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Unit Introduction

What you will learn in this unit

By the end of this unit, you will be able to demonstrate knowledge of:

- Cutting wire rope
- Knots
- Splices
- Size of lines
- Techniques to file spikes

Why it's important for you to learn this unit

It is always the responsibility of any person using these materials to inform him/herself about the Occupational Health and Safety Regulations related to the work being conducted. A full list of OHSR related to this unit can be found in the relevant package.

Are you ready to take this unit?

There are no prerequisites for this unit.

Does this unit apply to you?

This unit applies to you if you are in the following:

- All forest harvesting occupations as required

Section 1032-01: Cutting Wire Rope

What you need to know about this section

By the end of this section, you will be able to demonstrate your ability in the following key point:

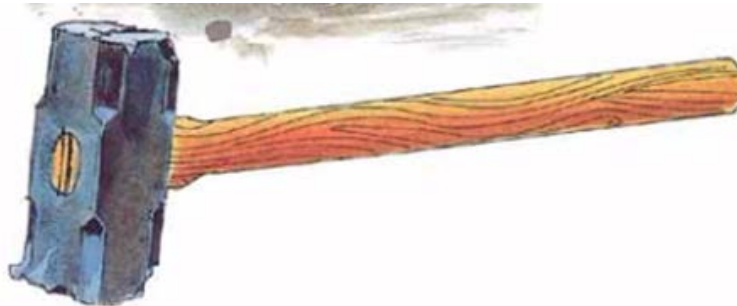
1.1 Cut wire rope using the correct tools and PPE in accordance with best practice

Key Point 1.1: Cut Wire Rope Using the Correct Tools and PPE In Accordance with Best Practice

Your trainer will demonstrate the procedure to cut wire rope.

Cutting wire rope:

- Always wear eye protection and hand protection
- A face shield is required; Bucker's shield and goggles are not adequate
- When using a guillotine, stand on the closed side
- Use a soft hammer. A soft hammer is marked with an "S"
- Do not use a mushroomed hammer



Example of mushroomed hammer that should not be used

- When using a wire axe, cut with the lay of the line
- Keep the cutting blade in the same position on the line to avoid flying pieces
- When holding the line for another worker to cut, wear safety glasses. Screen-type eye protection is not acceptable for cutting line
- Remove damaged wire cutting tools from service

Now try the quiz on the next page.

Cut Wire Rope Using the Correct Tools and PPE In Accordance with Best Practice—Self-Quiz

1. Which of the following is required to protect your eyes?
 - ☐ Bucker's shield
 - ☐ Goggles
 - ☐ Face shield
2. Can you use a mushroomed hammer?
 - ☐ Yes
 - ☐ No
3. Is screen-type eye protection acceptable for cutting line?
 - ☐ Yes
 - ☐ No
4. Does PPE include hand protection?
 - ☐ Yes
 - ☐ No



Now check your answers on the next page.

Cut Wire Rope Using the Correct Tools and PPE In Accordance with Best Practice—Quiz Answers

1. Which of the following is required to protect your eyes?

Answer: **Face shield**

2. Can you use a mushroomed hammer?

Answer: **No**

3. Is screen-type eye protection acceptable for cutting line?

Answer: **No**

4. Does PPE include hand protection?

Answer: **Yes**

Section 1032-02: Splicing

What you need to know about this section

By the end of this section, you will be able to demonstrate your ability in the following key points:

2.1 Complete the logger's eye splice in accordance with the WorkSafeBC Splicing Guide

2.2: Complete the short long splice in accordance with the WorkSafeBC Splicing Guide

2.3: Complete the passing splice in accordance with the WorkSafeBC Splicing Guide

2.4: Complete the knotted strawline connection splice in accordance with the WorkSafeBC Splicing Guide

2.5: Complete the strawline spliced connector splice in accordance with the WorkSafeBC Splicing Guide

2.6: Complete the farmer's eye splice in accordance with the WorkSafeBC Splicing Guide

2.7: Complete the Molly Hogans connection in accordance with the WorkSafeBC Splicing Guide

2.8: Complete the Molly Hogan for securing pins in accordance with the WorkSafeBC Splicing Guide

Key Point 2.1: Complete the Logger's Eye Splice in Accordance with the WorkSafeBC Splicing Guide

This procedure has 56 steps.

Starting procedure

When splicing the second eye for a strap, the already-spliced eye should be in the position shown. The eye must be vertical and the cut off strands upright before the line is spiked secure. This will result in a curved strap that will fit nicely around a tree or stump.



The eyes will be turned correctly to fit in the shackle or gooseneck. This procedure is recommended for use with 1¼ in. (32 mm) lines as demonstrated here.



Step 1: Spiking the line down securely

Whenever possible select a solid high stump on which to spike the line down.

- Drive four spikes into the stump, two on each side and the proper distance apart to hold the lines together.



- Keep the spikes well back from the edge of the stump to avoid splitting out.
- Drive the two spikes on the strand side down far enough so that the line can just be slipped in under the heads.
- Drive the other two spikes down only far enough so the lines can be inserted between the head of the four spikes. If they are driven too far down, the lines cannot be inserted.
- Leaving a good long end, insert the strand end first.
- Hold the strand end tight against the two spikes.
- Leave a large loop before inserting the other line between the four spikes.
- It is hazardous to try and spike down a small loop as the line can spring off the spikes violently.
- Some splicers secure the strand end with additional spikes before making the loop.
- When both lines are fitted between the spikes with a large loop, drive the spikes down to hold the line from springing out, but loose enough to allow adjustment to the loop and strand end.
- Drive one or two spikes in about half way between the two lines.
- Adjust the length of strand end desired, about 4 ft. (1.2 m).
- Spike the strand end secure.
- Adjust the loop to the size of eye desired, then spike it solid.
- Drive all spikes down solid.
- Be certain that the side to be spliced into is spiked solid so it will not turn when the splice is being made.

Step 2: Starting the splice

- Be sure to use properly tempered long marlin spikes.
- Work from the strand side and, using a soft hammer, drive the marlin spike under two strands.
- Start as close as possible to the stump.
- The marlin spike can be inserted more easily if it is driven in slightly, turned in the direction of the lay then driven through. Hold it tightly while inserting the spike so the spike does not jump out.



- If the spike pierces the core, drive another spike in clear in the correct place.



Step 3: Selecting and inserting the first strand

- When the spike is inserted clear under two strands, drive it well in, to open the line.
- Roll the spike down the lay of the line.
- Select a strand that is about two strand widths below the lay where the spike is.
- This is important to make a neat, tight splice and to bring the remaining strands into their proper place without bulging out.
- This first strand, when tucked, should be laid across sharply.
- Take the selected strand and press it across the line firmly to bend it into position.
- Without twisting the strand, insert it in the opening made by the spike.



- The strand is now ready to pull through into its first position.



Step 4: Rolling in and tucking the first strand

- Make sure that there is no twist in the strand and then pull it in firmly.
- Maintain tension on the strand to prevent it from slipping back.



Step 5: Completing the first tuck of #1 strand

- Keep a firm tension on the strand and bring it back under the line.
- Pull on the strand firmly and at the same time roll the spike back up the lay, pushing the strand ahead, as far up as it will go.
- Sometimes it may be necessary to tap the strand behind the spike to get it to lay in tightly.
- Keep a tension on the strand to prevent it from springing back. Pull the spike out.
- Tap the two overlaying strands lightly to help hold the tucked strand in place.



Step 6: Tucking the next strand #2

- Drive the spike in, one strand further down the line and under two, as shown.

**Step 7: Second Step in tucking strand #2**

- Roll the spike down along the lay.
- Drive the spike well in to make a large opening.
- Press the strand firmly over the top to kink it slightly before inserting.
- Insert the strand and pull all the way firmly.

**Step 8: Completing first tuck of strand #2**

- Keep a firm tension on the strand and bring it back underneath.
- Roll it up the lay, tight against strand #1.
- Maintaining the tension, tap the strand tightly to set it in firmly.
- Remove the spike.



Step 9: Continuing the splice

- For strands #3 and #4, follow the same procedure used for strands #1 and #2.
- Be sure to keep all strands in tight, ensuring that they do not bulge out on the strand side.
- Take care to roll the strands as far up the lay as possible.
- Do not remove the spike yet.



Step 10: Inserting the spike for the second tuck of strand #1

- After #4 strand is tucked once and rolled up tight, leave the spike in.



- Roll the spike back up the lay and press down firmly.
- This will open the line slightly and expose the core, making it easier to insert a second spike.
- Drive a second spike down between the core and under two strands.



- This can also be done by removing the first spike and driving it the same way as when tucking the four strands, but two strands away from the last strand instead of only one.
- This method could be used throughout the splice, and the end result would be the same.

- When the second spike is inserted, remove the first spike from the line.

