Unit	1026
Title	Apply Hook Tender Skills
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Feedback is welcome and may be sent to training@bcforestsafe.org.

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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 your knowledge of:

- How to prepare for work
- Communication
- Safety responsibilities of a hook tender
- Job responsibilities of a hook tender
- Supervision, training, and leadership

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?

To take this unit, you need to have completed the following units:

- 1002 – Describe Forest Industry
- 1003 – Use Safe Work Practices
- 1004 – Communication in the Workplace
- 1005 – Recognize, Evaluate, and Control Hazards Related to General Forestry
- 1006 – Describe Workplace Documentation
- 1007 – Describe Emergency Preparedness
- 1008 – Describe and Apply Workplace Attributes
- 1009 – Recognize, Evaluate, and Control Hazards Related to Yarding
- 1010 – Describe Basic Regulations and Standards
- 1011 – Describe and Access Intermediate Regulations and Standards
- 1012 – Describe, Access, and Apply Advanced Regulations and Standards
- 1013 – Describe Rigging Components and Apply Basic Rigging Practices
- 1014 – Describe and Apply Advanced Rigging Practices
- 1015 – Plan Block for Yarding
- 1016 – Plan and Manage Day to Day Yarding Activities

Does this unit apply to you?

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

- Hook tender

Section 1026-01: Prepare for Work

What you need to know about this section

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

1.1 Arrive at work prepared, on time, with all personal protective equipment (PPE) required and in working order

1.2 Pre-work meetings

1.3 Safe zone and hazard zones relevant to the block

1.4 Hazards, and safe methods of walking in the bush

Key Point 1.1: Arrive at Work Prepared, on Time, with All PPE Required and in Working Order

An important part of being prepared for work is arriving well rested and not impaired by fatigue, illness, drugs, or alcohol or by stress or emotional upset. Logging often requires waking up early to travel to the worksite and long days with physically demanding work. Being physically and mentally fit is necessary to be productive and safe on the job.

Before commencing work in proximity to other departments, a pre-work plan must be conducted by the hook tender or his supervisor with all crews to identify the potential hazards and discuss the work plan.

Personal protective equipment

Workers must wear the following personal protective equipment and clothing:

- Suitable clothing for protection against the natural elements and the hazards of the work
- Clothing that fits fairly close to the body and allows the worker to move freely
- High-visibility headgear in red or orange for all yarding and loading crews
- High-visibility apparel for workers exposed to mobile equipment
- Caulk-soled boots for all workers required to walk logs
- Hand protection
- Leg protective devices of a standard acceptable to WorkSafeBC for workers operating a power chain saw
- Eye protection, when there is a hazard of eye injury for workers cutting cable, operating a chain saw, or moving through heavy brush
- Hearing protection for workers exposed to noise levels in excess of permissible limits

High visibility clothing

The Occupational Health & Safety Regulation (OHSR) contains the following specific requirements for high visibility clothing for loggers that are applicable to a chokerperson:

1. Highly visible outer clothing that meets the requirements of Part 8 must be worn by a worker in a forestry operation if:

    - Worker may be endangered by any moving equipment or line
    - Worker's location must be routinely checked
    - Worker is involved in harvesting trees at night

2. Safety headgear worn by a worker in a forestry operation must be a high visibility colour that contrasts with the background against which the worker is working.

Now try the self-quiz on the next page.

Arrive at Work Prepared, On Time, with All PPE Required and in Working Order—Self-Quiz

1. What colors are acceptable for high-visibility headgear?
   - ☐ Yellow or orange
   - ☐ Orange or red
   - ☐ Red or yellow
2. PPE includes which of these additional items:
   - ☐ High-visibility apparel
   - ☐ Hand protection
   - ☐ Caulk-soled boots
   - ☐ All of the above
3. If you are operating a chainsaw, what else do you need?
   - ☐ Leg protection
   - ☐ Eye protection
   - ☐ Ear protection
   - ☐ All of the above

Now check your answers on the next page.

Arrive at Work Prepared, On Time, with All PPE Required and in Working Order—Quiz Answers

1. What colors are acceptable for high-visibility headgear?
   Answer: **Orange or red**
2. PPE includes which of these additional items:
   Answer: **All of the above**
3. If you are operating a chainsaw, what else do you need?
   Answer: **All of the above**

Key Point 1.2: Pre-work Meetings

The Occupational Health and Safety Regulations (OHSR) contain requirements for pre-work meetings.

It defines “new work location” as a work location or block in a forestry operation where the crew of workers has not previously worked.

Before a crew of workers starts work in a new work location, a crew safety meeting must be held by the hook tender or his supervisor to inform the workers of any known or reasonably foreseeable risks in that location and the actions to be taken to eliminate or minimize those risks.

If a worker did not attend the crew safety meeting under subsection (2) of the regulation for a new work location, before starting work in that location, the worker must receive a safety orientation that covers any known or reasonably foreseeable risks in that location and the actions taken to eliminate or minimize those risks.

Records must be kept of the crew safety meetings and safety orientations provided under subsections (2) and (3).

The pre-work meeting can be part of a Workplace Safety Plan. A sample of this document appears on the following pages. Read through each of the forms included in the the plan so that you are familiar with the content.

The hook tender files the Workplace Safety Plan with the company doing the work, and keeps a copy on site.

It is paramount that everyone attending the meeting sign the document, so that a record of the meeting is kept on file with those signatures.

See the Work Safety Plan template in the resources section of this unit.

1026 - Apply Hook Tender Skills

What you will learn in this unit

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

- How to prepare for work
- Communication
- Safety responsibilities of a hook tender
- Job responsibilities of a hook tender
- Supervision, training, and leadership

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?

To take this unit, you need to have completed the following units:

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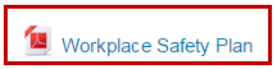
- 1012 – Describe, Access, and Apply Advanced Regulations and Standards
- 1013 – Describe Rigging Components and Apply Basic Rigging Practices
- 1014 – Describe and Apply Advanced Rigging Practices
- 1015 – Plan Block for Yarding
- 1016 – Plan and Manage Day to Day Yarding Activities

Does this unit apply to you?

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

- Hook tender



Now complete the self-quiz on the next page.

Pre-work Meetings—Self-Quiz

1. For a new work location, crews must attend a pre-work crew safety meeting before any work begins.

   ☐ True

   ☐ False

2. The purpose of the meeting is to inform the crew of:

   ☐ Known risks

   ☐ Foreseeable risks

   ☐ Action to be taken to minimize or eliminate those risks

   ☐ All of the above

3. If a worker was absent for that meeting, does the worker need a safety orientation before starting work at that new work location?

   ☐ No

   ☐ Yes

4. Do we need to keep records of crew safety meetings and safety orientations?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Pre-work Meetings—Quiz Answers

1. For a new work location, crews must attend a pre-work crew safety meeting before any work begins.

   Answer: **True**

2. The purpose of the meeting is to inform the crew of:

   Answer: **All of the above**

3. If a worker was absent for that meeting, does he need a safety orientation before he starts work at that new work location?

   Answer: **Yes**

4. Do we need to keep records of crew safety meetings and safety orientations?

   Answer: **Yes**

Key Point 1.3: Safe Zone and Hazard Zones Relevant to the Block

Hazard area of logging equipment

A hazard area created by the operation of logging equipment must be identified.

Every hazard area identified under Part 8, subsection (1) of the OHSR must be communicated to all workers in close proximity to the operating logging equipment and to the hazard area.

A worker must not enter into or proceed on foot through a hazard area referred to in subsection (1) unless the equipment operator first gives permission to the worker in a clear and unmistakable manner.

Designated safe work area

A safe work area must be designated for workers on foot in close proximity to any operating logging equipment.

The boundaries of a safe work area designated under subsection (1) must be communicated to all workers within and in close proximity to the safe work area.

No equipment may enter into or proceed through a safe work area unless:

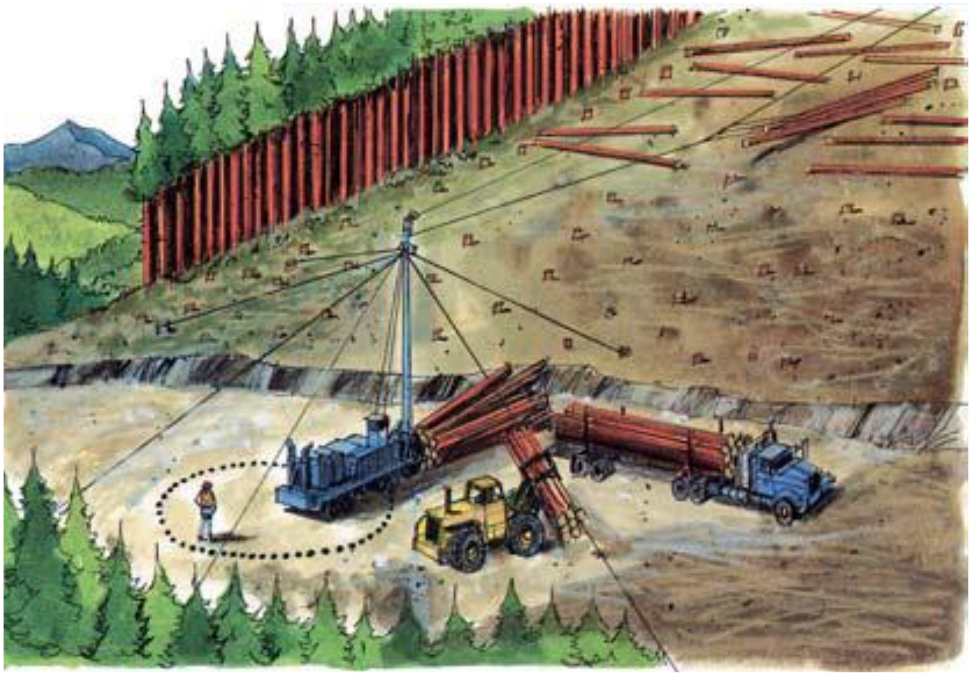
- The equipment operator first obtains permission in a clear and unmistakable manner from all of the workers in that safe work area or from the supervisor of those workers
- Those workers take a safe position

At the same time, permission is also required for workers leaving their designated safe zones. Get permission from the operators and maintain eye contact.

Landing safe area (In the clear)

Remember these points when working in a landing:

- Do not stand underneath or close by the mainline during yarding
- Stand clear of the incoming turn. Remember, logs could jillpoke, upend, or strike logs already in the landing
- Do not stand beneath the guylines opposing the pull of the turn. The guyline could break or the stump may slab
- Do not stand in the bight formed by the running yarding lines
- All landing workers must use designated safe positions, outside the work circle and visible to the machine operators



In the clear

Now try the quiz on the next page.

Safe Zone and Hazard Zones Relevant to the Block—Self-Quiz

1. Every hazard area identified must be communicated to all workers:

   ☐ In close range of logging equipment

   ☐ In close range of hazard area

   ☐ Both

2. To enter a hazard area, a worker must have permission from the equipment operator.

   ☐ True

   ☐ False

3. Boundaries of a safe work area must be communicated to workers:

   ☐ Within the safe work area

   ☐ In close proximity to safe work area

   ☐ Both

4. When working in a landing, can you stand underneath or close by the mainline during yarding?

   ☐ Yes

   ☐ No

5. Can you stand beneath the guylines opposing the pull of the turn?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Safe Zone and Hazard Zones Relevant to the Block—Quiz Answers

1. Every hazard area identified must be communicated to all workers:

   Answer: **Both**

2. To enter a hazard area, a worker must have permission from the equipment operator.

   Answer: **True**

3. Boundaries of a safe work area must be communicated to workers:

   Answer: **Both**

4. When working in a landing, can you stand underneath or close by the mainline during yarding?

   Answer: **No**

5. Can you stand beneath the guylines opposing the pull of the turn?

   Answer: **No**

Key Point 1.4: Hazards and Safe Methods of Walking in the Bush

Slips, trips and falls injury prevention

Ultimately, your company may strive to reduce all injury types. But when it comes to creating sustainable change and reducing injuries across the operations, it can help to start small and specific with the change and expand the effort as you see progress.

