUCTOR NOTES/REMARKS

Nil.

REFERENCES

A1-004 B-GN-181-105/FP-E00 Maddison, G.R., Chief of Maritime Staff (1997). CFCD 105 Fleet Seamanship Rigging and Procedures Manual. Ottawa, ON.

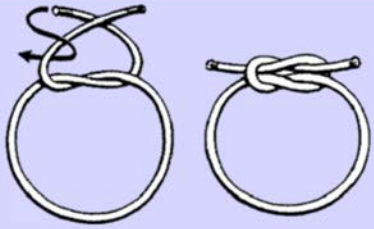
A1-009 A-CR-CCP-004/PT-001 D Cdts (1983). *Royal Canadian Sea Cadets Manual Volume 1*. Ottawa, ON.

C1-002 ISBN 0-7858-1446-9 Pawson, D. (2001). *Pocket Guide to Knots and Splices*. Edison, NJ: Charwell Books, Inc.

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

KNOTS, BENDS AND HITCHES CARDS

REEF KNOT



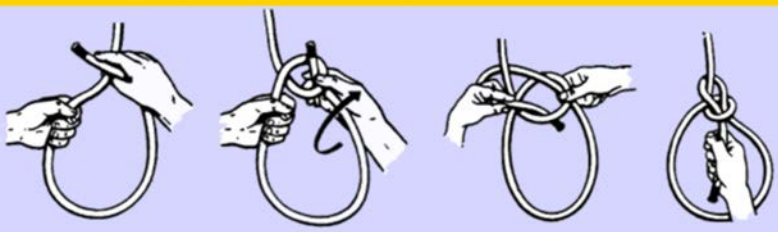
The reef knot is commonly used to tie two lines of equal diameter together, or it can be used to tie off the two ends of a line around an object (eg, parcels, or sails). It got its name from being the knot used to tie up or reduce the reefs or panels of sails.

The knot is made using the following method:

1. Put the left-hand working end of the line on top of the right-hand working end.
2. Bring the left-hand working end of the line under the right-hand working end.
3. Put the working end that is now on the right on top of the working end that is now on the left.
4. Bring the working end that is on top over and then under the other working end so that the working end in your left hand comes out of the same space through which it entered the knot.

TIE KNOTS, BENDS & HITCHES

BOWLINE



The bowline is the most useful knot for putting a temporary eye in a line; it can also be used as a lifeline around a person's waist.

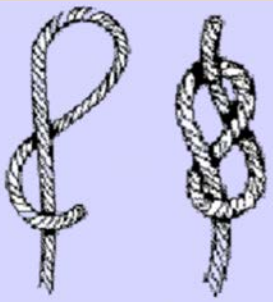
The knot is made using the following method:

1. With the standing end in one hand, form a small bight with the working end of the line, and lay it over top of the standing end of the line.
2. Bring the working end of the line up to form a loop at the bottom, and make the resulting loop whatever size you need.
3. Bring the working end up through the bight and around the standing end.
4. Bring the working end down through the bight.
5. Hold the two sides of the loop and the working end in one hand, while the other hand holds the standing end of the line, and pull in opposite directions.

TIE KNOTS, BENDS & HITCHES

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

FIGURE OF EIGHT



The figure of eight is a stopper knot, used to tie off the end of a line. It is commonly used to prevent the ends of the sheets of sails from pulling through blocks, eyebolts or fair-leads.

The knot is made using the following method:

1. Hold the standing end in one hand, and make a crossing turn with the working end passing under the standing part of the rope.
2. Bring the working end over the standing part.
3. Tuck the working end up through the loop from behind, forming a figure eight.
4. Pull tight on the working part.

TIE KNOTS, BENDS & HITCHES

SHEET BEND



A bend is used to join together two lines temporarily, and is characterized by making a bend in one of the lines.

The sheet bend is one of the simplest and easiest ways of joining together two pieces of line of unequal diameter; the smaller line is always made fast to the bight of the larger one. It can be used when you need to tie your sailboat up to another line.

The knot is made using the following method:

1. Fold an end of the larger line back on itself to form a bight.
2. Bring the working end of the smaller line up through the bight that was formed in the larger line.
3. Take the working end of the smaller line around behind both pieces of the first line.
4. Tuck the working end of the smaller line under itself and pull tight.

TIE KNOTS, BENDS & HITCHES

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

ROUND TURN AND TWO HALF HITCHES



The round turn and two half hitches is another way to secure a sailboat to a post or ring. It will never jam and can be untied quickly. The hitches should always be made with the running end of the line going in one direction.

The knot is made using the following method:

1. Bring the working end of the line around the post or ring two turns, making a full round turn.
2. Take the working end around the standing end, and tuck it behind itself.
3. Bring the working end around the standing end again and tuck to make a second half hitch.
4. Pull tight to finish the knot.

TIE KNOTS, BENDS & HITCHES

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.

THIS PAGE INTENTIONALLY LEFT BLANK

Unofficial convenience copy of A-CR-CCP-601/PF-001, cached 2026-11-08 from https://app.cadets.gc.ca/cadet-publications/A-CR-CCP-601-PF-001/A-CR-CCP-601-PF-001.pdf.
Verify against the official publication.