Step 11: Inserting #1 strand for its second tuck

- Drive the second spike well in to form a good opening.
- Roll the spike down along the lay, keeping the unravelled strands #5 and #6 and the core on top of the spike.
- Take #1 strand under the splice and pull it up solidly against the underside of the splice. This will tend to bend the strand slightly so it will lay in better.
- From the splice side, insert the strand through the opening on the upper side of the spike, underneath the two strands.
- Make sure strands #5, #6 and the core are on top, outside the loop of strand #1.



Step 12: Continuing with #1 strand

- Pull strand #1 all the way through with the spike in this position.
- Make sure that the strand is pulled up tightly, and there is no loop left underneath.
- Keep a strong, steady tension on the strand to prevent it from springing back underneath, creating a loop.



Step 13: Near completion #1 strand, second tuck

- Pulling hard on the strand, roll the spike up the lay, forcing the strand ahead of it.



Step 14: Completed second tuck of #1 strand

- Keeping a strong tension on the strand, roll the spike all the way, forcing the strand as far as it will go.
- Keep firm tension on the strand until the spike has been removed.



Step 15: Inserting the spike to tuck the #1 strand for the third time

- Drive the spike in, one strand down the line from where #1 strand is protruding on the second tuck.
- The spike is driven one strand away, and under two strands, exactly the same distance apart as the first four.
- Drive it well in to make a good opening.



Step 16: Inserting #1 strand for the third tuck

- Roll the spike down the lay of the line.
- Before inserting the strand, press the strand over and down into the position where it will be when tucked.

- This will tend to bend it, making it easier to pull in tight.
- Insert the strand and pull it all the way up tightly with the spike in this position.



Step 17: Completing the third and final tuck of strand #1

- Holding a tension on the strand, pass it under the line.
- Pull it firmly to the line side, and at the same time roll the spike up the lay, forcing the strand up tight as far as it will go.
- Do not hammer on top of the strand if it does not lay right in, because this will force it back underneath, forming a loop. If it does not lay right in, roll the spike back down the lay and pull from the other side again, but harder this time.
- Do not remove the spike when the third tuck is completed.



Step 18: Commencing the first tuck of strand #5

- After strand #1 is tucked in tight on the third tuck, leave the spike in the line.
- Roll the spike down the lay of the line to where it was when tucking the last strand.
- Drive it in to make a good opening, as strand #5 will go in the same place.
- Insert strand #5 as with the other strands.
- Pull it all the way through, up tight with the spike in this position.



Step 19: Completing the first tuck of strand #5

- Holding a good tension on the strand, pass it under the line.
- Still pulling on the strand, roll the spike up the lay, forcing the #5 strand up tight against the completed tucked #1 strand.
- This first tuck can be tapped in to shorten the strand side, because it is the first tuck and cannot be driven back.
- It is important to pull these first tucks in as much as possible to make a professional job.
- Leave the spike in the line.



Step 20: Preparing to tuck strand #2 for the second time

- Roll the spike back up the lay as when tucking strand #1 for the second time.
- Press the spike down solidly to help open the line, exposing the core. This will make it easier to insert the second spike.
- Insert the second spike alongside the core and under two strands exactly as shown in Step 10.



Step 21: Tucking strand #2 for the second tuck

- Follow the same procedure as with strand #1 throughout the remainder of the splice.



Step 22: Completed second tuck of strand #2

- The completed second tuck of strand #2 is shown in this illustration.



Step 23: Starting third tuck of strand #2

- This illustration shows the starting position of the third tuck of strand #2.



Step 24: Completed #2 strand, tucked three times

- Leave the spike in to start the first tuck of #6 strand.



Step 25: Starting first tuck of strand #6

- Roll the spike down the lay. Insert #6 strand for the first tuck. Pull it through, up tight.



Step 26: Completing first tuck of strand #6

- Pass the strand under the splice and roll it into place with the spike for completion of the first tuck of strand #6. Leave the spike in.



Step 27: Preparing to tuck strand #3 the second time

- Insert the second spike to place the second tuck of strand #3.



Step 28: Starting second tuck of strand #3

- Remove the first spike. Roll the second spike down the lay.
- Pull #3 strand up hard under the splice to bend it. Insert it through the opening above the spike.



Step 29: Completing second tuck of strand #3

- Pull the strand through firmly so it is tight underneath.
- Pull the strand firmly. At the same time, roll the spike up the lay of the line, forcing the strand as far as it will go. Remove the spike.
- This completes the second tuck of strand #3.



Step 30: Preparing third tuck of strand #3

- Drive the spike through, one strand away and under two, as before.
- Roll the spike down the lay, keeping a good opening.
- Bend the strand and insert it with the spike in this position.



Step 31: Completing third tuck of strand #3

- Pull the strand through from the strand side.
- Place the strand back under the splice.
- Pull it hard from the line side.
- Roll the spike up the lay, forcing it into place. This completes the third tuck for strand #3. Do not remove the spike.



Step 32: Tucking the core

- When tucking the core for the first time, use the same procedure as for any strand.
- Roll the spike down the lay of the line.
- Drive the spike to make a wide opening as the core is slightly larger than a strand.
- Insert the core and pull it through from the strand side.



Step 33: Still tucking the core

- Pass the core under the line. Pull it tight.
- Roll the spike up the lay, forcing the core in tight against the #3 strand.
- Leave the spike in the line.

Note: The first tucks of #5, #6 and the core are tucked in the same place, behind the third tucks of #1, #2 and #3.



Step 34: Tucking #4 strand again

- Tuck #4 strand for the second time.
- Roll the spike up the lay, press down and drive in the second spike.



Step 35: Still tucking #4 strand

- Remove the first spike and roll the other one down the lay.
- Bring the #4 strand under the line, then pull it up firmly to bend it.
- Insert the strand and pull it through from the line side.



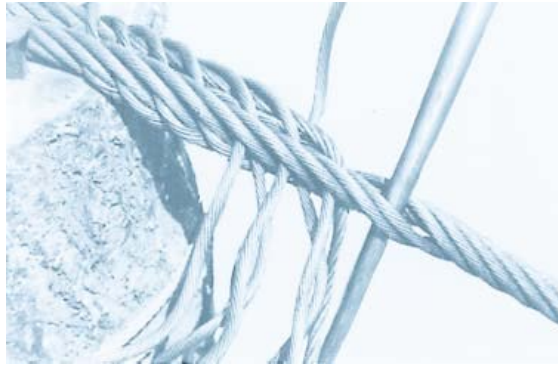
Step 36: Still tucking #4 strand

- Keep a firm tension on the strand.
- Pull it hard from the strand side. At the same time, roll the spike up the lay, forcing the strand in tightly.
- Keep tension on the strand when removing the spike.
- The #4 strand is tucked two times.



Step 37: Still tucking #4 strand

- Tuck #4 strand for the third time.
- Drive the spike one strand away from the tucked core and under two.



Step 38: Still tucking #4 strand

- Roll the spike down the lay of the line.
- Force the strand across the top of the splice to bend it a little.
- Insert the strand from the line side and pull it through tightly from the strand side.



Step 39: Final tuck #4 strand

- Keep tension on the strand.
- Pass it under the splice.
- Pull it firmly from the line side. At the same time, roll it into place with the spike up the lay.
- Leave the spike in.

Note: There are no strands left to go in with this tuck.



Step 40: Starting to tuck #5 strand again

- Tuck strand #5 for the second time.
- Roll the spike up the lay and press down to open the line.
- Drive in the second spike between two strands and the core.

- Remove the first spike.



Step 41: Still tucking #5 strand

- Roll the spike down the lay.
- Bring strand #5 under the line.
- Strand #5 is protruding with the third tuck of strand #1. Strand #5 will be the lower strand of the two. If the two strands are pressed together, follow them to make sure you have the correct strand #5.
- Bend the strand and insert it from the strand side.



Step 42: Still tucking #5 strand

- Pull the strand through, up tight from the line side.
- Holding the tension, pull the strand up the lay from the strand side.
- Roll the spike up the lay, forcing the strand in place.
- Remove the spike.



Step 43: Final tuck #5 strand

- Tuck #5 strand for the third and final time.
- Drive the spike in, one strand away from #5 and under two strands.
- Roll it down the lay.
- Force the strand over the top of the splice to bend it.
- Insert the strand from the line side.

Note: If you are splicing unusually tight line, and it becomes difficult to insert the spike, have a bar held under the splice and on the stump.

**Step 44: Still on final tuck of #5 Strand**

- Pull the strand through up tight from the strand side.
- Keeping a tension, pass the strand back underneath.

**Step 45: Finished final tuck #5 strand**

- Pull the strand firmly from the line side.
- Roll the spike up the lay, forcing the strand into place.
- This completes three tucks of #5 strand.
- Leave the spike in.



Step 46: Starting to tuck #6 strand again

- Tuck the #6 strand for the second time.
- Roll the spike up the lay and press down to open the line.
- Drive in the second spike between the core and two strands, as with the other five strands.
- Remove the first spike.



Step 47: Still tucking #6 strand the second time

- Roll the spike down the lay.
- Drive the spike in to make a good opening.
- Pull the #6 strand up underneath firmly to bend it slightly. Be sure you have the correct strand. Strands #2 and #6 will be in the same lay.
- Insert #6 alongside the spike from the strand side.