You may find the first aid records for your crew show multiple sprains happening from jumping off a slash pile, a few bruises and cuts from falling down and a tweaked knee from tripping over gear left on the landing. It is up to you to decide where to start in tackling slips, trips, and fall injuries. You may decide that reducing or eliminating the multiple lost time incidents around the sprains represent the best value for your effort or it might make the most sense to focus on reducing or eliminating the more “expensive” (in terms of claims costs, downtime and worker injury) incident of tripping.

Starting small and demonstrating improvements to yourself and your team helps to build momentum in making further changes.

Additional resources

Below are links to additional resources:

- Injury Prevention Resource Order Form
- Slips, Trips & Falls Injury Prevention Resource Package
- Slips, Trips & Falls Injury Prevention Webinar - Recording

Before going to the field:

- Strive to keep active and stay healthy when away from work
- Stretch and loosen up when you arrive at work before you start the day
- Ensure you have adequate clothing, footwear, and appropriate PPE for the tasks you will be performing and the weather outside
- Ensure you have an adequate food and water supply for the day
- Always make sure that you follow the applicable check-in procedures

When you get to the worksite:

- Ensure you know the designated muster point in the area where you are working
- Be aware of potential eye hazards at all times when walking through the timber

- When walking with co-workers maintain approximately three meters distance between each other
- Avoid jumping off of obstacles
- Be careful around blowdown trees. They may be under tension and unstable in their current position
- When walking on logs watch your footing as logs may roll, be rotten or have loose bark
- Be cautious with your footing when walking or climbing on bare rock
- Always be aware of your surroundings and the potential for wild animal encounters
- Do not sit or walk below fresh cut slopes as banks or rocks may come loose
- On rainy or snowy days, be aware of slippery ground
- In icy conditions, avoid walking on felled logs and in windfall areas

Working in areas with unstable slopes:

- Look for hazards prior to walking in an area with potentially unstable slopes
- Be on the alert for unstable debris, rocks, and logs that may become dislodged
- Be on the alert for unstable ground that may have been impacted by equipment
- Be aware of where you step; if you are unsure find an alternate route
- Be aware of fellow co-workers working downhill from you
- Avoid working in areas at risk of a large landslide (such as steep slopes with
- large, fresh earth cracks or recent landslides/slumps) and report the area to your supervisor

Working on steep slopes:

- Try to maintain three points of contact with the ground when moving across steep slopes
- Where possible keep 1 hand free to grab onto secure objects
- Do not work above or below another worker
- Avoid going below slash accumulations and boulders that may become dislodged
- Move slowly across the hillside if possible. Never jump off of obstacles
- If traction is poor (such as wet, frosty etc.) work on an alternative site if possible
- Avoid walking on slash, boulders, and talus

Walking on down trees at height:

- Employees are to avoid this practice
- Use an alternate route that allows you to stay on the ground

Walking along rock bluffs or excavations:

- Stay back at least 2 meters from the edge or drop-off
- Never take steps or walk backwards towards the edge
- Avoid slippery or unstable surfaces adjacent to the edge

Walking across streams:

- Assess the stream for hazards before crossing. Do not cross if you are unsure or you feel the crossing is unsafe
- Be aware of changing weather conditions as the water may rise during the day. Make sure you are going to be able to return at the end of the day

Now try the self-quiz on the next page.

Hazards and Safe Methods of Walking in the Bush—Self-Quiz

1. When walking with co-workers, how far should you maintain between each other?

   - ☐ 2 meters
   - ☐ 3 meters
   - ☐ 4 meters

2. Can you sit or walk below fresh cut slopes?

   - ☐ Yes
   - ☐ No

3. When working on steep slopes, try to maintain 3 points of contact with the ground.

   - ☐ True
   - ☐ False

4. Employees should avoid the practice of walking on down trees at height.

   - ☐ True
   - ☐ False

5. When walking along rock bluffs or excavations, how many meters at least should you stay back from the edge or drop-off?

   - ☐ 1 meter
   - ☐ 2 meters
   - ☐ 3 meters

6. When crossing streams, do you need to consider water rise over the course of your absence before your return trip?

   - ☐ Yes
   - ☐ No

Now check your answers on the next page.

Hazards and Safe Methods of Walking in the Bush—Quiz Answers

1. When walking with co-workers, how far should you maintain between each other?

   Answer: **3 meters**

2. Can you sit or walk below fresh cut slopes?

   Answer: **No**

3. When working on steep slopes, you should try to maintain three points of contact with the ground.

   Answer: **True**

4. Employees should avoid the practice of walking on down trees at height.

   Answer: **True**

5. When walking along rock bluffs or excavations, how many meters at least should you stay back from the edge or drop-off?

   Answer: **2 meters**

6. When crossing streams, do you need to consider water rise over the course of your absence before your return trip?

   Answer: **Yes**

Section 1026-02: Communication

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 Use signals required for the job

2.2 Communicate hazards back to the crew so that message is received and understood

2.3 Communicate with crew in accordance with job requirements throughout the day

Key Point 2.1: Use Signals Required for the Job

Logging signals

There are two acceptable means of controlling the movement of lines on cable yarding systems other than hand signals. They are the use of very high frequency (VHF) radio whistle signaling devices and ultra-high frequency (UHF) voice radio.

Very high frequency (VHF)

Very high frequency (VHF) radio whistle signaling devices are radio transmitters, usually worn around the waist, that activate a whistle on the yarder when a button is pushed. Each required movement of the line has a specific audible whistle signal, which is the same on every yarding site in the province. The unique combinations of short and long whistles ensure controlled movement of yarding lines at all times.

Ultra-high frequency (UHF)

Ultra-high frequency (UHF) voice radio is another means of communicating line movement. A worker tells the operator what line movement is required. The worker directing line movement must use WorkSafeBC-approved verbal commands, which describe the VHF radio whistle signals.

When a voice radio is used, any worker who may be affected by the line movement must be able to hear the verbal command. If the worker cannot hear the command, radio whistles must be used.

To meet this requirement, there are three alternatives:

- All workers are equipped with radios
- An amplifying speaker is mounted on the outside of the yarder. The speaker clearly broadcasts each verbal command
- The operator repeats each verbal command with a radio whistle signal

VHF radio whistles and UHF skyline yarder radio equipment

To ensure that radio equipment used to replace hand signals provides reliable, non-ambiguous, uninterrupted signals, the radio equipment must meet the current WorkSafeBC requirements.

WorkSafeBC officers inspecting workplaces where cable yarders are used will ensure the following:

1. All necessary documentation is available at the workplace, either in an office located on the workplace or in the cable yarder, including:

    - Industry Canada radio license for the current year. Licenses expire on April 1 of each year.

    If this documentation is not available or is out of date, the officer will issue an order requiring the frequency to be licensed and coordinated. Transmitters must be removed from service until they are licensed and coordinated.

2. Radio signaling devices, either hand-held transmitters or equipment-mounted radios used in logging operations, must be clearly marked with the following:

    - Name of the manufacturer
    - Serial number
    - Assigned operating frequency
    - Specified tone frequency

3. Radio signaling devices must have the following:

    - Power limits of ¼ watt for grapple yarder radios
    - Power limits of ½ watt for high-lead radio whistles
    - Permanently enabled tone-encoded squelch

Note: There must only be one frequency per radio. Where multi-channel radios are used, the selection switch must be disabled so that only an authorized person can change the operating frequency.

Interference on radio frequencies

Radio signals replace audible signals for the movement of equipment in logging. Interference by other radios on the same frequency can seriously endanger workers.

Standard audible signals

The audible whistle signals listed below are currently in use in B.C. In addition, carriage operators often use verbal signals with large machines.

Verbal signals are derived from the following whistle signals:

Audible high-lead signals

Operational signals		
Start work	1 long	—
Stop any movement	1 short	•
Ahead* on mainline	3 short	• • •
Slack the mainline	5 short (minimum)	• • • • •
Ahead* on the haulback	2 short, 2 short	• • • •

Slack the haulback	2 short, several short	• • • • • •
Tightline	3 short, 2 short	• • • • •
Tightline on inhaul	3 short, 2 short	• • • • •
Cancel tightline on inhaul	3 short	• • •
Ahead* on Strawline	3 short, 1 short	• • • •
Slack the strawline	3 short, 1 short, several short	• • • • • • • • •
Pick up the guyline	2 short, 2 short, 2 short, 1 short	• • • • • • • •
Slack the guyline	2 short, 2 short, 2 short	• • • • • •
Extreme hazard present (runaway log, etc.)	1 long, sustained until hazard has stopped or hazard cleared	_____
Accident	7 long	— — — — — — —
Fire	1 long, several short, repeated	— • • • •

*“Ahead” means haulage line moves toward machine

Audible high-lead signals

When butt rigging is at the landing		
Check the rigging	5 short (minimum)	• • • • •
Send out strawline extension	3 short, 1 short, and 1 short for each extension	• • • • • •
Send out strawline in the haulback eye	3 short, 1 long	• • • —
Chokers required	2 short and 1 short or long for each choker required	• • • • •
Put on/take off scab block	1 long	—
Calling foreman	4 long	— — — —
Calling hooktender	3 long	— — —
Calling hooktender and crew	3 long, several short	— — — • • • •
Calling for water bag	1 short, 1 long	• —
Calling for block and strap	1 long, 1 short	— •
• Any regular signal preceded by a long signal is a “slow” signal. • Any signal that the engineer is not sure of is a “stop”		

signal.

Audible slackline signals

Refer to the standard high-lead whistle signals for most line control signals. The following are additional whistle signals to be used for slackline operations.

Operational signals		
Stop outhaul and slack skyline	1 short	•
Pick up the skyline	1 short, 2 short	• • •
Slack the skyline	5 short	• • • • •
Pick up skyline on inhaul to clear obstruction	2 short	• •
Pick up skidding line after obstruction is cleared	3 short	• • •
Slack the skidding line	3 short, several short	• • • • • • • •
Carriage on outhaul		
“Slack skidding line” signal given as “skyline is slacked” means “slack both lines at the same time.”		
Hold skidding line tight, keep coming back until stop signal is given	3 short	• • •
Hold skidding line tight, slack skyline, keep coming	2 short	• •
Slack skyline faster	2 short	• •
When carriage is at head spar		
Send strawline out in choker bell for a dead line	3 short, 1 short, 2 short, 2 short	• • • • • • • • • •
Send out that many coils	3 short, 1 short, 1 short for each coil needed	• • • • • • • •
Calling second rigger	2 long, 1 short	— — •

Skyline carriage signals

All standard high-lead and slackline whistle signals apply to carriages.

