ROYAL CANADIAN SEA CADETS

PHASE TWO

INSTRUCTIONAL GUIDE

SECTION 1

EO M221.01 – USE A STROP FOR SLINGING

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-602/PG-001, 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.

Photocopy the handouts located at Annex A and either Annex B or C for each cadet.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for TP1 as it allows the instructor to generate interest in slinging a strop.

Demonstration and performance was chosen for TP2 and TP3 as it allows the instructor to explain and demonstrate how to use a strop for slinging while providing an opportunity for the cadets to practice these skills under supervision.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have made a strop and used it for slining.

IMPORTANCE

It is important for cadets to make and use a strop for slinging as it is a useful skill when working with rigging and handling lines. Making and using a strop allows cadets to safely hoist and lower a load.

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Teaching point 1 **Describe a Strop**

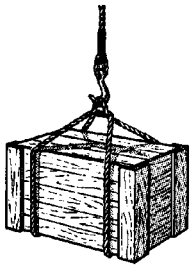
Time: 5 min Method: Interactive Lecture

STROP

A strop is a continuous loop in a line or wire rope. When using line, it can be made by tying the two ends together with a reef knot or by making a short splice in one length of line.

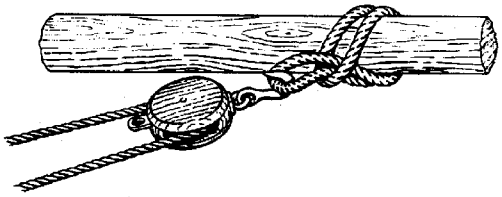
PURPOSE

A strop is used to pass around a case, spar, piece of line, etc. so as to provide an eye to be placed over a hook or shackle.



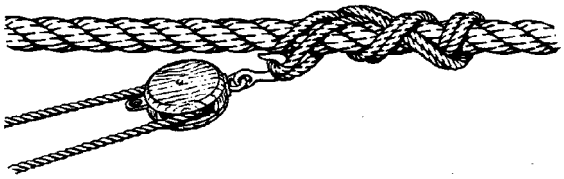
Royal Navy, Admiralty Manual of Seamanship 1964, Her Majesty's Stationery Office (p. 195)

Figure 1 Strop on a Case



Royal Navy, Admiralty Manual of Seamanship 1964, Her Majesty's Stationery Office (p. 193)

Figure 2 Strop on a Spar



Royal Navy, Admiralty Manual of Seamanship 1964, Her Majesty's Stationery Office (p. 193)

Figure 3 Strop on a Line



Provide examples of pre-made strops on hand for the cadets to view.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What is a strop?

Q2. How is a strop usually made?

Q3. What is the purpose of a strop?

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ANTICIPATED ANSWERS

A1. A strop is a continuous loop in a line or wire rope.

A2. A strop is made by tying the two ends together with a reef knot or by making a short splice in one length of line.

A3. A strop is used to pass around a case, spar, piece of line, etc. so as to provide an eye to be placed over a hook or shackle.

Teaching point 2 **Demonstrate and Have the Cadets Make a Strop**

Time: 60 min Method: Demonstration and Performance

SHORT SPLICE

Purpose

The short splice is used to join two pieces of line that are not required to pass through a block. When made with one piece of line a strop is created.



B-GN-181-105/FP-E00, CFCD 105 Fleet Seamanship Rigging and Procedures Manual (p. 5-58)

Figure 4 Short Splice

Ottawa, ON: Department of National Defence.

Three-Strand Line

Three-strand line consists of three strands twisted together in the same direction. This process is known as laying.

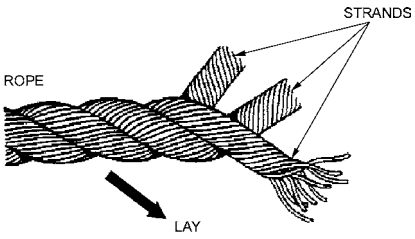

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Figure 5 Line Lay



Explain and demonstrate the steps to making a strop using a short splice prior to the cadets completing their own. Distribute line and handouts to the cadets.