Step 48: Finishing the second tuck of strand #6

- Pull the strand through tightly from the line side.
- Pull the strand back up the lay of the line from the strand side.
- Roll the spike up the lay to force the strand into place. This completes two tucks of strand #6.
- Remove the spike.



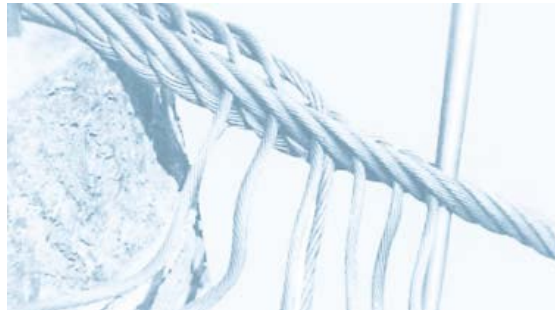
Step 49: Starting the third tuck of strand #6

- Tuck strand #6 for the third and final time.
- Drive the spike in from the top of the line, angled down the lay, one strand down from strand #6 and under two.
- Roll the spike down the lay.
- Bend the strand as before and insert it as shown.



Step 50: Finishing the third tuck of strand #6

- Pull the strand firmly through from the strand side.
- Hold the tension on the strand and pass it to the line side.
- Pull it firmly up the lay.
- Roll the spike up the lay to force it into place.
- This completes three tucks of strand #6.
- Leave the spike in.



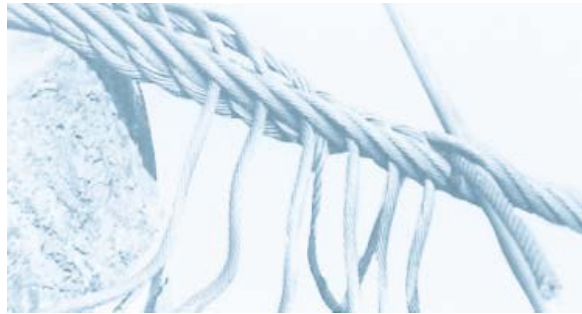
Step 51: Starting the second tuck of the core

- Tuck the core for the second time.
- Roll the spike up the lay and press it down to open the line.
- Insert the second spike as before, alongside the core and under two strands.
- Remove the first spike.



Step 52: Still tucking the core the second time

- Roll the spike down the lay of the line.
- Drive it in to make a good opening as the core is slightly larger than the strands.
- Bring the core under from the line side and pull it up firmly to bend it a little.
- The core is in the same lay as #3 but it is easily recognizable.
- Insert the core in the space on the top side of the spike, as for the other strands.



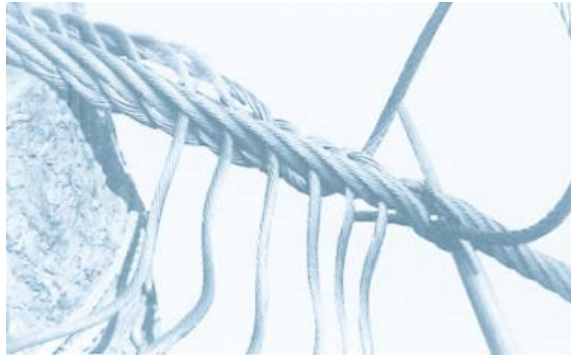
Step 53: Finishing the second tuck of the core

- Pull the core through tightly from the strand side.
- Keep tension on the core.
- Pull it over the top of the splice, up the lay.
- Roll the spike up the lay to force the core into place.
- This completes two tucks of the core.
- Remove the spike.



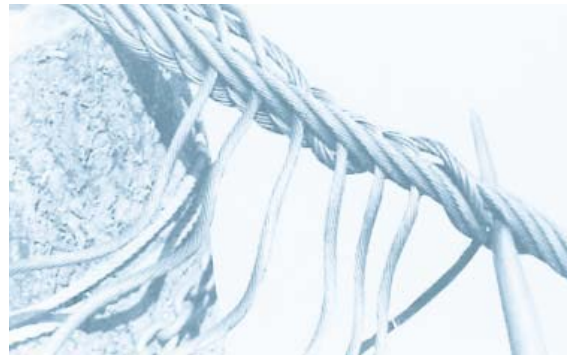
Step 54: Starting the third tuck of the core

- Tuck the core for the third and final time.
- Drive the spike from the top in the direction of the lay, one strand away from the core and under two.
- Roll the spike down the lay, making a good opening.
- Bend the core and insert it as shown.



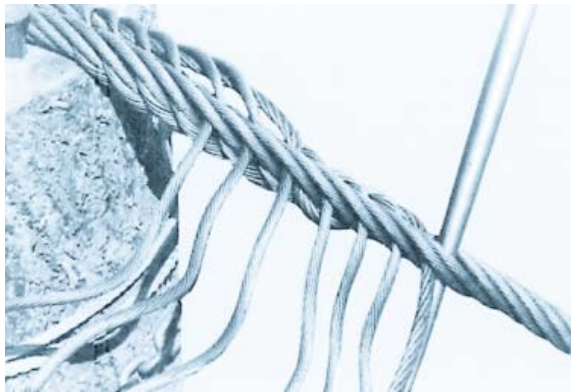
Step 55: Still tucking the core the third time

- Pull the core through tightly from the strand side.



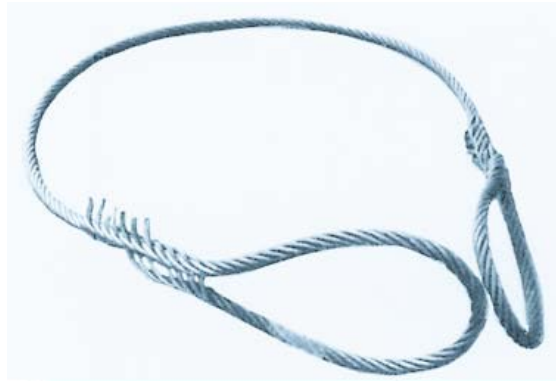
Step 56: Finishing the third tuck of the core

- Bring the core back under the splice and pull it up the lay from the line side.
- Roll the spike up the lay, forcing the core into place.
- This completes the splice with all the strands and core tucked three times.
- Remove the spike.



Completed strap

- Because the first strand was kept crossed over sharply, the remaining strands have not bulged out. The second eye splice of a strap was made with the first eye in the correct position (eye vertical with the strands upright) and the strap and eyes are curved correctly for easier hanging. This is most important when splicing short straps.



Now try the quiz on the next page.

Logger's Eye—Self-Quiz

1. This procedure is recommended for use with what diameter lines?
 - ☐ 1½ in. (38 mm)
 - ☐ 1¼ in. (32 mm)
2. How many spikes do you drive into the stump to hold the line down?
 - ☐ Two spikes
 - ☐ Four spikes
3. To start the splice, you drive the marlin spike under how many strands?
 - ☐ Two strands
 - ☐ Four strands
4. How many times do you tuck the first strand?
 - ☐ Two times
 - ☐ Three times
5. How many times do you tuck the core?
 - ☐ Two times
 - ☐ Three times



Now check your answers on the next page.

Logger's Eye—Quiz Answers

1. This procedure is recommended for use with what diameter lines?

Answer: **1¼ in. (32 mm)**

2. How many spikes do you drive into the stump to hold the line down?

Answer: **Four spikes**

3. To start the splice, you drive the marlin spike under how many strands?

Answer: **Two strands**

4. How many times do you tuck the first strand?

Answer: **Three times**

5. How many times do you tuck the core?

Answer: **Three times**

Key Point 2.2: Complete the Short Long Splice in Accordance with the WorkSafeBC Splicing Guide

Your trainer will demonstrate this procedure. Use these pages as reference.

There are 32 steps to this procedure.

A worker should have experience with the Logger's splice before attempting the short long splice.

This splice is used to join two lines of the same diameter and lay. It is generally used in an emergency or for temporary use in running lines.

The line is divided in half and raveled together a distance, and then the strands tucked in the conventional manner where they join.

It tends to wear quickly at the joints where the strands are tucked, because they protrude above the diameter of the line.

When used for running lines, reefing lines or running line extensions, it will pass through foul blocks and high-lead leads easily, and can be spooled around drums. For this use, the strands should be tucked at least four times with the strands cut off long. This is because the strands slip more, because the splice is not as full as an eye splice.

The distance between the finished tucks should be approximately 8 ft. (2.4 m) for 1 1/4 in. (32 mm) line and 6 ft. (1.8 m) for 7/8 in. (22 mm) line. There is little advantage to having the splice any longer.

Starting procedure

- Split the two ends in half.
- Unravel the two ends for equal distances.
- If the splice is to be 6 ft. (1.8 m) between the inside finished tucks, unravel each end about 9 ft. (2.7 m).
- Cut off the three strands with the core unraveled from one end.
- Cut off the three strands without the core unraveled from the other end.
- Unravel and lay in each set of three strands up to about 3 ft. (1 m) on each end. These two sets of three strands, one with the core in, each about 3 ft. (1 m) long, will be used for tucking.
- Cut off the unraveled sets of three (one with the core), to leave about 3 ft. (1 m) ends for splicing.