Gravity/shotgun carriage		
Standard slackline whistle signals will apply.		
Dropline/accumulator carriage		
Ahead* on carriage skidding line	3 short	• • •
Slack the carriage skidding line	3 short, several short	• • • • • • • • •
Mechanical slack-puller		
Ahead* on slack puller	1 long, 1 short	— •
Ahead* on dropline	2 short	• •
When the haulback is used as a running skyline, standard high-lead signals apply.		
Radio-controlled motorized self-contained yarding carriage		
• This system is similar to the “radio-controlled motor-driven slack-puller, skyline lock” carriage, but does not have a skyline lock. • Any signal preceded by a long signal is a “slow” signal.		
Slack the dropline	3 short, several short	• • • • • • • •
Stop the dropline	1 short	•
Ahead* on dropline	3 short	• • •
If fitted with engine controls:		
Stop engine	1 short, 1 long	• —
Start engine	2 short	• •

*“Ahead” means haulage line moves toward machine

Radio-controlled motor-driven slack-puller, skyline lock
• These carriages are fitted with and controlled by an on-board computerized radio control system • This radio system is operated independently through a transmitter separate from that of the yarder • The yarding and carriage frequencies must be separate, registered, and coordinated through the WorkSafeBC coordination system to ensure that one does not interfere with the other or with another operation. Contact the WorkSafeBC Engineering Department for more information

• An audible signal must be sounded at the carriage and not at the yarder. This signal must have a tone different from that of the yarder signal • Carriages with variable dropline speeds must have a special signal for the speed changes. These signals must be different from standard yarding signals		
Lock/unlock skyline clamp	2 short	• •
Slack the dropline	5 short	• • • • •
Stop dropline	1 short	•
Ahead* on the carriage skidding line	3 short	• • •
If fitted with engine controls:		
Stop engine	1 short, 1 long	• —
Start engine	1 long, 1 short	— •
Loading the Skyline Yarder Signal		
This signal is to be used for alerting the landing workers that the skyline is about to be loaded.		
Skyline being loaded	2 short	• •

*"Ahead" means haulage line moves toward machine

Hand Signals

Cable down

Touch the top of head

Cable up

Raise hand up and down

Ahead on the dropline

Cross arms in front

Mainline ahead slow

Raise both arms

Slack the haulback

Hands in front of body using chopping motion

Slack strawline

Pat back of hand with other hand

Hold dog drum or brake lever

Clasp one hand with the other

Tightline

Place hands over head with fingertips touching

Mainline ahead normal

Raise one arm

Mainline ahead

Raise one arm with hand fluttering

Slack mainline all off

Extend arm at side with wrist flipping

Slack the mainline easy

Extend both hands with hands fluttering

Ahead on strawline

Touch hand to bent elbow

Now try the self-quiz on the next page.

Use Signals Required for the Job—Self-Quiz

1. Draw a line to match the command on the left to the correct operational signal on the right.

☐ Stop any movement	☐ 3 short, 1 short, • • • •
☐ Slack the haulback	☐ 2 short, 2 short, 2 short, 1 short, • • • • • • • •
☐ Ahead* on Strawline	☐ 1 short, •
☐ Pick up the guyline	☐ 1 long, several short, repeated, — • • • •
☐ Fire	☐ 2 short, several short, • • • • • •

2. Draw a line to match the commands when butt rigging is at the landing with the correct signal on the right.

☐ Chokers required	☐ 3 long, several short, — — — • • • •
☐ Calling foreman	☐ 1 long, 1 short, — •
☐ Calling hooktender and crew	☐ 2 short and 1 short or long for each choker required, • • • • •
☐ Calling for block and strap	☐ 4 long, — — — —

3. For slackline signals, to pick up the skyline, choose the correct signal:

   ☐ 1 short, 1 long

   ☐ 1 short, 2 short

   ☐ 1 long, 1 short

4. For skyline carriage signals, slack the carriage skidding line is represented by:

   ☐ 3 short, several short

   ☐ 2 short, several short

- ☐ 1 short, several short

5. Which hand signal does the diagram below represent?

- ☐ Cable down
- ☐ Cable up
- ☐ Mainline ahead slow

6. Which hand signal does the diagram below represent?

- ☐ Ahead on the dropline
- ☐ Slack the haulback
- ☐ Slack strawline

7. Which hand signal does the diagram below represent?

- ☐ Tightline
- ☐ Slack mainline easy
- ☐ Ahead on strawline

Now check your answers on the next page.

Use Signals Required for the Job—Quiz Answers

1. Match the command on the left to the correct operational signal on the right.

Stop any movement	1 short, •
Slack the haulback	2 short, several short, •• ••••
Ahead* on Strawline	3 short, 1 short, ••• •
Pick up the guyline	2 short, 2 short, 2 short, 1 short, •• •• •• •
Fire	1 long, several short, repeated, — ••••

2. Match the commands when butt rigging is at the landing with the correct signal on the right.

Chokers required	2 short and 1 short or long for each choker required, •• •••
Calling foreman	4 long, — — — —
Calling hooktender and crew	3 long, several short, — — — ••••
Calling for block and strap	1 long, 1 short, — •

3. For slackline signals, to pick up the skyline, choose the correct signal:

   Answer: **1 short, 2 short**

4. For skyline carriage signals, slack the carriage skidding line is represented by:

   Answer: **3 short, several short**

5. Which hand signal does the diagram below represent?

Answer: **Cable up**

6. Which hand signal does the diagram below represent?

Answer: **Slack strawline**

7. Which hand signal does the diagram below represent?

Answer: **Slack mainline easy**

Key Point 2.2: Communicate Hazards Back to the Crew

The hook tender and yarder operator need to discuss and involve the crew in planning and setting up safe work procedures to keep them informed. The hook tender must know the capability of each worker under his supervision and must not give a worker a task if he doubts the worker can do it safely. Any person giving instructions must be satisfied that the worker fully understands and can carry out the duties safely. Work activity and coordination should be regularly communicated by the hook tender to and among the rigging crew. The crew should be continually reminded to stay alert.

IMPORTANT!

All workers and lead workers in particular, should make an effort to share their knowledge with co-workers to help everyone work more efficiently and safely.

Communication with the rigging crew and fallers is important while planning the landing to be sure the best falling leads and yarding directions are selected. Make sure all key members of the crew understand basic features of the landing and the operating plan. Control zones of intersection or potential impact. Make sure all landing workers understand restricted zones around each machine. Ground personnel must be aware of the blind spots for each machine operator.

Methods of communicating

Communication between the hook tender / yarder operator to other rigging crew members can be done in one of the following ways:

- In person – if available
- During pre-work meetings – to inform crew members of known hazards or new ones that have occurred since the last meeting
- During breaks – either coffee or lunch breaks, or during the drive to the block
- Radio communication – probably the most accessible and convenient
- Whistle signals – to communicate hazards right away

Now complete the quiz on the next page.

Communicate Hazards Back to Crew—Self-Quiz

1. Is it a good idea for the hook tender to stay with the rigging crew in difficult terrain to help identify and control hazards?

   ☐ Yes

   ☐ No

2. Should the hook tender discuss and involve the crew in planning and setting up safe work procedures?

   ☐ Yes

   ☐ No

3. If the hook tender is in doubt of a worker's ability to do a task safely, should he give the worker that task?

   ☐ Yes

   ☐ No

4. Should work activity and coordination be regularly communicated by the hook tender to and among the rigging crew?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Communicate Hazards Back to Crew—Quiz Answers

1. Is it a good idea for the hook tender to stay with the rigging crew in difficult terrain to help identify and control hazards?

   Answer: **Yes**

2. Should the hook tender discuss and involve the crew in planning and setting up safe work procedures?

   Answer: **Yes**

3. If the hook tender is in doubt of a worker's ability to do a task safely, should he give the worker that task?

   Answer: **No**

4. Should work activity and coordination be regularly communicated by the hook tender to and among the rigging crew?

   Answer: **Yes**

Key Point 2.3: Communicate with Crew in Accordance with Job Requirements Throughout the Day

Responsibilities of communicating with crew include the following:

- Insist on good housekeeping
- Talk clearly on radios
- Teach crews proper work methods; review safe work procedures with all new workers; check their work habits periodically
- Ensure that crew follows general procedures for yarding and loading
- Instruct the crew in all safe work procedures, fire prevention responsibilities, general signals and hand signals
- Ensure all operators are informed of any changes in procedures
- When placing new workers, make certain that those who will be working with them are aware of their lack of experience
- Discuss accident investigation reports with crew regularly
- Notify loader operator before entering his hazard area
- Only allow qualified people to operate power saws
- Ensure that both rigging slinger and chokermen are above and behind turn

Now try the quiz on the next page.

Communicate with Crew in Accordance with Job Requirements—Self-Quiz

1. Is good housekeeping an important point to stress with the crew?

   ☐ Yes

   ☐ No

2. Do you need to instruct the crew in all safe-work procedures, fire prevention responsibilities, general signals, and hand signals?

   ☐ Yes

   ☐ No

3. When there is a change in procedure, must you inform all operators?

   ☐ Yes

   ☐ No

4. Should you discuss accident investigation reports with crew regularly?

   ☐ Yes

   ☐ No

5. Do you need to notify the loader operator before entering his hazard area?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Communicate with Crew in Accordance with Job Requirements—Quiz Answers

1. Is good housekeeping an important point to stress with the crew?

   Answer: **Yes**

2. Do you need to instruct the crew in all safe-work procedures, fire prevention responsibilities, general signals, and hand signals?

   Answer: **Yes**

3. When there is a change in procedure, must you inform all operators?

   Answer: **Yes**

4. Should you discuss accident investigation reports with crew regularly?

   Answer: **Yes**

5. Do you need to notify the loader operator before entering his hazard area?

   Answer: **Yes**

Section 1026-03: Safety Responsibilities of a Hook Tender

What you need to know about this section

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

3.1 Constantly look for hazards within work area

3.2 Controls within the work zone

3.3 Inspect worksite for hazards and how to eliminate or control them

3.4 Ensure landings are organized and clear of unnecessary debris

3.5 Reporting procedures for all accidents or serious near misses

Key Point 3.1: Constantly Look for Hazards within Work Area

Hook tender safety

Before yarding begins, the hook tender should be satisfied that hazards are controlled and the crew is ready to operate. The necessary equipment safety inspection can be performed by the hook tender or another competent person, or others working under their supervision as the setup proceeds. The hook tender must also pay particular attention to the conditions that follow.

Clear hazardous terrain and conditions

Yarding usually begins on the upper side of the unit closest to the yarder, so the crew remains above any hazardous logs, rocks, and other debris on sloping ground. Reassess the terrain for hazards as the crew moves downhill. The hook tender or rigging slinger must be sure the areas above the rigging crew on a slope are clear of any materials that could roll or become dislodged during logging activities. Whenever possible, the hook tender should stay with the rigging crew in difficult terrain to help identify and control hazards.

Stay aware of danger trees

Arrange work to minimize danger to workers. Snags and other danger trees within reach of the landing must be removed if they could endanger the landing crew. The rigging crew must be aware of any danger trees throughout the work area, and must follow up to prevent the crew’s exposure to hazards.

Use caution when working above the landing

Downhill yarding may cause timber and other objects to run down a slope and endanger ground personnel. Arrange work activity so the loader, processor, and yarder operators are not in danger, and establish a safe work area for ground personnel.

Now try the quiz on the next page.

Constantly Look for Hazards within Work Area—Self-Quiz Part 1

1. As the crew moves downhill, it's not necessary to reassess the terrain for hazards.

   ☐ True

   ☐ False

2. The hook tender ensures that the areas above the rigging crew on a slope are clear of materials that could roll or become dislodged during logging activities.

   ☐ True

   ☐ False

3. Is it a good idea for the hook tender to stay with the rigging crew in difficult terrain to help identify and control hazards?

   ☐ Yes

   ☐ No

4. If there are snags and other danger trees within reach of the landing, what must you do?

   ☐ Caution the crew

   ☐ Remove the trees

5. Do you need to establish a safe work area for ground personnel?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Constantly Look for Hazards within Work Area—Quiz Answers Part 1

1. As the crew moves downhill, it's not necessary to reassess the terrain for hazards.

   Answer: **False**

2. The hook tender ensures that the areas above the rigging crew on a slope are clear of materials that could roll or become dislodged during logging activities.

   Answer: **True**

3. Is it a good idea for the hook tender to stay with the rigging crew in difficult terrain to help identify and control hazards?

   Answer: **Yes**

4. If there are snags and other danger trees within reach of the landing, what must you do?

   Answer: **Remove the trees**

5. Do you need to establish a safe work area for ground personnel?

   Answer: **Yes**

Hazards related to rigging

Major hazards for the rigging crew as discussed here represent specific conditions where specific safety recommendations apply.

IMPORTANT!

Stay alert and always know your escape route.

Train new workers to keep an eye out for hazards while they work and think through in advance which way to move if danger erupts. A work position with no good escape route is probably the wrong place to be.

The rigging slinger is responsible for the safety of his crew. If he encounters a hazard that he cannot fix or control, he must halt work.