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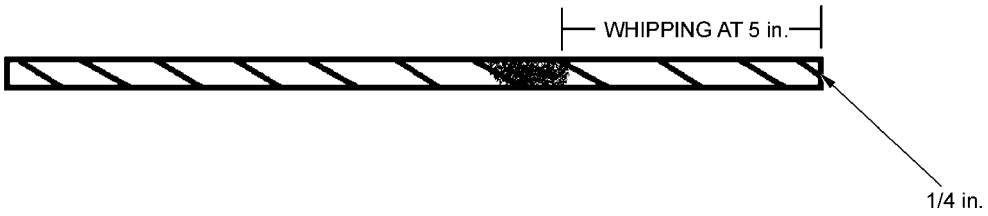
STEPS TO MAKING A STROP USING A SHORT SPLICE

1. Complete a whipping on both ends of the line at a distance from the line's end equal to 20 times the diameter of the rope (e.g. 2 cm diameter line requires a whip located at 40 cm from its end, 1/4 inch diameter line requires a whip located 5 inches from its end, etc.).



D Cdts 3, 2007, Ottawa, ON: Department of National Defence

Figure 6 Example of Whipping Distance

2. Unlay the strands of the line back to the whippings and whip the ends of each strand.



Masking tape may be used to finish the ends of each strand, instead of a whipping.

3. Marry the ends of the line together so that one strand of each end lies between two strands of the opposite end.

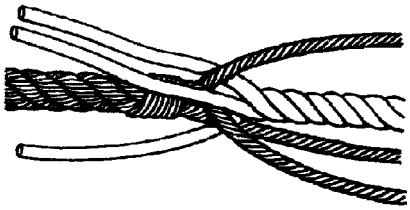


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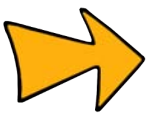
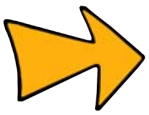
Figure 7 Steps of Line Marrying



Strands are spliced in the opposite direction of the line lay.



To prevent the married lines from loosening, place a small whip or a piece of tape around the join between lines A and B.



When making a short splice, finish splicing the end of line A before starting line B. Tape the strands (C, D and E) against line B until you are ready to splice that end.

4. Remove the whipping from line A.

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Verify against the official publication.

To make tucking the strands easier the use of a marlin spike/fid is recommended.

Strands are always spliced in the opposite direction of the line lay.

5. Lay F over C, tuck it under E, and bring it out between D and E.



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Figure 8 Steps of Line Marrying

6. Lay G over E, tuck it under D, and bring it out between D and C.

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Figure 9 Steps of Line Marrying

7. Lay H over D, tuck it under C, and bring it out between C and E.

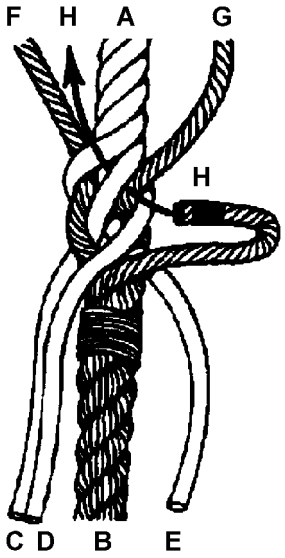

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Figure 10 Steps of Line Marrying

8. Continue until all strands have been tucked under the strands of the other end of line.

Once the initial tucks have been completed, continue the remaining tucks by going over one strand and under the next until the length of each strand is completely tucked into the other end of line.

9. Remove the whipping from line B.

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10. Lay and tuck C, D and E in the same manner as F, G and H listed above.

11. To finish the splice, dog the ends. To do so, split the ends of each strand in half. Take each half and whip it to its neighbour over the adjacent strand.



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Figure 11 Completed Short Splice by Dogging



Allow the cadets to practice making a short splice.



Complete an additional splice with the cadets so they can follow along, asking questions and verifying the tucks are being completed properly.



Another option is to colour the ends of each strand with a different colour. This will clarify the tucking of each strand. As illustrated in Annex C.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. What is the purpose of a short splice?

Q2. What is the process called when the three strands of line are twisted together in the same direction?