There will be four tucked splices similar to the Logger's Splice.

The four splices will be the same except that two of the splices will have the core to tuck as well as the three strands.

It is important that when the line is spiked down for splicing, the first tuck is under two strands, one strand from each part of the line being joined together.

Step 1

- Split the two ends evenly.
- Unravel each end for the desired distance.



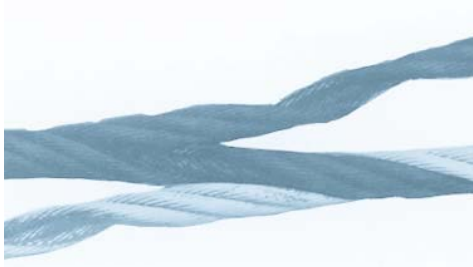
Step 2

- Cut off the three strands with the core that will be unraveled from one end.
- Cut off the three strands without the core that will be unraveled from the other end.
- Lay the three (blue) strands without the core on the three (red) strands with the core.



Step 3

- Continue to ravel the three (blue) strands around the three (red) strands with the core while unraveling the three (red) strands.
- Unravel and ravel to about 3 ft. (1 m) from the end of the three (blue) coreless strands. This end will be used for splicing and tucking.



Step 4

- In the other direction, ravel the three (red) strands with the core onto the three (blue) strands to about 3 ft. (1 m) from the end.



Step 5

- Cross the two sets of strands.



Step 6

- Cross the two sets of strands at the other join.



Step 7

There are four short splices to do.

- Starting with the strands with no core, spike the line down securely, keeping the line closed up.



Step 8

- Drive the spike under two strands.

- Be sure to start with one strand from each section of line laid together.



Step 9

- Tuck in the first (top) red strand.



Step 10

- Tuck the three strands, as when making the Logger's splice.



Step 11

The Short Long Splice differs slightly from the Logger's splice at this point.

- To tuck strand #1 for the second time, drive the spike in the opposite way, one strand down the line from the third strand tucked.



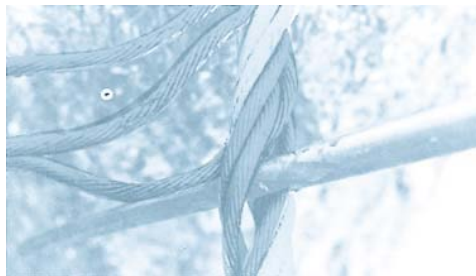
Step 12

- Tuck #1 strand for the second time.
- Pull and roll it up tightly with the spike.



Step 13

- Tuck #1 strand for the third time.



Step 14

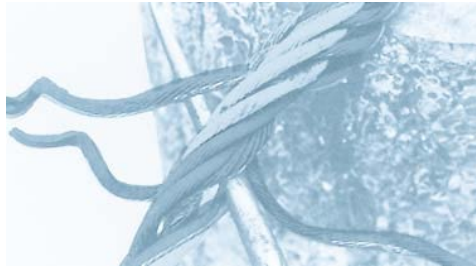
- Tuck #2 strand for the second time.



Note: Do not tuck it one strand away from last tucked strand, as when tucking the first strand for the second time. This instruction only applies to that tuck because only three strands are being tucked.

Step 15

- Pull the #2 strand and roll it around up tightly with the spike.



Step 16

- Tuck #2 strand for the third time.

**Step 17**

- Tuck #3 strand for the second time.

**Step 18**

- Pull the #3 strand through and roll it around, up tight with the spike.

**Step 19**

- Tuck #3 strand for the third time.

The illustration shows the three (red) strands tucked three times.



Step 20

- Remove the splice from the stump.
- Turn the splice around and spike it down again, ready to tuck the other three (blue) strands.
- Drive in the spike as before, under one strand from each section of the line ravelled together.



Step 21

- Tuck the three blue strands three times, the same as for the three red strands.



Step 22

- Remove the splice from the stump.
- Spike down the other join where the core is to be tucked.



Step 23

- Tuck the three (blue) strands and the core.
- Be sure to start with the first tuck under two strands, one from each section of line ravelled together.



Step 24

- Tuck the three (blue) strands and core all through once.



Step 25

- Tuck the #1 strand for the second time.
- Do not skip one strand at this point as you would when tucking only three strands.



Step 26

- Roll the #1 strand around up tight with the spike.



Step 27

- Continue to tuck the three (blue) strands and core three times, as for the Logger's Splice.

The illustration shows three (blue) strands and the core, tucked three times.



Step 28

- Remove the splice from the stump.
- Turn the splice around and spike down the other end.

The last three (red) strands and core remain to be spliced in.



Step 29

- Splice the three (red) strands and core same as the others.



Step 30

- The three (red) strands and core are tucked three times.



The illustration shows two completed short splices with three strands and the core tucked three times.



The illustration shows two completed short splices at the other end of the Short Long Splice, with the three strands only, tucked three times.

The strands should not be cut off too short, as the splice will pull in during use.

An extra tuck (to four full tucks) will generally ensure that a last tuck does not pull through if the line is used for excessive reefing.



Now try the quiz on the next page.

Complete the Short Long Splice in Accordance with the WorkSafeBC Splicing Guide—Self-Quiz

1. Do you cut off the three strands with the core unraveled from:
☐ One end
☐ Both ends
2. These two sets of three strands will be used for tucking. How long is each set?
☐ 3 ft.
☐ 4 ft.
3. How many splices will be tucked?
☐ Three
☐ Four
4. How many strands are under the first tuck?
☐ Two strands
☐ Four strands
5. This splice is used to join two lines of the same diameter and lay.
☐ True
☐ False
6. Is this splice generally used in an emergency or for temporary use in running lines?
☐ Yes
☐ No
7. What is the distance between the finished tucks 8 ft. (2.4 m) for 1¼ in. (32 mm) line?
☐ 6 ft. (1.8m)

☐ 8 ft. (2.4m)



Now check your answers on the next page.

Complete the Short Long Splice in Accordance with the WorkSafeBC Splicing Guide—Quiz Answers

1. Do you cut off the three strands with the core unravelled from:

Answer: **One end**

2. These two sets of three strands will be used for tucking. How long is each set?

Answer: **3 ft.**

3. How many splices will be tucked?

Answer: **Four**

4. How many strands are under the first tuck?

Answer: **Two strands**

5. This splice is used to join two lines of the same diameter and lay.

Answer: **True**

6. Is this splice generally used in an emergency or for temporary use in running lines?

Answer: **Yes**

7. What is the distance between the finished tucks for 1¼ in. (32 mm) line?

Answer: **8 ft. (2.4m)**

Key Point 2.3: Complete the Passing Splice in Accordance with the WorkSafeBC Splicing Guide

Your trainer will demonstrate this procedure. Use these pages as reference. There are nine steps to this procedure.

This splice is a temporary means of joining two lines of the same diameter, construction and lay.

If spliced properly it will withstand as much direct loading as the line itself. However, with continuous reefing, slackening and tightening and running through sheaves, it wears rapidly, tends to stretch and will pull out sooner than an eye splice.

A passing splice will generally wear longer than a line joined with two eye splices and Molly Hogans, as it is not exposed to cutting action.

It is used to join reefing lines, temporary haulback and mainline extensions, and to make temporary fixes for broken running lines.

Its use is not permitted for any guylines, skylines or standing rigging.

When running through sheaves, the loading tends to be taken by one of the splices more than the other. As a result the line often forms a loop on one side of the splice and will pull out rapidly.

The distance between the splices should not be long, as it is difficult to maintain exactly the same tension on each side.

Step 1

- Select lines of the same size, construction and lay.



Step 2

Note: For illustration purposes, this splice is made short. A longer splice can be used but there is no advantage, and it is more difficult to keep

each side equal. For this splice $\frac{7}{8}$ in. (22.2 mm) diameter lines, each 45 in. (114 cm) long, were used.

- Spike the two lines down securely so the line does not turn when rolling the spike.
- Keep about 30 in. (76 cm) ends to tuck with.



Step 3

- Start the splice, keeping the strands pulled in tight, as with other splices.



Step 4

- Complete the splice with three full tucks.

If the splice is to be used for long or is subject to continuous reefing, the strands should be tucked three and a half or four times.



Step 5

- Remove the splice.
- Turn the lines around and spike them down securely.



Step 6

- Splice the other ends.
- Make sure both lines and splices are equally tight.



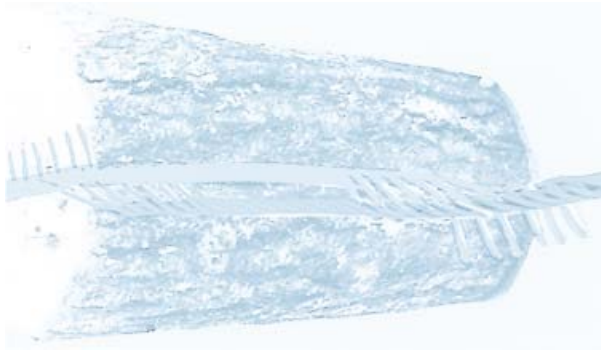
Step 7

- Complete the splice, tucking all strands and the core three times.