The following are the hazards for the rigging crew, which includes the chokerperson:

- Inaccurate signal operations
- Swinging and springing chokers
- Suspended and hung-up rigging
- Rolling logs, rocks, and other objects
- Working below a landing on steep ground
- Windfall trees
- Hooking up the turn
- Choked logs moving when haulback is slacked
- Tagged chokers
- Swinging and upending logs
- Positions in the bight of the line
- Unhooking lines off anchors
- Choker breaking on turn through felled timber
- Fighting hang-ups
- Danger trees, loose limbs, and side binds
- Walking in felled timber
- Working in standing timber
- Ground and weather conditions

Hazard 1: Inaccurate signal operations

Unexpected line movement can result if a radio signal malfunctions or is used wrongly. Check equipment and operator knowledge of signals in advance.

Always have two radio transmitters where chokers are being set. A second radio is for backup, but there could be occasions when the second radio is used to stop the rigging when the rigging slinger is occupied or when the crew splits up to set chokers on either side of the mainline. Alert the yarder engineer when both radios are in use.

Precautions

- Set up the radio whistle on an assigned frequency for the operating location to prevent interference
- Handle radio units carefully to ensure reliable operation. Replace malfunctioning units at once
- Keep battery charged as required
- Guard against accidental activation of spare transmitters. Avoid sounding a stop from both radios at the same time, which could be understood as a “hup-ho” to go ahead fast on the rigging. A worker carrying a second set of transmitters needs to sound the whistle for a stop with a long stop or emergency stop
- The rigging crew must be able to distinctly hear the whistle signals. If necessary, set the yarder whistle away from the yarder and closer to the edge of the landing where the rigging crew can hear it over the motor noise of the carriage
- The yarder engineer must receive clear distinct whistles before any line movement. If the yarder engineer is not sure, he must repeat the whistle and wait for a reply or call on the voice channel to verify
- Equip all motorized carriages with a working horn
- Always keep chokerpersons behind you when the turn is going ahead
- When setting chokers, ensure that your actions and whistles do not put any chokerperson in a hazardous position

Note: The transmitter needs to be held upright. The hand should be on the device ready to blow “STOP” in case of emergency.

Keep transmitter ready to signal stop in case of an emergency, especially:

- When spotting the rigging
- After a go-ahead signal has been given, until the turn is cleared
- When lines are being run around

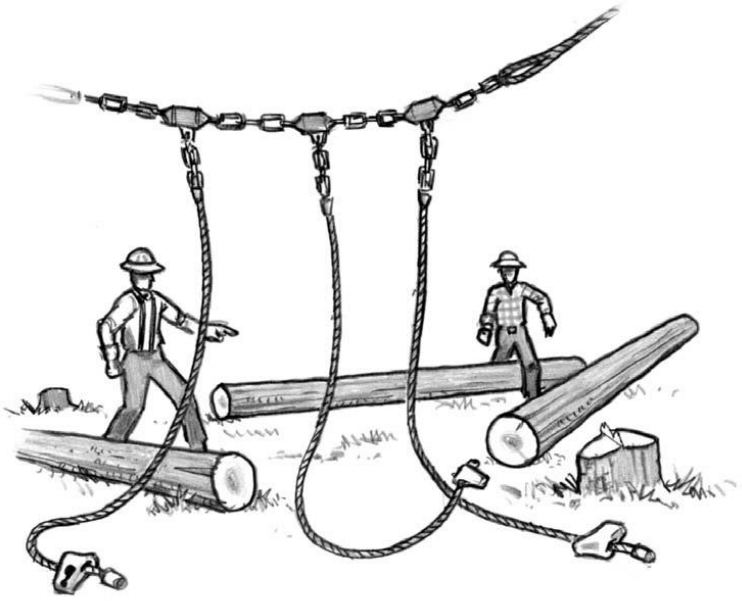
Hazard 2: Swinging and springing chokers

Avoid chokers when the line is moving. Foremost, stay clear of swinging chokers when the rigging is suspended. Chokers dragging on the ground with line movement can also be dangerous if they catch on an obstacle and spring free.

When grabbing the chokers directly under the carriage, either run the carriage ahead or get in and get out, particularly when the carriage is low to the ground.

Precautions

- Keep chokerpersons behind you when rigging is coming back
- As chokers come back to toward the rigging crew, watch for the chokers pulling debris, which can be thrown toward the crew. The rigging slinger on some carriages lets out the drop line as the carriage comes back. Make sure the chokers are not low enough to run into obstructions or pick up debris
- Stay in the clear, at least two choker lengths away, until the rigging is spotted. For carriages with a dropline, this distance may need to be increased. Stay clear of the potential swing of the choker
- When chokers are swinging, slack bells and knobs onto the ground to stop the choker movement before the crew approaches
- Be careful of hang-ups when pulling on a choker. If a choker is badly fouled over a log or in brush, don't jerk it free. Walk over and unfoul it



Only approach the rigging once the chokers come to rest

Hazard 3: Suspended and hung-up rigging

Use caution when working directly under the rigging. There is always a chance a line will be unintentionally released and rigging will drop faster than expected when being slacked down.

Suspended rigging can be dangerous. When the rigging is slacked down, any part of the lines can hang up on saplings or windfall roots and dangle dangerously. Always clear hang-ups before choking logs.

Precautions

- Never stand directly under the rigging! Stay to the side. If it is necessary to cross beneath lines, do it swiftly, and only when there is no load on the lines
- The yarder engineer must keep the braking system well-maintained, including safety brake or dogs
- The yarder operator must stay at the controls when the crew is setting a turn, with brakes applied
- With a dropline carriage, clear a hang-up by repositioning the carriage to drop the chokers in a clear area
- Hand-clear a hang-up only when the rigging is slacked down
- Clear a hang-up with a shotgun carriage or buttrigging
- Watch for signs that the haulback is side bound, such as crossed lines or lines in a new position

Clear a hang-up with a shotgun carriage or buttrigging

To clear a hang-up with a shotgun carriage or buttrigging, complete the following steps:

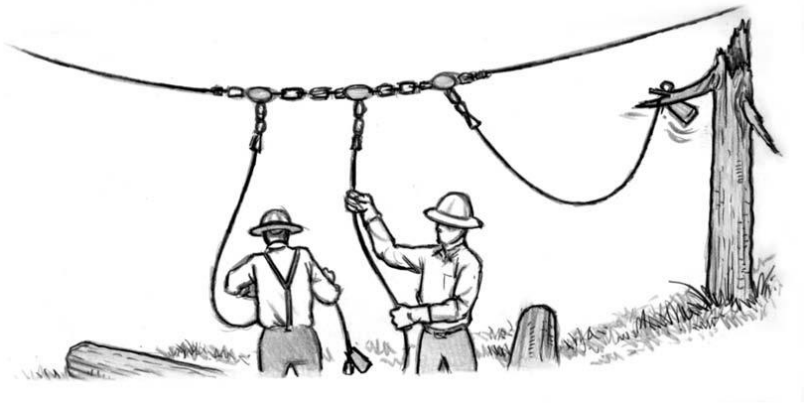
1. Tightline the turn.
2. Remove the sapling or other obstruction.
3. Slack the mainline to add weight to break the hang-up.
4. Slack the mainline and skin the rigging to clear the lines, or skin the rigging back and pick up a light turn to clear the lines.

Suspended rigging hazards

Hazards related to suspended rigging include the following:

- Drum brakes can fail
- Brake bands, anchors, adjusting rods can fail. Ratchets may slip off pawls, particularly on early-model yarders.
- Sudden loss of air pressure can cause the rigging to drop some distance before the spring brake or dogs engage
- Controls may be accidentally released
- Brake may be wet or sticky
- Rigging may hang up on limbs or roots and crash down unexpectedly
- The skyline can incur bounce when the rigging is stopped fast
- The skyline is not static, it moves and bounces slowly throughout the day

- Be aware that it can move on its own at any time, causing the carriage and chokers to move also



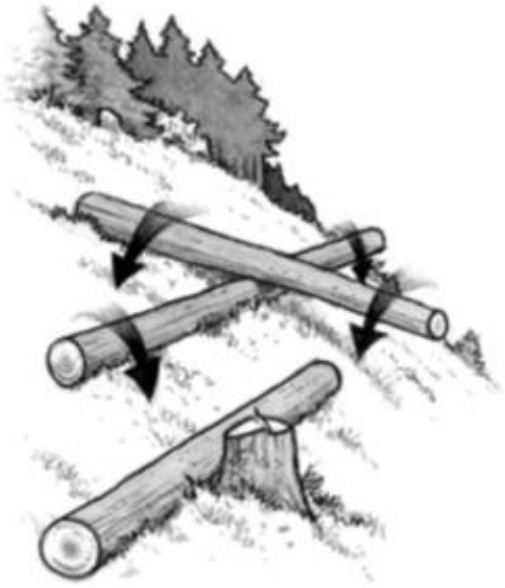
Clear hung-up rigging before working with chokers

Hazard 4: Rolling logs, rocks, and other objects

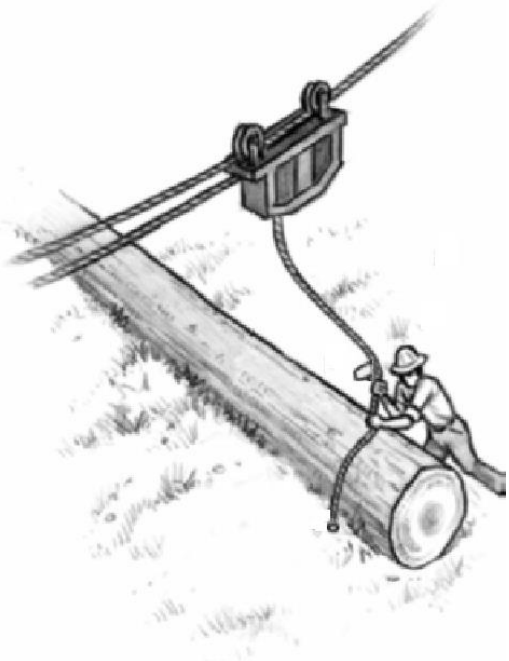
Gravity is the primary source of hazardous energy when working on a slope. Logs, rocks, or other objects can be disturbed by rigging activities and roll or slide downhill toward the crew. The risk is greater working around newly-felled timber, where logs can shift and dislodge other logs or material that appeared stable.

Precautions

- Yard a slope from the highest point down
- Never work below unstable logs, rocks, or other material. If it is unclear what is holding a log, then assume it can move at any time
- When getting in the clear above and behind the turn before the go-ahead signal, identify the logs that will move and check that no unbucked logs or tree lengths could intrude on the safe area chosen. When there is no logged-off area available, retreat farther, and use extra caution. Never remain below anything that could be dislodged when the turn is yarded free
- In an area with bucked timber, never stand on the second cut of a tree that is hooked up
- If there is any doubt about the action of logs in a turn, give the “go ahead slow” signal
- Stay alert to the moving turn and be ready to signal stop if a hazard develops. Chokers can break on the way to the landing or logs break in two, sending material back down on the rigging crew



Beware of unstable logs or other objects beyond the work area that could roll or slide and impact nearby logs



Stay above the log on sloped ground

CAUTION!

Be prepared!