Q3. How do you determine the amount of line required to complete the short splice?

ANTICIPATED ANSWERS

A1. The short splice is used for joining two pieces of line that are not required to pass through a block.

A2. Laying.

A3. The distance required is equal to 20 times the diameter of the rope.

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Verify against the official publication.

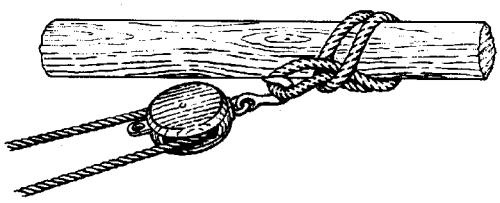
Teaching point 3 **Demonstrate and Have the Cadets Use a Strop for Slinging**

Time: 20 min Method: Demonstration and Performance

PUTTING A STROP ON A SPAR

Explain and demonstrate how to attach a strop to a spar.

Place the strop around the spar. Pull the strop through itself exposing a loop which may be attached to a hook.



Royal Navy, Admiralty Manual of Seamanship 1964, Her Majesty's Stationery Office (p. 193)

Figure 12 Strop on a Spar

Allow the cadets to practice attaching a sling to a spar.

USING A STROP FOR SLINGING A BOX

Explain and demonstrate how to use a strop for slinging a box.

Whenever an item or a collection of packages is to be hoisted, it is attached to a hook through the use of a sling. A sling can be made with a single strop placed around the box, tucked through itself and attached to a hook or by using two strops; one located on either end of the item.

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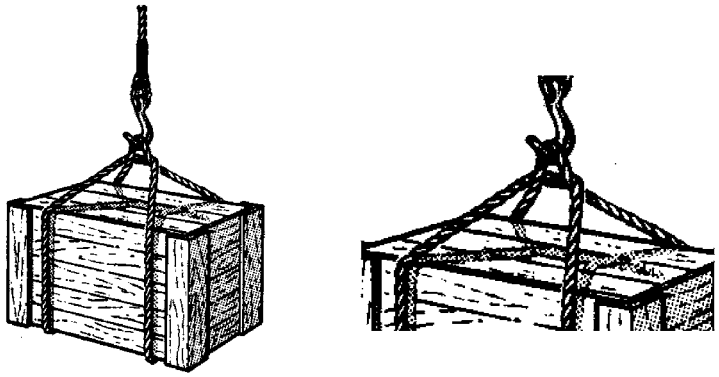
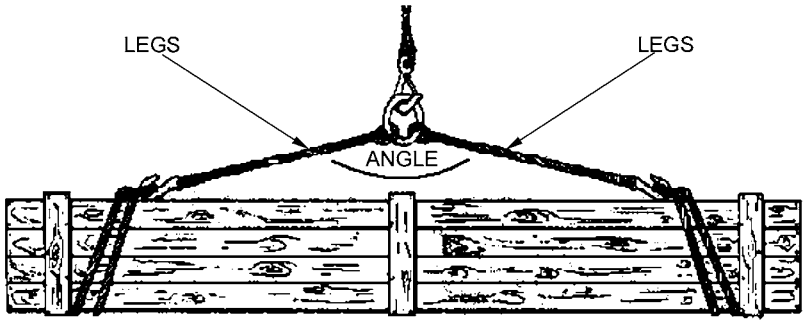


Royal Navy, Admiralty Manual of Seamanship 1964, Her Majesty's Stationery Office (p. 195)

Figure 13 Sling a Box Using a Strop



Royal Navy, Admiralty Manual of Seamanship 1964, Her Majesty's Stationery Office (p. 194)

Figure 14 Sling a Case Using Two Strops

When using strops for hoisting, the angle between the legs of the sling will determine the amount of stress the strops must endure. The recommended angle of work is between 0 degrees and 120 degrees. Figure 15 provides examples of some stress that a strop maybe be subject to when using slings.