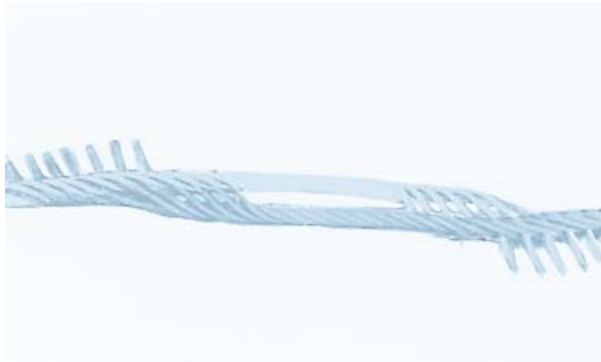


Step 8

- Remove the splice and trim the strand ends fairly long.



The illustration shows the completed splice, tucked three times on both ends.



Now try the quiz on the next page.

Complete the Passing Splice in Accordance with the WorkSafeBC Splicing Guide— Self-Quiz

1. Is the passing splice a permanent means of joining two lines of the same diameter, construction, and lay?
☐ Yes
☐ No
 2. Does the passing splice wear rapidly?
☐ Yes
☐ No
 3. Can you use the passing splice for guylines, skylines or standing rigging?
☐ Yes
☐ No
 4. When running through sheaves, the loading tends to be taken by one of the splices more than the other.
☐ True
☐ False
 5. Should the distance between the splices be long?
☐ Yes
☐ No
-



Now check your answers on the next page.

Complete the Passing Splice in Accordance with the WorkSafeBC Splicing Guide— Quiz Answers

1. Is the passing splice a permanent means of joining two lines of the same diameter, construction, and lay?

Answer: **No**

2. Does the passing splice wear rapidly?

Answer: **Yes**

3. Can you use the passing splice for guylines, skylines or standing rigging?

Answer: **No**

4. When running through sheaves, the loading tends to be taken by one of the splices more than the other.

Answer: **True**

5. Should the distance between the splices be long?

Answer: **No**

Key Point 2.4: Complete the Knotted Strawline Connection Splice in Accordance with the WorksafeBC Splicing Guide

This connection is similar to the Threaded Strawline Connection. It is used on each end of sections of strawlines to form extensions.

The method of tying a knot in the line to secure the hook has been used for years, but is generally being replaced with the Threaded Strawline Connection.

The connection can be made as long or short as wished. However, if it is made too short, it is difficult to wrap the end around to prevent unhooking.

The knot securing the hook is tied one way or the other, depending on whether the open side of the hook is to face in or out on the connection.

When the hook is placed to face in, as shown in the illustrations, it is a little more difficult to wrap the end.

Strawline connections and spliced connectors occasionally come unhooked and are not always reliable when working on long, steep sidehills. Ordinary eye splices joined with Molly Hogans may be used instead of the strawline connectors.

The illustrations show the knotted strawline connection assembled with 3/8 in. (9.5 mm) wire core.

Step 1:

- Select the proper size hook for the line being used.
- Thread the line through the hook before starting the splice.



Step 2:

- Make a loop approximately 54 in. (137 cm) around.
- Keep about 12 to 14 in. (33 cm) of end for tucking.



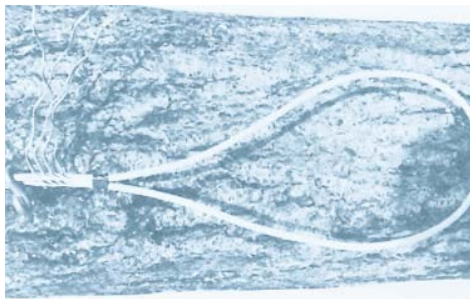
Step 3:

- Tape or tie the lines together to keep the strands tight until they are further tucked.



Step 4:

- Start the splice by tucking four strands as shown.



Step 5:

- Complete the splice, tucking all strands and the core three times.



Step 6:

- Tie an ordinary knot with the hook hanging on the low side, by the eye.

The direction in which the knot must be tied is dictated by the direction in which the hook was put on. For a connection as shown in Step 7, make the knot as shown here.

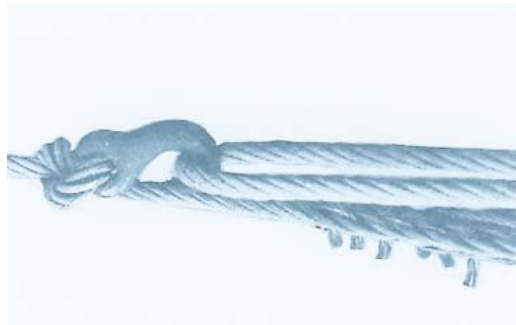


If the connection is to be made with the hook in the open position, the knot must be tied in the opposite direction, as shown here.

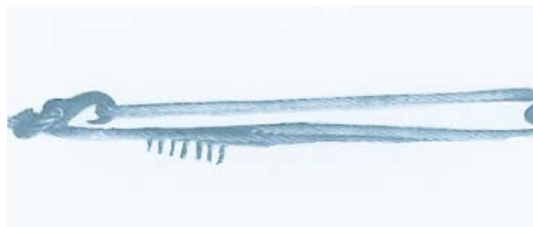


Step 7:

- Before pulling the connection tight, make certain that the knot is a short distance away from the strand ends. The strand ends can interfere with hooking and unhooking if they are too close.



This illustration shows the completed connection, pulled in tight.



Complete the Knotted Strawline Connection Splice in Accordance with the WorkSafeBC Splicing Guide—Self-Quiz

1. This connection is similar to which of the following?
 - ☐ Threaded Strawline Connection
 - ☐ Common Long Splice
 - ☐ Logger's Eye
2. The knot securing the hook is tied in how many ways?
 - ☐ One
 - ☐ Two
 - ☐ Three
3. Is the strawline connection reliable when working on long, steep side hills?
 - ☐ Yes
 - ☐ No
4. Start the splice by tucking how many strands?
 - ☐ Two
 - ☐ Four
5. If the connection to be made with the hook is in the open position, the knot must be tied in which direction?
 - ☐ Same direction
 - ☐ Opposite direction



Now check your answers on the next page.

Complete the Knotted Strawline Connection Splice in Accordance with the WorkSafeBC Splicing Guide—Quiz Answers

1. This connection is similar to which of the following?

Answer: **Threaded Strawline Connection**

2. The knot securing the hook is tied in how many ways?

Answer: **Two**

3. Is the strawline connection reliable when working on long, steep side hills?

Answer: **No**

4. Start the splice by tucking how many strands?

Answer: **Four**

5. If the connection to be made with the hook is in the open position, the knot must be tied in which direction?

Answer: **Opposite direction**

Key Point 2.5: Complete the Strawline Spliced Connector Splice in Accordance with the WorkSafeBC Splicing Guide

The spliced connector is used for connecting strawline eyes together, joining mainlines and haulbacks when threading, and for general light bullcocking purposes.

Spliced connectors made from heavier line and sturdier hooks are sometimes used around skyline operations.

Spliced connectors can be made by splicing two short eyes, like a short strap, with the hook in one eye. In this case, the spliced connector is double at both ends but it is not as strong overall as the method illustrated.

Spliced connectors and strawline extensions easily come unhooked before they are pulled in and formed. They should be kept under strain or laced until they become formed.

Spliced connectors and strawline connectors, even when formed, may occasionally come unhooked. They should not be relied on when working on long steep sidehills. Ordinary eye splices joined with Molly Hogans are preferable on steep sidehills.

Spliced connectors and strawline connectors used for threading high lead sheaves or blocks should be laced even when wrapped, especially if they are not adequately formed.

The illustrations show the spliced connector made with $\frac{3}{8}$ in. (9.5 mm) wire strawline.

Step 1:

This connector is made with $\frac{3}{8}$ in. (9.5 mm) strawline, approximately 10 ft. 6 in. (3.2 m). The length can be varied, depending on the length of spliced connector desired.

- Splice an eye approximately 45 in. (114 cm) around.



Step 2:

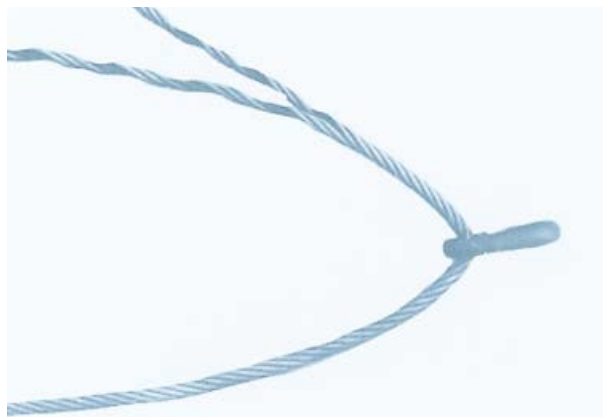
- After measuring and cutting the length of line desired, thread on the hook.
- Lay the spliced eye flat in the position it was when starting and finishing the splice. Thread the hook on so that the closed side of the hook is on the same side of the line as the top side of the splice.
- From the end of the splice already in, measure off about 16 in. (40 cm). Bend the line by hammering it slightly where the hook is, at the point of the eye. The line must be bent in the direction as shown in the illustration.