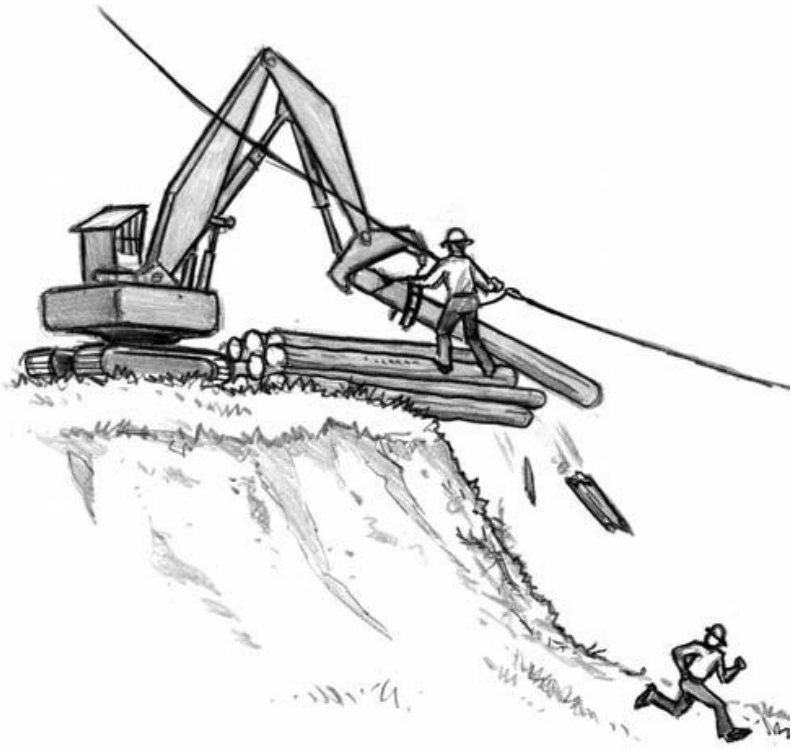
Always know your escape route! Stay above and behind the turn.

Hazard 5: Working below a landing on steep ground

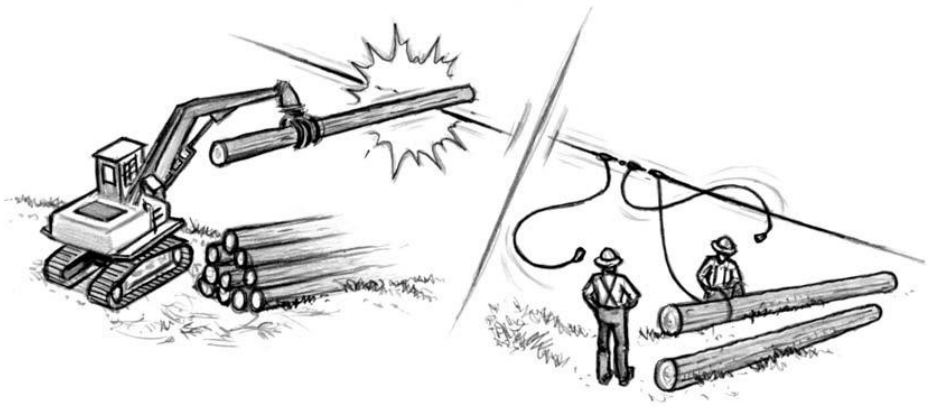
The landing must be planned to minimize the risk of logs or other debris kicked loose at the landing from running downhill toward the rigging crew. On a small landing, the cramped operating area for the loader becomes hazardous. For example, a log in the grapple can strike the mainline and cause the rigging to jump as the rigging crew sets a turn below, or logs may be decked too close to an edge and get disrupted as logs are added.

Precautions

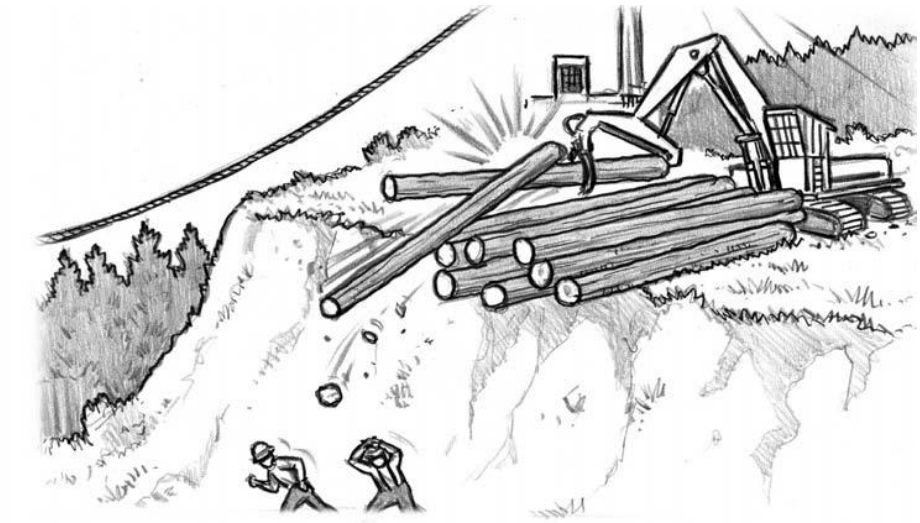
- Discuss the organization of the landing and work zones with the entire crew beforehand. Communication and planning with multiple perspectives improves effectiveness and attention to safety
- The rigging slinger should keep watch as the crew is setting chokers for the lines getting bumped or debris coming out of the landing
- The rigging slinger should try to pick turns that do not require him to slack the lines down where the loader can snag them when setting turns below the landing.
- The landing must be adequate for the turn to be landed and unbelled without using the loader to prevent the turn from running back down the hill
- Plan the areas of operation of the yarder, processor, and loader. Maintain safe distances. Identify areas where equipment operations overlap
- Make sure the loader boom or log in the grapple does not strike the mainline, skyline, running lines, or guylines when the rigging crew is setting chokers. Avoid throwing debris over the bank
- Set up an emergency whistle at the landing with a signal worked out in advance to warn the rigging crew if materials slide off the landing or other hazards appear they may be unable to see.



A short landing is sometimes inevitable, and it may be necessary for the loader or processor to grab and hold the turn while the chaser unbells the logs. Make sure the rigging crew below is in the clear, in case a log slips out of the grapples.



If a machine on the landing hits the mainline, the rigging crew can be endangered by swinging chokers



Beware of log decks close to the edge of the landing. A log can slip off the pile and fall downhill

Hazard 6: Windfall trees

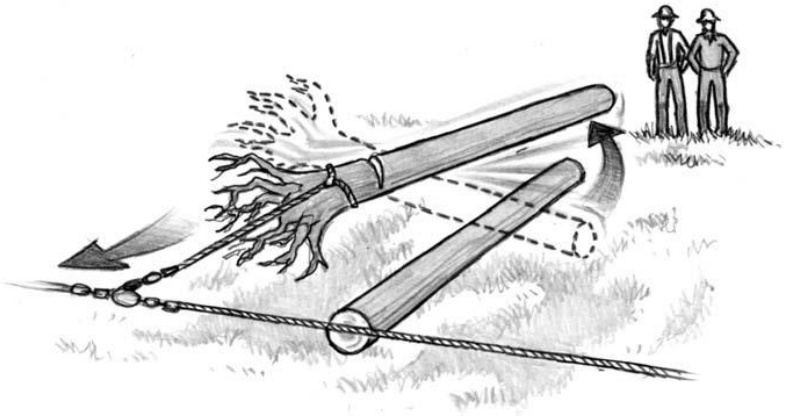
Windfall roots will often sit back when a tree is bucked off or yarded free, particularly if it is bucked short. Heavy rains can disturb the ground and this may cause the root to tip more easily.

Unstable rootwads, when kicked loose, can move unpredictably and cover a wide swath. Any unstable rootwad identified as a hazard in a work area needs to be moved or made secure.

Note: The illustration above shows the WRONG technique. Remember to always set chokers from the upper side.

Precautions

- Always consider root wads dangerous. Avoid getting below or behind root wads. Always approach from the upper side
- Pull a root wad clear with rigging when it appears unstable



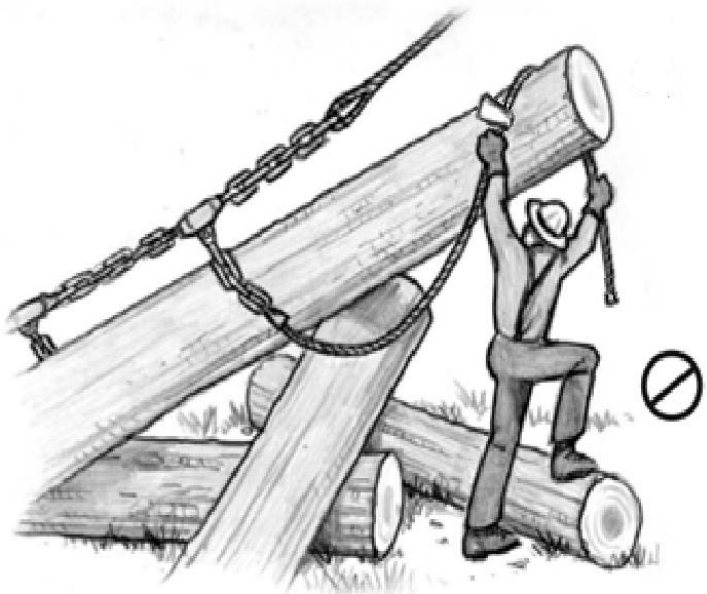
Pull unstable roots clear with the rigging. Get in the clear before lines move

Hazard 7: Hooking up the turn

Hooking up the turn and starting it to the landing can be hazardous work. Adequate training and safe work procedures are vital.

Precautions

- Stay in the clear until the rigging is slacked and chokers stop swinging
- When logs are layered, hook up those on top first to reduce applied tensions and damage
- Avoid crawling under logs that could slip or drop, and watch for logs that could be dislodged by movement from other logs
- When tension is applied to the mainline or dropline, beware if it does not rise into position. The line may be fouled and could break free and throw heavy debris



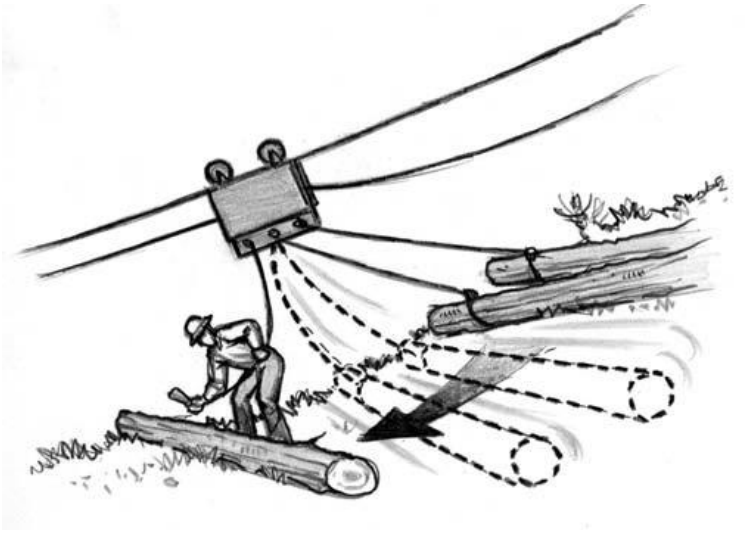
Avoid crawling underneath logs that could slip or drop

Hazard 8: Choked logs moving when haulback is slacked

On a steep hillside, if the haulback is slacked too much or runs unexpectedly when setting the turn, logs already hooked up can be pulled downhill by the weight of the mainline.

Precautions

- Do not slack the haulback if some of the chokers are already hooked up to light or unstable logs



The yarder engineer must keep control of the haulback while chokers are being set to avoid log movement

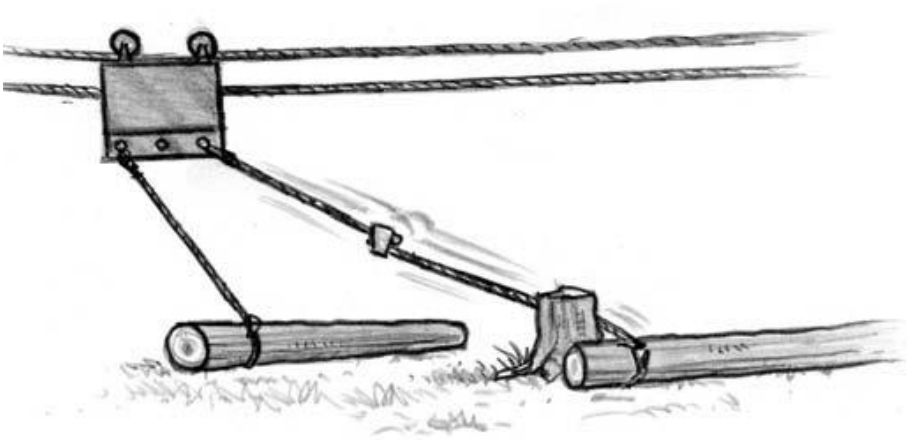
Hazard 9: Tagging chokers

Adding a tag to a choker or leaving a long dropline can be useful to reach a distant log or direct a log around an obstacle. Tags should be removed and droplines shortened before the turn is yarded to the landing.