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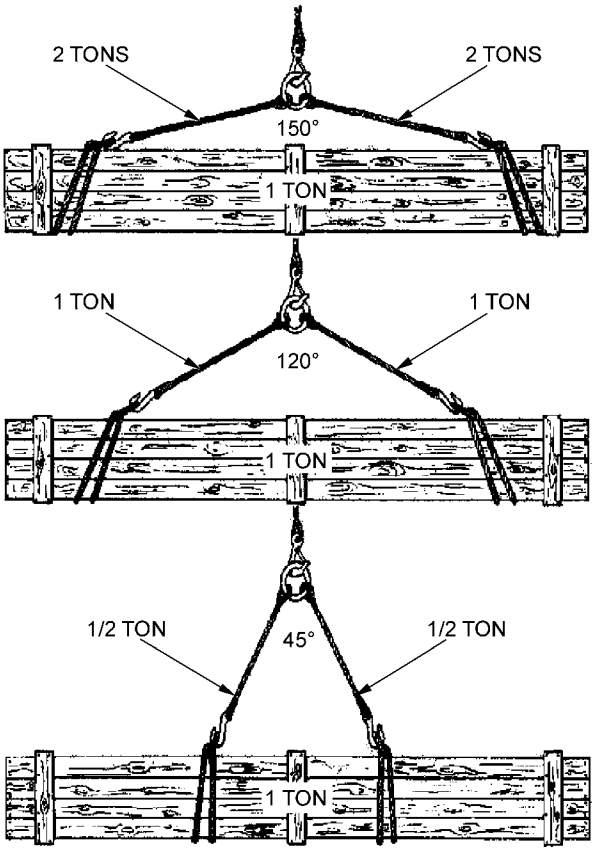

Royal Navy, Admiralty Manual of Seamanship 1964, Her Majesty's Stationery Office (p. 194)

Figure 15 Stresses in the Legs of Slings

The angles at which a sling is operated should be limited to prevent unnecessary stress on strops when hoisting items.

Allow the cadets to practice using a strop for slinging a box.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

Q1. What is a sling used for?

Q2. What are the recommended angles of work for the legs of a sling?

Q3. How do you use a strop to sling a box?

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ANTICIPATED ANSWERS

A1. Hoisting an item or a collection of packages.

A2. Between 0 degrees and 120 degrees.

A3. Place the strop around the box, tuck it through itself and attach it to a hook.

END OF LESSON CONFIRMATION

The cadets' participation in TP2 and TP3 will serve as the confirmation of this lesson.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

The use of strops is a necessary component of slinging objects that require hoisting. Being able to make a short splice, hence completing a strop, will be a useful skill during Phase Three training when learning to rig sheer legs.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

A1-004 B-GN-181-105/FP-E00 Chief of Maritime Staff. (1997). *CFCD 105 Fleet Seamanship Rigging and Procedures Manual.* Ottawa, ON: Department of National Defence.

C1-003 (ISBN II 770973 5) Royal Navy. (1972). *Admiralty Manual of Seamanship 1964* (Vol. 1). London, England: Her Majesty's Stationery Office.

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STEPS TO MAKING A STROP USING A SHORT SPLICE

The strands of each line are tucked between the strands of the other line. The strands are laid against the lay and tucked under the next strand and emerging between this and the subsequent strand.

1. Complete a whipping on both ends of the line at a distance from the lines end equal to 20 times the diameter of the rope (e.g. 2 cm diameter line requires a whip located at 40 cm from its end, 1/4 inch diameter line requires a whip located 5 inches from its end, etc.).

2. Unlay the strands of the line back to the whippings and whip the ends of each strand.

3. Marry the ends of the line together so that one strand of each end lies between two strands of the opposite end.

To prevent the married lines from loosening, place a small whip or a piece of tape around the join between lines A and B.

When making a short splice, finish splicing the end of line A before starting line B. Tape the strands (C, D and E) against line B until you are ready to splice that end.

4. Remove the whipping from line A.



Strands are spliced in the opposite direction of the line lay.

5. Lay F over C, tuck it under E, and bring it out between D and E.

6. Lay G over E, tuck it under D, and bring it out between D and C.

7. Lay H over D, tuck it under C, and bring it out between C and E.

8. Continue until all strands have been tucked under the strands of the other end of line.

9. Remove the whipping from line B.

10. Lay and tuck C, D and E in the same manner as F, G and H listed above.

11. To finish the splice, dog the ends. To do so, split the ends of each strand in half. Take each half and whip it to its neighbour over the adjacent strand.