If the hook is not to be locked in as shown, bend the line in the opposite direction.

Note: The tape is only used for illustration purposes.

**Step 3:**

Split the cut end of the line in two and unravel close to the hook.

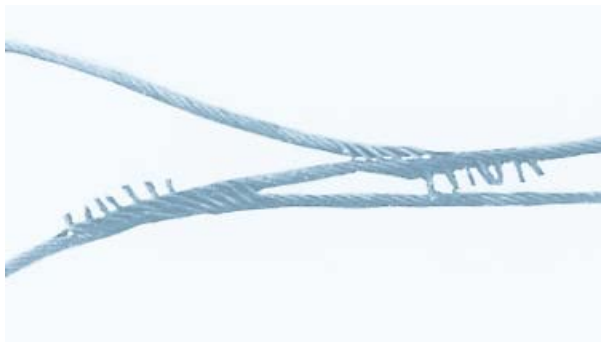
**Step 4:**

- Close the strands over the live part of the line and ravel up to the end.
- Lock the hook to prevent it from sliding down the spliced connector and make it easier to hook up.



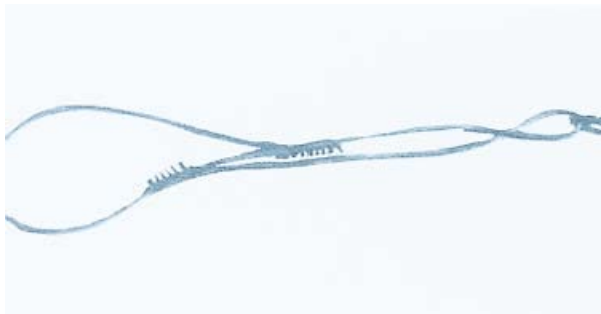
Step 5:

- Keep the original eye flat in the position described in Step 3.
- Splice the now ravelled up end into the live part of the already spliced eye, about 4 in. (10 cm) from the splice. Do not splice into the strand or dead side of the eye.



Step 6:

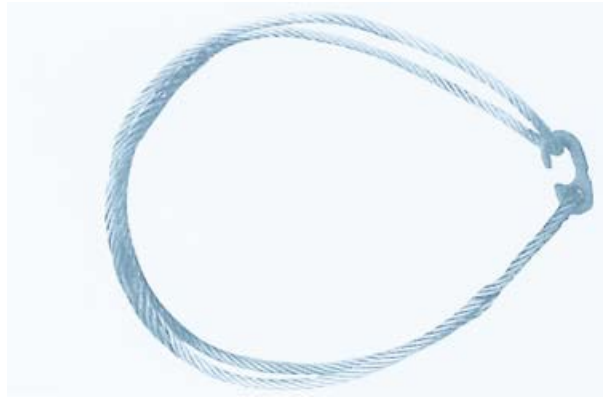
- Trim the strand ends.
- Lay the spliced connector out flat.



Note: Both splices are in their original positions, with the open part of the hook underneath or facing away.

Step 7:

- Hook up the spliced connector which will bend naturally to the illustrated position.



If the open side of the hook is required to be facing out, the spliced connector can be bent backwards against its natural bend and then pulled tight. However, it would be better to reverse the hook in Step 2.



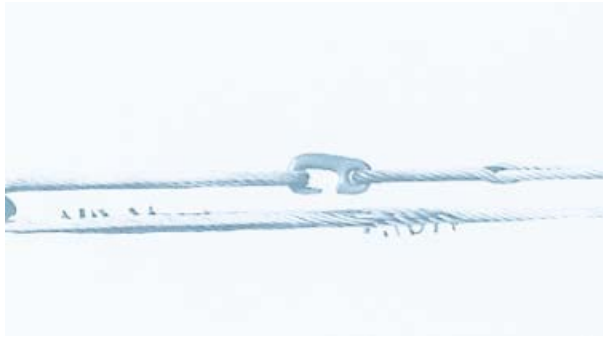
This illustration shows the locked-in hook.



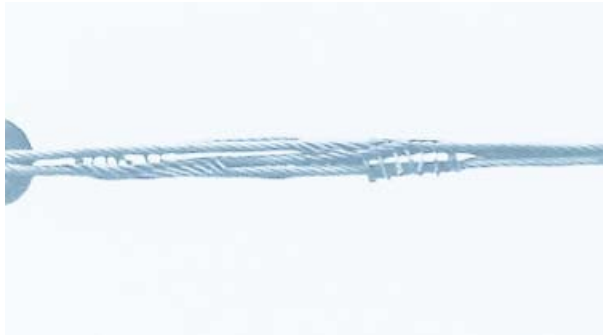
Step 8:

- Using a shackle in each end, pull the spliced connector tight and hammer lightly to form it a little.

Using shackles instead of the eyes of line to pull the spliced connector tight will permit it to even-up better.



This illustration shows the splice at the back side of the spliced connector.



This illustration shows the completed spliced connector tucked three times, locked in hook, and the open part of the hook to the inside of the spliced connector.



Now try the quiz on the next page.

Strawline Spliced Connector Splice—Self-Quiz

1. The spliced connector is used for connecting strawline eyes together.
☐ True
☐ False
 2. They should be kept under strain or laced until they become formed.
☐ True
☐ False
 3. Should spliced connectors used for threading high lead sheaves or blocks be laced?
☐ Yes
☐ No
 4. Thread the hook on so that the closed side of the hook is which side of the line as the top side of the splice?
☐ Same side
☐ Opposite side
 5. Should you splice into the strand or dead side of the eye?
☐ Yes
☐ No
-



Now check your answers on the next page.

Strawline Spliced Connector Splice—Quiz Answers

1. The spliced connector is used for connecting strawline eyes together.

Answer: **True**

2. They should be kept under strain or laced until they become formed.

Answer: **True**

3. Should spliced connectors used for threading high lead sheaves or blocks be laced?

Answer: **Yes**

4. Thread the hook on so that the closed side of the hook is which side of the line as the top side of the splice?

Answer: **Opposite side**

5. Should you splice into the strand or dead side of the eye?

Answer: **No**

Key Point 2.6: Complete the Farmer's Eye Splice in Accordance with the WorkSafeBC Splicing Guide

The Farmer's eye is formed by unraveling the line in two sections and laying the sections together again in a loop.

The farmer's eye is known by several names including:

- Molly Hogan eye
- Flemish eye
- Canadian eye

The Farmer's eye is mainly used in temporary or emergency situations where there will not be any excessive loadings.

Unless sufficient clamps are used, the Farmer's eye is not as strong as a spliced eye.

If the Farmer's eye is yarded backward through the brush it will generally pull apart.

Sometimes the Farmer's eye is formed by dividing the line into two and four strands. However, unless clamps are used, it is better to divide the line three and three.

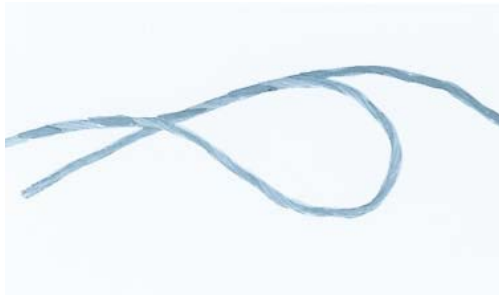
The heavier the line used to make the eye, the larger the loop should be, to make it easier to form the eye.

Step 1:

- Split the line in half, with three strands in one section and three strands plus the core in the other.



- Be sure to unravel enough line to make the size of eye desired, leaving sufficiently long ends to wrap together after the eye is formed.



Step 2:

- Form the loop for the eye from the section with three strands and the core. It is easier to wrap the lighter section around the one with the core.



If making the eye by splitting the line into two strands and four strands plus the core, use the four strands and core to form the loop.

When forming the loop, leave ends long enough to wrap together at least two or three times.

Both ends are wrapped to the bottom and crossed.



Step 3:

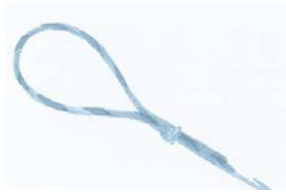
- Cross the two ends over and wrap them together to the end.



The eye is completed with the strands crossed over and wrapped together again.

With two or more clamps attached, depending on the use, the eye will take as much stress as the line.

The eye is not suitable for use where it will be dragged through the brush, because it will be torn apart.



Farmer's eye, with the wrapped ends clamped to the line

Now try the quiz on the next page.