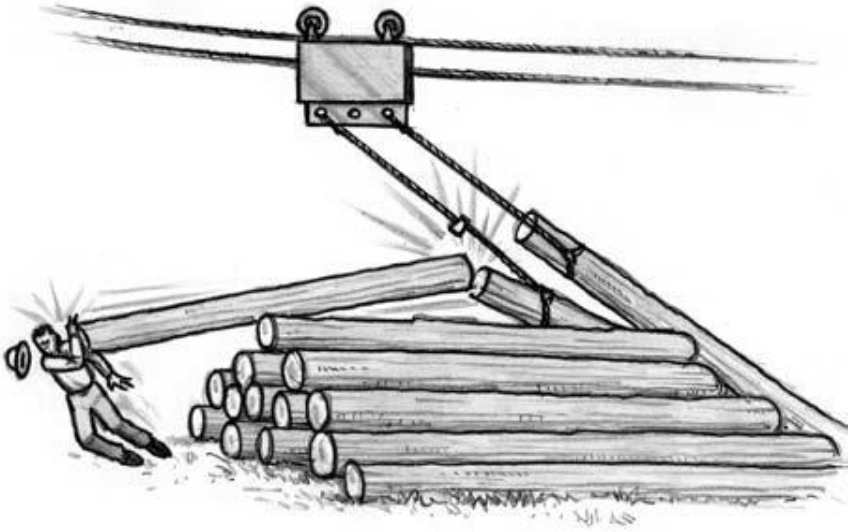
Tagged logs foul more readily and are more difficult to control and tightline clear. They are also more difficult to land and may run outside the turn and jill-poke other logs ahead on a pile.

Precautions

- Establish good communication with the hook tender to ascertain where the next road-line will be. This will go a long way to reduce tagging logs (stringing out)
- On a shotgun carriage or buttrigging, use a front choker for tagging logs whenever possible
- Shorten the tagged choker or shorten the dropline before sending the turn to the landing



Tagged logs are difficult to manage and are more susceptible to hang-ups in the brush and impacts at the landing.



IMPORTANT!

Untag logs in a safe area where logs are stable and not likely to move.

Now try the quiz on the next page.

Constantly Look for Hazards within Work Area—Self-Quiz Part 2

1. Where chokers are being set, how many radio transmitters are required?

   ☐ One

   ☐ Two

2. Do you need to clear hang-ups before choking logs?

   ☐ Yes

   ☐ No

3. When working on a slope, and there is doubt about the action of logs in a turn, what signal do you give?

   ☐ “Go ahead slow”

   ☐ “Stop”

4. When hooking up the turn and logs are layered, which do you hook up first?

   ☐ Those on bottom

   ☐ Those on top

5. On a steep hillside, should you slack the haulback if some of the chokers are already hooked up to light or unstable logs?

   ☐ Yes

   ☐ No

6. Strung-out logs are easier to manage and land.

   ☐ True

   ☐ False

Now check your answers on the next page.

Constantly Look for Hazards within Work Area—Quiz Answers Part 2

1. Where chokers are being set, how many radio transmitters are required?

   Answer: **Two**

2. Do you need to clear hang-ups before choking logs?

   Answer: **Yes**

3. When working on a slope, and there is doubt about the action of logs in a turn, what signal do you give?

   Answer: **“Go ahead slow”**

4. When hooking up the turn and logs are layered, which do you hook up first?

   Answer: **Those on top**

5. On a steep hillside, should you slack the haulback if some of the chokers are already hooked up to light or unstable logs?

   Answer: **No**

6. Strung-out logs are easier to manage and land.

   Answer: **False**

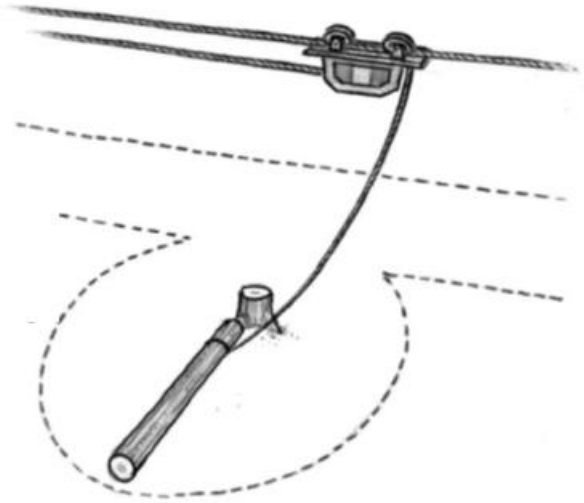
Hazard 10: Swinging and upending logs

Once a turn starts to move, a hang-up can cause a log in the turn to swing or upend, even when the logs are properly choked and there is good deflection in the line. The risk of a swinging log increases when logs are choked with long ends or guthooked, and with a ground lead.

Long ends give a log greater potential to upend or swing violently if it comes in contact with a stump or hang-up. This is most dangerous with long logs or tree-length logs, which have a greater swing radius.

Precautions

- The rigging slinger must ensure the rigging crew is well in the clear and out of the danger area of the longest log yarded before giving the go-ahead signal for the turn. Always stay behind the turn
- The safest position in the clear is above and behind the turn, and out of the bight of the haulback
- Choke logs with short ends whenever possible
- Get well clear when purposely upending or swinging a log. Do not depend on the log to swing in the expected direction
- Never guthook a log, unless a log end cannot be safely reached. Once pulled free, it is better to reposition the choker on the log before sending the turn to the landing.



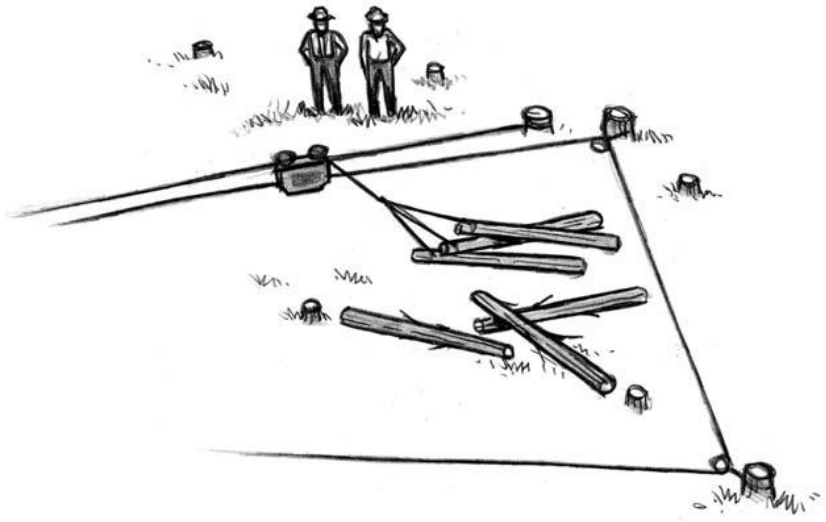
Logs in a turn can swing wildly. Stay well clear

Hazard 11: Positions in the bight of the line

The rigging crew must always get clear before a turn moves. Loggers standing in the bight of the line risk contact with a whipping cable, choked log, or thrown debris. Avoid a layout with a large bight area. A poor layout can make it difficult for the crew to get in the clear or judge where it is clear, especially near the front end.

Precautions

- Beware of flying debris picked up by the haulback that could be tossed downhill



Corner blocks can create a large bight area. During setup, consider the ability of the rigging crew to get in the clear

Hazard 12: Unhooking lines off anchors

Releasing a line off a stump anchor is very hazardous due to pressure in the line. Use caution and always stand on the inside of the point of attachment during release, particularly when there is pressure in the line.

Stumps are either, wrapped once and attached with a shackle through an eye, or they are wrapped three times and cable clipped or spiked. With single-wrapped stumps, it may be safe enough to unhook the end of the line and let it run. If the line needs to be held on the hillside, use a rigging chain and a short strap, or use a catch shackle and strap.

With multi-wrapped stumps, it may be necessary to use a rigging chain and use the strawline or come-a-long to pull the pressure out of the line to release the stump. If the pressure is great, use a back wrap to ensure the line is all out in the direction of pull, and use the strawline or come-a-long to lower the line.

Always stand on the inside of the point of attachment when releasing a line from an anchor

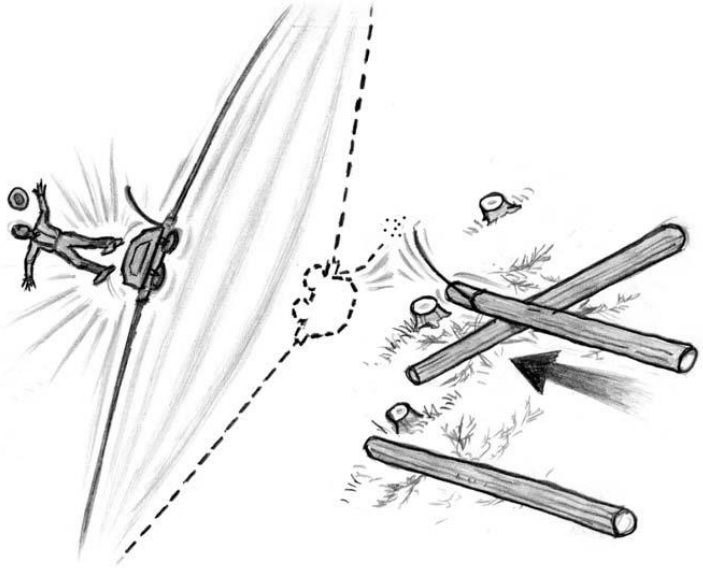
It may be necessary to pound a guyline shackle pin out with a hammer when there is tension on the line, such as when stumps are above the yarder. This is why shackles are done up with the pin coming up from the bottom.

Hazard 13: Choker breaking on turn through felled timber

Beware of the increased risk of a choker breaking when yarding across a hill where the turn cannot be held from running through felled and bucked timber. Tightlining the rigging to clear the obstruction increases the danger of rigging flying uphill toward a crew “in the clear” if a choker or other rigging fails.

Precautions

- Make sure the crew position “in the clear” is above and behind the moving turn, and also beyond the bight of the line, in case rigging fails
- Try to hook up turns light enough to clear felled and bucked timber
- Immediately signal for slack if a choker breaks
- Hook up a bridle to support chokers on large logs



Always stay clear of the bight of the line, even when behind and above the turn. If a choker breaks as a turn moves, the rigging can snap sideways with great force

CAUTION!

Avoid heavy turns. Turns that are too heavy or hooked up improperly increase the chance for hang ups. Reefing and heavy pulling strain the rigging and tower, and may result in catastrophic failure. Select turns light enough to yard without reefing.