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Figure A-1 Completed Short Splice by Dogging

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SHORT SPLICE

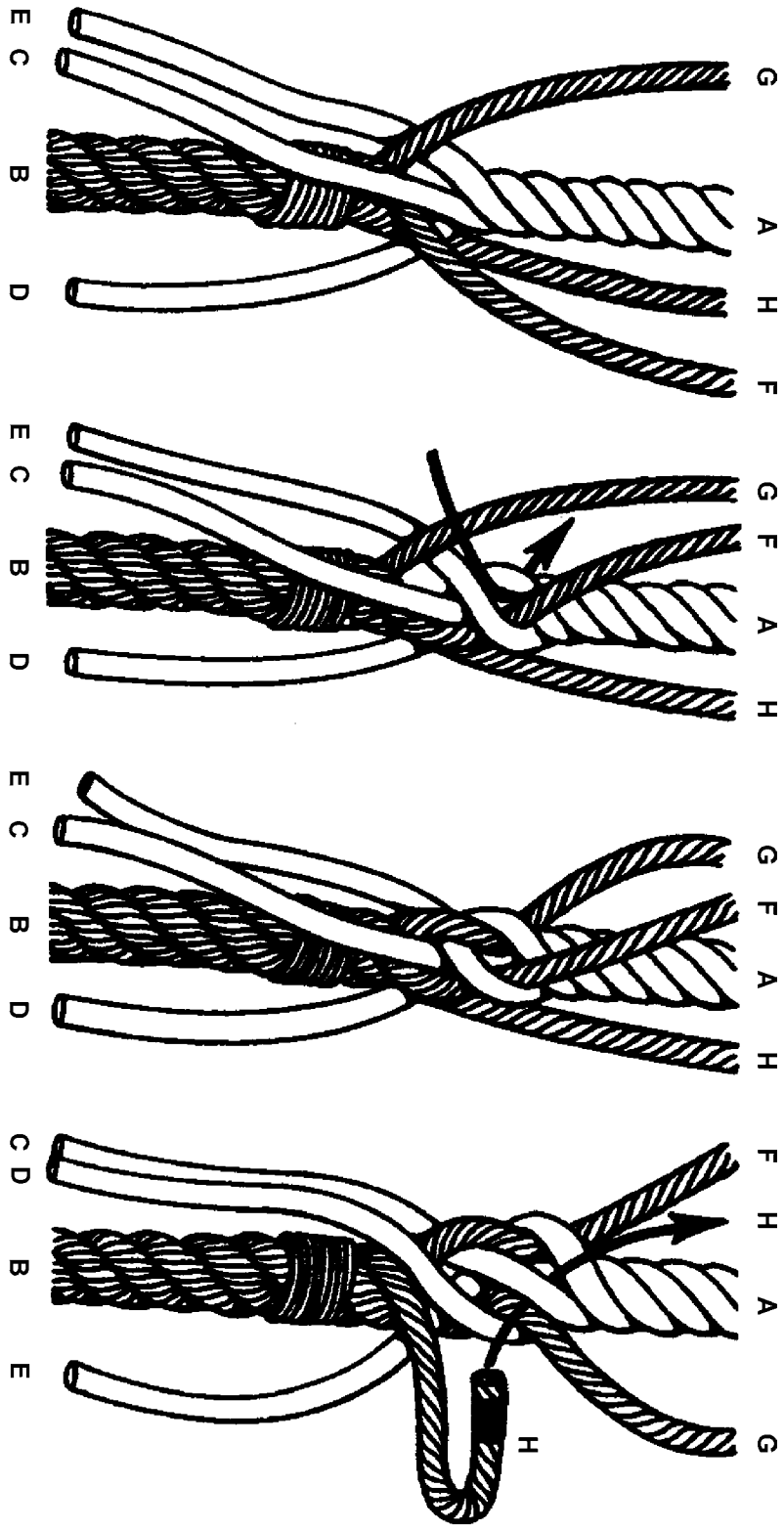

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Figure B-1 Short Splice

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SHORT SPLICE (COLOUR ENDS)