Farmer's Eye—Self-Quiz

1. The Farmer's eye is also known as the Molly Hogan eye.
☐ True
☐ False
2. The Farmer's eye is used for temporary or emergency situations where there will not be any excessive loadings.
☐ True
☐ False
3. You form the loop for the eye from the section with three strands?
☐ True
☐ False
4. If making the eye by splitting the line into two strands and four strands plus the core, which do you use to form the loop?
☐ The two strands
☐ The four strands and core
5. Is the Farmer's eye suitable for use where it will be dragged through the brush?
☐ Yes
☐ No



Now check your answers on the next page.

Farmer's Eye—Quiz Answers

1. The Farmer's eye is also known as the Molly Hogan eye.

Answer: **True**

2. The Farmer's eye is used for temporary or emergency situations where there will not be any excessive loadings.

Answer: **True**

3. You form the loop for the eye from the section with three strands?

Answer: **False**

4. If making the eye by splitting the line into two strands and four strands plus the core, which do you use to form the loop?

Answer: **The four strands and core**

5. Is the Farmer's eye suitable for use where it will be dragged through the brush?

Answer: **No**

Key Point 2.7: Complete the Molly Hogans Connection in Accordance with the WorkSafeBC Splicing Guide

Your trainer will demonstrate this procedure. Use these pages as reference. There are nine steps to this procedure.

A Molly Hogan is a strand of line wrapped around in the lay of the strands a number of times to form a circle. If the strand is wrapped around in a circle sufficiently often, the Molly can be used as a link to join lines and rigging.

A Molly is normally used in an emergency, or temporarily, until proper connecting devices can be obtained. The use of a Molly Hogan on a skyline or standing line is prohibited.

Mollies are used to connect strawlines on steep terrain to prevent the extensions from coming unhooked. A Molly is used on running lines where shackles cannot be run through leads such as on reefing lines, mainline and haulback extensions.

Mollies must be checked often, because they wear rapidly and cut the eye splices that they are joining.

Often on running line extensions, two Mollies are used together to join the eyes. If this is done, they must be of the same diameter, but need not have the six full wraps.

A Molly made properly with six full wraps and either tucked or rolled is a strong connecting link, although it will suffer from rapid wear and cutting.

Step 1:

- To make a proper Molly, get a long strand.

The smallest diameter Molly that should be made with a 7/8 in. (22 mm) line strand requires a strand 15 ft. (4.5 m) long.



To make a full, six-wrap Molly with the ends rolled in will require 20 ft. (6 m) of strand, to allow for trimming.

When the first wrap is made, the circle should have a minimum of five corners.



A larger diameter Molly, with more corners, will require more strand.

Below is the wrong way to wrap a strand when making a Molly.



Step 2:

- Start a Molly from any section of the strand.
- Start the Moll from the middle of the strand to avoid handling the long strand ends.

Here, the Molly is started at one end with the bight of the strand pushed through when wrapping.

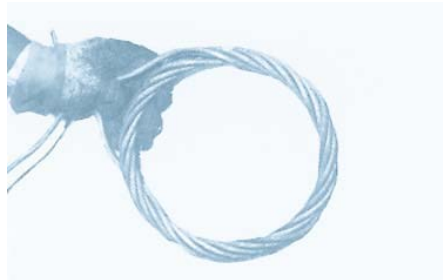


Here's a Molly with five full wraps.



With five wraps, the Molly is full and there appears to be no lay for another wrap.

The sixth wrap is laid over the closed five wraps and appears to lay on the top.



Step 3:

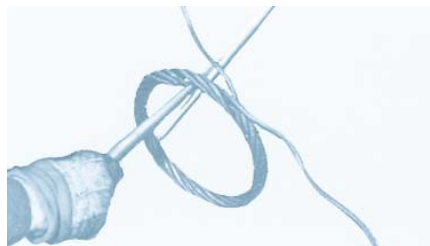
- Hammer the sixth wrap around the marlin spike to lay it in.

The Molly now has six full wraps. The strands should be crossed at every wrap.



Step 4:

- Cross the strands to roll the ends in.
- Push the spike through the centre of the Molly, with the point coming out where the strand is to be rolled in.
- Each strand must cross over the other at the start of rolling in.

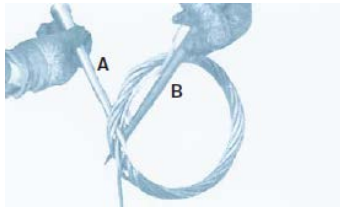


Step 5:

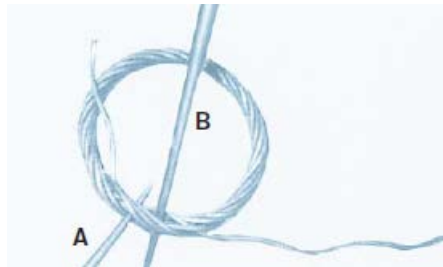
- Push spike B through the same place as spike A but from the other direction.

**Step 6:**

- Place the strand to roll in between the spikes.
- Cross the point of spike A over spike B and force the strand into the centre of the Molly.

**Step 7:**

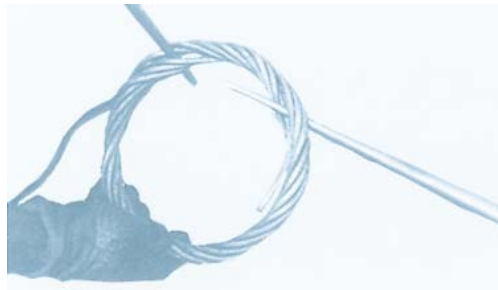
- Bring spike A back, keeping it tight against the strand, and roll the strand inside the Molly.

**Step 8:**

- Roll the strand to the end, being careful not to fray the strand end.

The spike cannot be rolled all the way around because of the circled Molly.

- Use a short spike and push it in and out to roll the strand in.



Step 9:

- Bend the two strands around. Trim the ends so that they will not touch when they are rolled in.
- Roll in the other strand in the same way.
- Be sure that the strand is crossed over the first strand to be rolled in.



The strands are crossed over each other, then rolled in.



This illustration shows the completed Molly, with six full wraps, the rolled in strands crossed and with no ends protruding.



Note: The Molly shown has been made small for illustration purposes. It is much easier to make a larger Molly, starting with a longer strand and making a bigger circle.

Complete the Molly Hogans Connection in Accordance with the WorkSafeBC Splicing Guide—Self-Quiz

1. If the strand is wrapped around in a circle sufficiently often, can the Molly be used as a link to join lines and rigging?
☐ Yes
☐ No
2. Is a Molly used for temporary or permanent connection?
☐ Temporary
☐ Permanent
3. Can you use a Molly Hogan on a skyline or standing line?
☐ Yes
☐ No
4. Can you use mollies to connect strawlines on steep terrain to prevent the extensions from coming unhooked?
☐ Yes
☐ No
5. If two Mollies are used together to join the eyes, is it necessary that they be of the same diameter?
☐ Yes
☐ No
6. In the above case, do they need to have the six full wraps?
☐ Yes
☐ No



Now check your answers on the next page.

Complete the Molly Hogans Connection in Accordance with the WorkSafeBC Splicing Guide—Quiz Answers

1. If the strand is wrapped around in a circle sufficiently often, can the Molly be used as a link to join lines and rigging?

Answer: **Yes**

2. Is a Molly used for temporary or permanent connection?

Answer: **Temporary**

3. Can you use a Molly Hogan on a skyline or standing line?

Answer: **No**

4. Can you use Mollies to connect strawlines on steep terrain to prevent the extensions from coming unhooked?

Answer: **Yes**

5. If two Mollies are used together to join the eyes, is it necessary that they be of the same diameter?

Answer: **Yes**

6. In the above case, do they need to have the six full wraps?

Answer: **No**

Key Point 2.8: Complete the Molly Hogan for Securing Pins in Accordance with the WorkSafeBC Splicing Guide

Your trainer will demonstrate this procedure. Use these pages as reference. There are two steps to this procedure.

Molly Hogans can be used in place of cotter pins or bolts to retain shackle and block pins. An advantage is that tools are not required to attach or remove the Mollies.

When using Molly Hogans, be sure the strand is long enough and it is large enough to fill the hole in the pin. It should be slightly smaller than the pinhole, so it can be pulled through easily.

Be sure that the Molly is wrapped correctly and in the right direction.

Be sure that the Molly is wrapped sufficiently to prevent it from pulling out if it is caught on brush or knots.

Step 1:

- Use a strand large enough in diameter to fill the hole in the pin.
- Make the Molly small, normally with four corners.
- Wrap the strand at least two full circles before threading through the pin.



Step 2

- Pull the strand up tightly after threading it through the pin.
- Wrap the strand at least one and a half circles after threading it through the pin.

This will keep the Molly from pulling out if it gets hung up.

As a guide for the person who has to unravel the Molly after use, leave the end that has been threaded through the pin longer than the other end.



Now try the quiz on the next page.