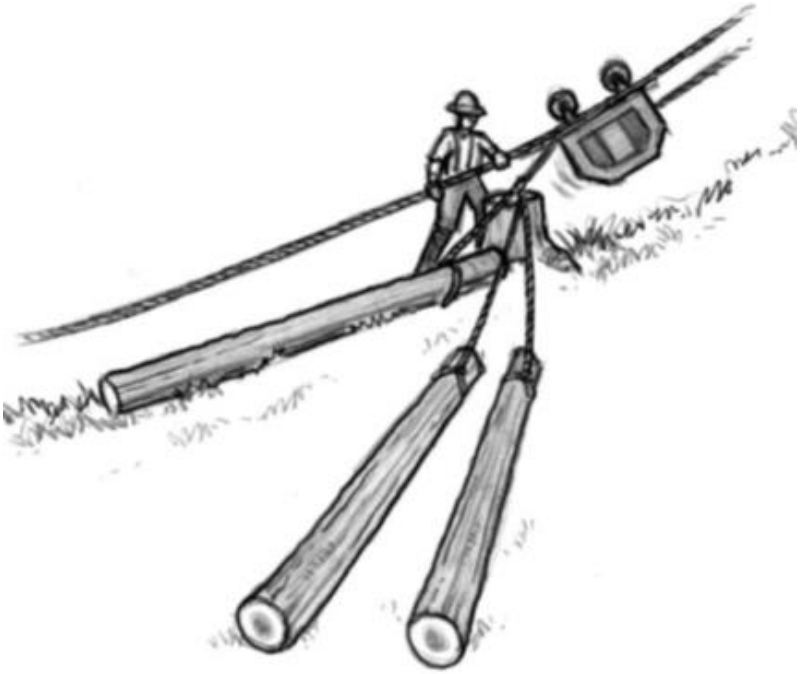
Hazard 14: Fighting hang-ups

Hang-ups are always hazardous. Good planning for the landing, yarding system, road lines, and payload should minimize problems with obstructions. Every hang-up is going to be different. On some it may work to dislodge the hang-up by repositioning the carriage and pulling in the opposite direction. Others may require unhooking the logs and repositioning the chokers and others to pull out one log at a time. Avoid letting hang-ups become routine, which may encourage the crew to gradually stand closer to the turn and forget the risk.

Precautions

- On steep hillsides, always approach hang-ups from the upper side
- Never approach from below the turn when yarding uphill if there is a risk of logs shifting or rolling
- Slack the rigging down before entering the area
- Watch for saplings snagged by the turn and bent under pressure

- Watch for loose rocks and other objects moving with the turn, especially on a hillside. Always assume the turn could roll or shift, and avoid getting caught in a pinch point
- Use caution when standing or working under elevated rigging, which could fall unexpectedly
- Ensure communication with the yarder engineer is working properly, whistle is heard or a whistleman can hear and see the rigging slinger's signals
- Get clear before signaling to go ahead on the rigging. Make sure others are clear, too.
- Designate a safe location for workers who must fight repeated hang-ups
- If repeated hang-ups occur, consider options to remove or minimize the problem



Use extra caution when approaching a hang-up

Hang-up hazards

Hazards related to hang-ups include the following:

- Rigging under tension may spring or pull loose
- Material disturbed by the hang-up could spring or move unexpectedly, even after the turn is cleared
- Rigging may drop unexpectedly. A log can possibly swing or upend even after the stop signal is given
- Lines that are "bit in" may move unexpectedly

CAUTION!

Always inspect a hang-up closely for hazards!

Hazard 15: Danger trees, loose limbs, and side binds

Remove snags and danger trees in the area before work begins, or arrange work to limit exposure. Stay vigilant as work progresses and report hazards to the hook tender.

Danger trees from farther away can also be hazardous if caught in the path of a tightening line. A side bound line caught on a tree, rock, stump, or debris pile can throw materials a considerable distance, and the bight in the line can spring one direction and rebound opposite if it breaks free. Side binds also rapidly damage a line and can be a fire hazard in dry weather.

Pay close attention to line movement to indicate obstructions. A haulback that saws into a stump, for example, will not move freely and may develop slack in the backline that allows rigging movement even after the yarder stops. If the rigging does not move at once when the haulback is slacked, stay clear, and slowly pick up the slack, then look for a side bind.

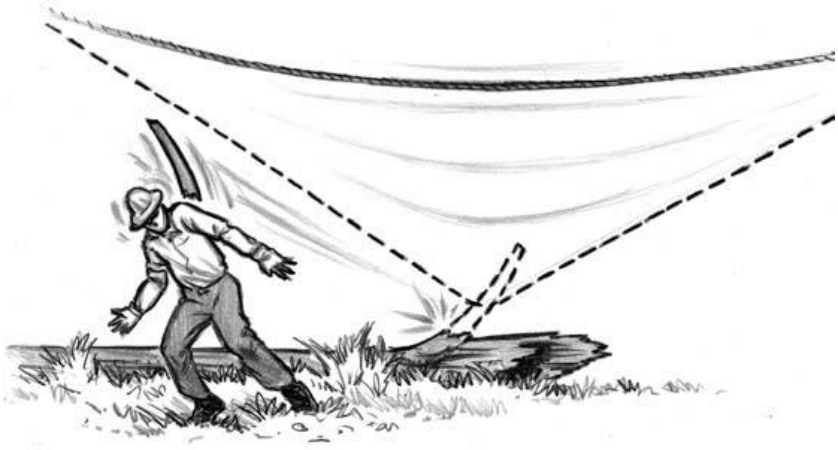
Precautions

- Stay alert for danger trees, snags, and loose limbs in the work area, especially on the back-end boundaries. Report and remove hazards, or attach safety ribbon and stay clear. Loose branches are common and often hard to see
- Always get in the clear of moving lines and keep well out of the bight of the line.
- Stay alert for side binds and clear any hang-ups immediately
- String lines as straight as possible and stay above intervening obstacles
- Use extra caution when working with strawline
- Be ready to throw clear any objects being carried if a fall is imminent

Strawline side binds

Strawline hazards are commonly underestimated. The small line is actually more dangerous than other lines because it more easily runs through and catches on obstructions, and more easily breaks free under tension. Strawline can fail and throw pieces. Always stay clear of the strawline just like other moving lines, and watch carefully for side binds.

A line caught on a stump can suddenly break free



A hung-up line can throw a branch or a whole log when tensioned

Hazard 16: Walking in felled timber

Walking in felled timber presents several hazards, even on level ground. Logs may be unstable or slick, with bucked sections, or loose bark and falling even a short distance off a small log can result in serious injury, due to sharp branches, broken hinge wood on stumps, uneven surfaces, stubs, or other hazards.

In an area of newly-felled timber, snags or wildlife trees may have been left, and loose limbs (widowmakers) may remain along the cutting line. Root wads bucked short have been known to suddenly

sit back upright. Avoid walking under roots and stay alert for other hazards.

Precautions

- Stay alert and cautious while walking. It is not always possible to take action to avoid or eliminate hazards in felled timber, so caution is the best advice
- Look to ensure a log is supported by a stump or other solid object that will prevent rolling
- Wear appropriate caulk boots for walking on felled timber, logs, or boom sticks
- Look for hazard ribbon left by others, and report newly observed hazards to others in the crew. If a log is loose or unstable, consider kicking it free down the hill, particularly if leaving it would pose a hazard to the rigging crew as they work down the hill

Tree bucked up but still hanging

Loose bark can cause a serious fall, particularly when the sap is up

Windfall roots can sit back and crush a worker

Hazard 17: Working in standing timber

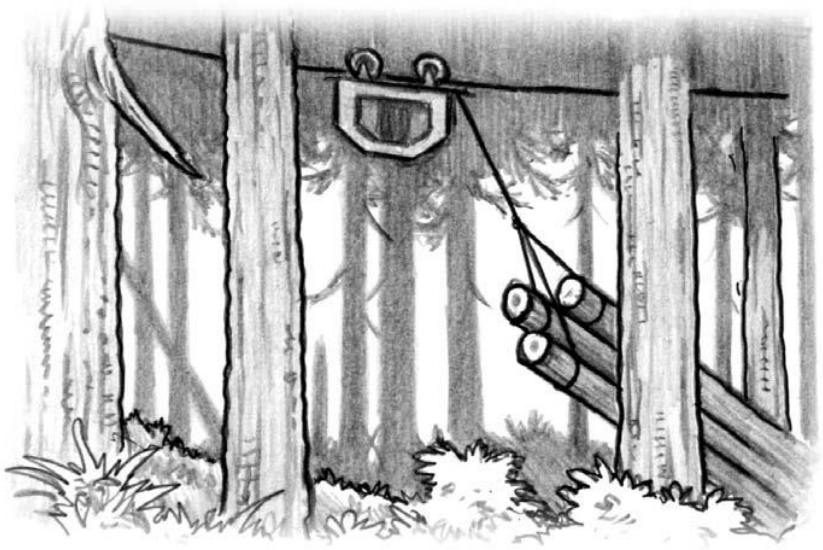
Working in a thinning operation in standing timber poses additional risks for the rigging crew not normally encountered in a clear-cut unit. Workers need to contend with risks such as:

- Leaning and hung trees, limbs, and other overhead hazards
- Spring-loaded limbs and vines
- Logs that are out of lead
- Logs that will not easily turn up the corridor
- Similar obstructions due to surrounding trees left standing

Two of the biggest risks involve intermediate lift trees. Rigged trees can fail and fall in an unexpected direction, or the carriage can jump off the jack as the carriage is returned to the rigging crew. Make sure the crew stays out of the potential failure zone of rigged support trees during outhaul as well as inhaul.

Trees or logs felled in a thinning operation may lay out of lead, making it necessary to position the carriage with some care to provide the straightest pull out to the corridor without a hang-up. As the turn is pulled to the corridor, it may be necessary to reposition the carriage again to overcome a potential hang-up. The rigging slinger needs to stay alert to stop the inhaul of the drop line before a turn becomes hung up.

The way logs are choked can help avoid hang-ups. Consider choking logs farther from the end than normal if it appears the pull will help a log clear a hang-up and enter the corridor before it swings into the direction of pull. Once the log is free, it may be necessary to stop and adjust the choker to the end before sending the turn on to the landing.



Hang-ups and failure of rigged trees are more likely logging in standing timber

Hazard 18: Ground and weather conditions

Poor weather creates hazards in the environment and also affects worker attitudes and energy. Cold and wet workers will be less vigilant and less likely to move far enough into the clear. Make sure workers dress appropriately for the weather to stay warm and dry.

Rain, snow, and heat all make a rigging slinger tire out faster than normal. Always clear out to a safe position. Don’t get lazy because you’re tired and not clear far enough. In the heat, remember to hydrate well before, during, and after work.

The following points cover common conditions:

Rain

Loose and slick ground produces the most frequent source of injury in slips, trips, and falls. Take extra care walking on slopes, logs, and machinery.

Chokersetters should be alert for new hazards with sliding logs and other materials that appeared stable when dry.

Watch for slide hazards on slopes. Look for signs of loose trees or stumps, and smooth rock surfaces showing. Report suspicious signs at once.

Fog

Work can be carried out safely in fog by organizing additional communication and other precautions. However, on steep ground, work must stop if crews cannot see runaway objects. Wait for vision to improve.

Snow

Yarding in heavy snow is not always safe, practical, or productive. Workers must be extremely cautious. Activity is slow and workers are prone to slips and falls. Logs can slide more easily, farther, faster, and quieter on snowy slopes.

Light snow produces hazards for the rigging crew as well. In moderate conditions though, it may remain possible to load trucks on the landing. Use extra caution when getting on and off machines and trucks. Use tire chains when necessary.

Thunderstorms

Lightning does indeed regularly strike poor souls working outside in the rain. Electrical storms are particularly dangerous for loggers. Nearby trees attract lightning, so do long lengths of steel cable, and especially moving cables. The risk is much more real than commonly imagined. Stop working until the storm passes. Stay clear of standing timber, towers, and blocks.