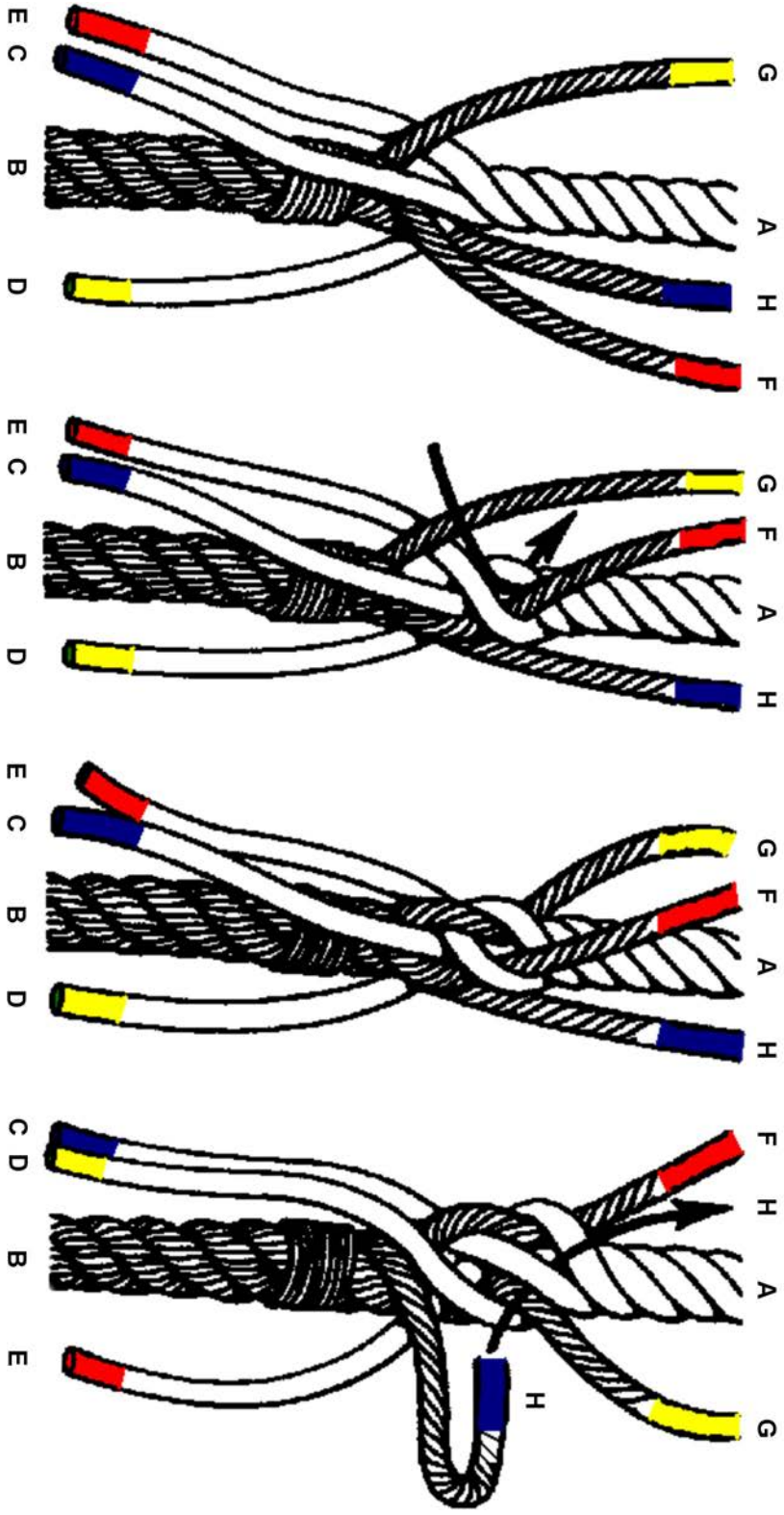

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Figure C-1 Short Splice (Colour Ends)

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