Complete the Molly Hogan for Securing Pins in Accordance with the WorkSafeBC Splicing Guide—Self-Quiz

1. Can Molly Hogans be used in place of cotter pins or bolts to retain shackle and block pins?
☐ Yes
☐ No
 2. In this case, are tools required to attach or remove the Mollies?
☐ Yes
☐ No
 3. How many corners does the Molly usually have?
☐ Three
☐ Four
 4. As a guide for the person who has to unravel the Molly after use, leave the end that has been threaded through the pin shorter or longer than the other end?
☐ Shorter
☐ Longer
-



Now check your answers on the next page.

Complete the Molly Hogan for Securing Pins in Accordance with the WorkSafeBC Splicing Guide—Quiz Answers

1. Can Molly Hogans be used in place of cotter pins or bolts to retain shackle and block pins?

Answer: **Yes**

2. In this case, are tools required to attach or remove the Mollies?

Answer: **No**

3. How many corners does the Molly usually have?

Answer: **Four**

4. As a guide for the person who has to unravel the Molly after use, leave the end that has been threaded through the pin shorter or longer than the other end?

Answer: **Longer**

Section 1032-03: Knots and Threading

What you need to know about this section

By the end of this section, you will be able to demonstrate your ability to perform the following key points:

3.1 Complete the general purpose knot in accordance with the WorkSafeBC Splicing Guide

3.2 Complete the cat's paw knot in accordance with the WorkSafeBC Splicing Guide

3.3 Complete the double cat's paw in accordance with the WorkSafeBC Splicing Guide

3.4 Join two straps by threading in accordance with the WorkSafeBC Splicing Guide

Key Point 3.1: Complete the General Purpose Knot in Accordance with the WorkSafeBC Splicing Guide

General purpose knot

Your trainer will demonstrate this procedure; use these pages as reference. There are two steps to this procedure.

This knot is used to form an eye that will not pull up tight. It is used for emergency lashing or a quick strawline fix. It may also be used to attach tag line on grapple for a line loader.

Step 1

- Tie a single knot in the line and thread the dead end through the shackle, etc.
- Thread the end through the loop of the knot.
- Be sure that the line is threaded the right way to wrap the loop.
- Wrap the end again by threading it through the loop for the second time.



Step 2

- Thread the end through the loop once more, wrapping it again.

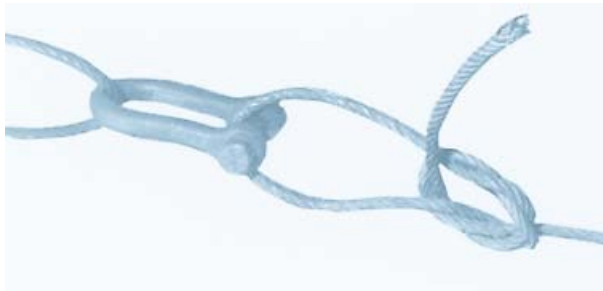
This will pull tight, leaving a loop like an eye that can be removed from the shackle or whatever is used.



When the end is threaded and wrapped three times around the first loop, it is not necessary to hold the end when it is pulled tightly.



- Be sure to leave enough end to prevent it from slipping through.



Now try the quiz on the next page.

Complete the General Purpose Knot in Accordance with the WorkSafeBC Splicing Guide—Self-Quiz

1. This knot is used to form an eye that will pull up tight.

- ☐ True
- ☐ False

2. Can this be used for a quick strawline fix?

- ☐ Yes
- ☐ No



Now check your answers on the next page.

Complete the General Purpose Knot in Accordance with the WorkSafeBC Splicing Guide—Quiz Answers

1. This knot is used to form an eye that will pull up tight.

Answer: **False**

2. Can this be used for a quick strawline fix?

Answer: **Yes**

Key Point 3.2: Complete the Cat's Paw Knot in Accordance with the WorkSafeBC Splicing Guide

Your trainer will demonstrate this procedure.

The cat's paw knot is used for lashing or temporary joining of lines. It can be a quick temporary fix for broken strawline and is used on rigger's rope.

A cat's paw knot can generally be removed after use.

The knot can be used on an eye as a loop. Whether used as an eye or a loop, the knot should be flattened and the end held until it is pulled tight.



Now try the quiz on the next page.

Complete the Cat's Paw Knot in Accordance with the WorkSafeBC Splicing Guide— Self-Quiz

1. Can the cat's paw knot be used for lashing?

☐ Yes

☐ No

2. Can it be a used as a temporary fix for broken strawline?

☐ Yes

☐ No

3. Should the knot be flattened and the end held until it is pulled tight?

☐ Yes

☐ No



Now check your answers on the next page.

Complete the Cat's Paw Knot in Accordance with the WorkSafeBC Splicing Guide— Quiz Answers

1. Can the cat's paw knot be used for lashing?

Answer: **Yes**

2. Can it be used as a temporary fix for broken strawline?

Answer: **Yes**

3. Should the knot be flattened and the end held until it is pulled tight?

Answer: **Yes**

Key Point 3.3: Complete the Double Cat's Paw in Accordance with the WorkSafeBC Splicing Guide

Your trainer will demonstrate this procedure.

This variation is used when there is a concern that a single knot may come apart. It is made like the single knot but with the end wrapped around and put through again.

As with the cat's paw knot, the end should be held until the knot is tightened.

The double cat's paw knot is more difficult than the single knot to take apart once it has been pulled tight and used for a while.



Now try the quiz on the next page.

Complete the Double Cat's Paw in Accordance with the WorkSafeBC Splicing Guide—Self-Quiz

1. Can you use the double cat's paw knot when there is a concern that a single knot may come apart?
☐ Yes
☐ No
 2. Does the end need to be held until the knot is tightened?
☐ Yes
☐ No
-



Now check your answers on the next page.

Complete the Double Cat's Paw in Accordance with the WorkSafeBC Splicing Guide— Quiz Answers

1. Can you use the double cat's paw knot when there is a concern that a single knot may come apart?

Answer: **Yes**

2. Does the end need to be held until the knot is tightened?

Answer: **Yes**

Key Point 3.4: Join Two Straps by Threading in Accordance with the WorkSafeBC Splicing Guide

Your trainer will demonstrate this procedure.

The method of joining two straps by threading is used in an emergency situation when a proper shackle is not available. Although this knot is recognized by WorkSafeBC as acceptable, it will deform the eyes of both straps.

The method is also used when joining lines for lashing purposes.

The join is not permitted for any permanent application or standing assembly.

Step 1

- Using the largest eyes of the straps, thread the eye of one strap (red) over the eye of the other strap (blue).



Step 2

- Slide the eye of the red strap well along the blue strap.
- Take the other eye of the red strap and thread it through the eye of the blue strap.
- Pull the straps tight.



Now try the quiz on the next page.

Join Two Straps by Threading in Accordance with the WorkSafeBC Splicing Guide— Self-Quiz

1. This method is used in an emergency situation when a proper shackle is not available.
☐ True
☐ False
 2. Can you use this method for any permanent application or standing assembly?
☐ Yes
☐ No
-



Now check your answers on the next page.

Join Two Straps by Threading in Accordance with the WorkSafeBC Splicing Guide— Quiz Answers

1. This method is used in an emergency situation when a proper shackle is not available.

Answer: **True**

2. Can you use this method for any permanent application or standing assembly?

Answer: **No**

Section 1032-04: File Spikes

What you need to know about this section

By the end of this section, you will be able to demonstrate your ability in the following key point:

4.1 File a marlin spike

Key Point 4.1: File a Marlin Spike

Your trainer will demonstrate this procedure.

You can use a power saw to file a marlin spike. The file is usually about $\frac{1}{2}$ - $\frac{3}{4}$ inches wide by 5 – 6 inches long. However, because you're filing High-Carbon strength steel (spikes), it's best to use a manual file with a handle on it of about 10 inches long.

You need to file the spike to a narrow tip, as it has to slip through strands on cables but not to a sharp point. Hence, after filing, you should take the file and blunt the tip slightly, to $\frac{1}{32}$ inch (just under 0.5 mm). This will still allow the spike to go in between the strands, but not snag the individual fibers.

The picture below shows two views of filed marlin spikes beside each other. It shows how the spike should be narrow but slightly blunted.



Splicing is not done by using brute force, it is a delicate action. When a worker hammers and forces the spike, it will pick up core, which means more work inserting another spike in the correct place.

Splicing takes practice and teamwork when dealing with big lines (over 1" in diameter), old lines, or swedged lines (have been run through a swedging machine to round and decrease the diameter). A swedged line has square-edged strands and they don't pull through easy.

Now try the quiz on the next page.

File a Marlin Spike—Self-Quiz

1. Which is better for filing a marlin spike?

- ☐ Power saw with 6 inch file
- ☐ Manual 10 inch file with handle

2. Should you file the spike to a sharp point?

- ☐ Yes
- ☐ No



Now check your answers on the next page.

File a Marlin Spike—Quiz Answers

1. Which is better for filing a marlin spike?

Answer: **Manual 10 inch file with handle**

2. Should you file the spike to a sharp point?

Answer: **No**