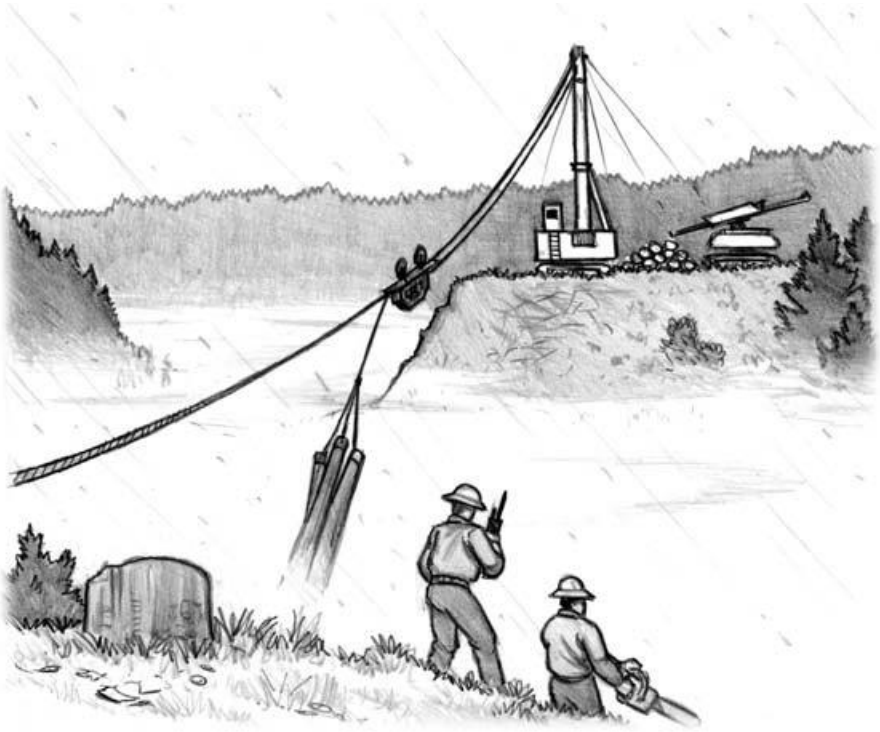
Hot and dry

Take extreme care to avoid starting a fire. Apply all recognized fire-prevention procedures.

If a fire does start, follow the employer’s firefighting plan. Use Ministry of Forests recommendations.

Wear adequate clothing to avoid sunburn or sunstroke. Drink plenty of fluids.

Know heat-stress and heat-stroke symptoms. If stress occurs, stop working and find shade. If stress continues, seek first-aid treatment immediately.



Now complete the quiz on the next page.

Constantly Look for Hazards within Work Area—Self-Quiz Part 3

1. Does the risk of a swinging log increases or decreases when logs are choked with long ends or guthooked?

   ☐ Increases

   ☐ Decreases

2. You should avoid a layout with a large bight area.

   ☐ True

   ☐ False

3. When releasing a line off a stump anchor, where should you stand?

   ☐ Stand on the outside of the point of attachment during release

   ☐ Stand on the inside of the point of attachment during release

4. If a choker breaks on a turn through felled timber, what should you do immediately?

   ☐ Signal the foreman

   ☐ Signal for slack

5. On steep hillsides, where should you always approach hang-ups?

   ☐ From the lower side

   ☐ From the upper side

6. What potential hazard does a side bound line caught on a tree, rock, stump, or debris pile present?

   ☐ Can cause trips and falls

   ☐ Can throw materials a considerable distance

7. When walking in felled timber, falling even a short distance off a small log can result in serious injury.

   ☐ True

   ☐ False

8. When working in standing timber, should you choke logs closer or farther from the end than normal to avoid hang-ups, if it appears the pull will help a log clear a hang-up and enter the corridor before it swings into the direction of pull?

   ☐ Closer

   ☐ Farther

9. Under foggy conditions, on steep ground, work can continue even if crews cannot see runaway objects.

   ☐ True

   ☐ False

Now check your answers on the next page.

Constantly Look for Hazards within Work Area—Quiz Answers Part 3

1. Does the risk of a swinging log increases or decreases when logs are choked with long ends or guthooked?

   Answer: **Increases**

2. You should avoid a layout with a large bight area.

   Answer: **True**

3. When releasing a line off a stump anchor, where should you stand?

   Answer: **Stand on the inside of the point of attachment during release**

4. If a choker breaks on a turn through felled timber, what should you do immediately?

   Answer: **Signal for slack**

5. On steep hillsides, where should you always approach hang-ups?

   Answer: **From the upper side**

6. What potential hazard does a side bound line caught on a tree, rock, stump, or debris pile present?

   Answer: **Can throw materials a considerable distance**

7. When walking in felled timber, falling even a short distance off a small log can result in serious injury.

   Answer: **True**

8. When working in standing timber, should you choke logs closer or farther from the end than normal to avoid hang-ups, if it appears the pull will help a log clear a hang-up and enter the corridor before it swings into the direction of pull?

   Answer: **Farther**

9. Under foggy conditions, on steep ground, work can continue even if crews cannot see runaway objects.

   Answer: **False**

Hazards related to the landing or utility person's job

Hazards related to the landing or utility person's job includes the following:

- Danger trees
- Yarding downhill
- Raising, lowering, moving the tower
- Breaking lines
- Missing guards
- Spooling lines
- Working with strawline
- Moving carriage
- Hand signals
- Unhooking the turn
- Bucking logs
- Being run over by vehicle or machine
- Tripping and falling
- Lifting heavy objects
- Cutting lines
- Using gasoline near fire

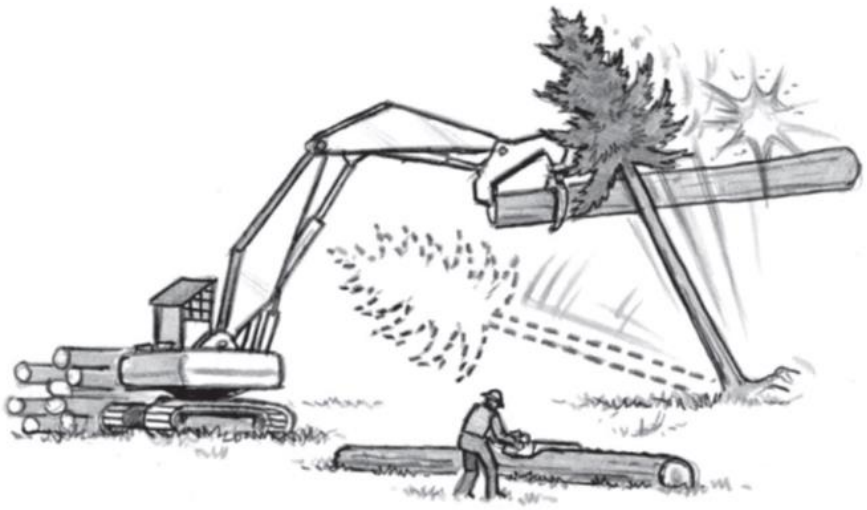
Hazard 1: Danger trees

Danger trees within reach of the landing must be felled before yarding begins if they pose a hazard. Stay alert during operations to be sure no other trees or saplings have become a danger.

The chaser is in the most danger of being struck by saplings pulled over into the landing by the moving turn or swinging logs in the grapple of the log loader. The tops of trees can break off and fly in any direction.

Precautions

- Report potential hazards to a qualified person who can evaluate danger trees and snags
- The chaser and hook tender must stay alert for danger trees and remove them before work continues, or work must be arranged to minimize danger



Remove danger trees near the landing before work begins

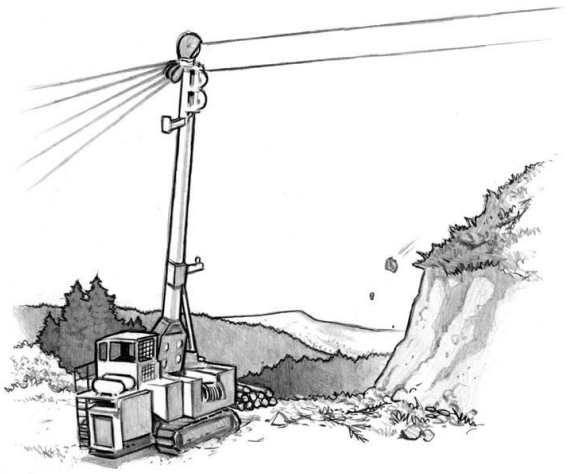
Hazard 2: Downhill yarding

In downhill yarding setups, yarding is not allowed if the yarder engineer is endangered by sliding objects. Straight downhill yarding on steep slopes is particularly dangerous. Typically, a larger landing area is needed to increase the amount of space in the clear. Logs can come to the landing out of control at times.

Plan in advance how to work on steep slopes and take measures to minimize the risk of logs or other debris rolling into machinery or ground personnel. The machine operator and a competent person must agree how to safely operate, considering experience of the operator, machine limits, soil conditions, corridor directions, hazards of moving machinery, weather, load size, and any other adverse conditions.

Precautions

- Keep the chaser, loader, and processor clear when rigging is moving
- Take care that logs or other materials are not pushed or thrown down the slope when the landing crew is below
- In downhill yarding, beware of roots or chunks caught on the yarding lines, which can be thrown toward the landing when the turn is tightlined. Immediately signal to slack the yarding lines and remove the hazard before landing the turn
- Slow the turn before it approaches the landing and be sure the haulback is adequately snubbed to control it



In downhill yarding setups, minimize the risk of logs or other debris from rolling into machinery or landing personnel

Hazard 3: Raising, lowering, moving the tower

When the yarder needs to be moved to a new position on the landing, the tower must generally be lowered first. The tower may be raised for mobility if adequately supported and the stability of the machine is not impaired. Be careful on rough ground to avoid damage to the tower from flexing in the carrier saddle.

Moving the tower and raising it again on new guylines can be a hazardous moment. Ensure workers are aware of the danger and alert to potential failure.

Precautions

- Only a qualified person may undertake moving the yarder, and only an authorized yarder engineer may operate the controls
- Stay clear of side binds and bights. Pay close attention to strawline to avoid side binds or bights
- Tow or snub yarders on adverse grades to control movement. Many older yarders may not have adequate brakes. Stay clear of lines and machinery in towing or snubbing operations
- Do not walk directly behind the yarder when it is being moved up a grade.
- Always use a spotter during yarder movement
- When raising or lowering the tower, stay clear where blocks or jacks could move. Use caution when working with strawline under tension
- Follow manufacturer's instructions when raising the tower in the new position. Follow safe practices when spooling the lines
- Know your escape route when working with machinery
- Use caution when spooling lines, especially when spooling the raising guys

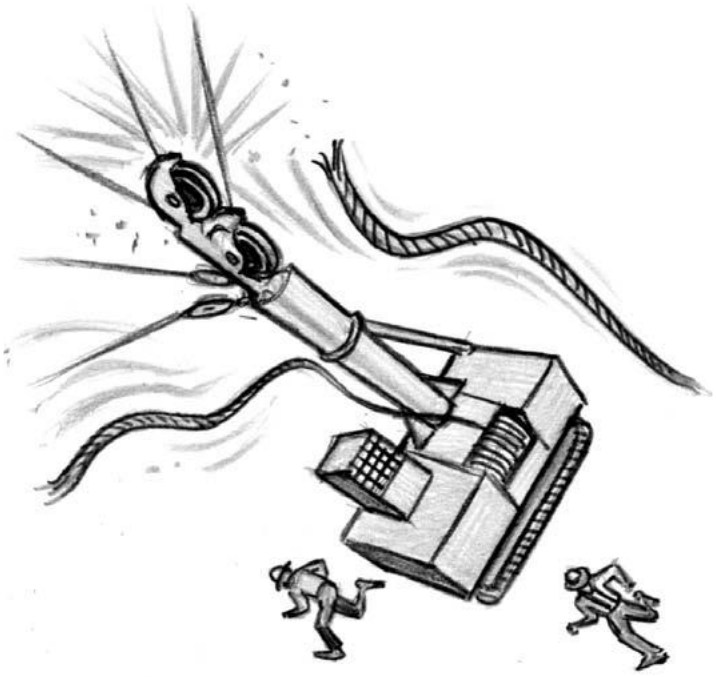
Hazard 4: Breaking lines

Wire rope most often fails because it is worn out or overloaded. Planning, equipment inspection, and safe operating procedures are the best way to prevent line failure.

Lines generally break in the leads where they twist through sheaves. Whenever a line breaks, movement is likely to occur around the landing.

Chasers must remain far enough in the clear to avoid being struck if lines do break and fall. Beware of thrown objects that may come with a broken line, such as parts of blocks or shackles, and beware of the possibility the tower could collapse.

Chasers and ground personnel need to plan escape routes in advance to know immediately where to go if lines fail and come crashing down. Broken mainlines or skylines can recoil back over the top of the yarder into "safe zones" behind the yarder. When this happens, the only safe place is under the yarder.



Always know your escape route!

Hazard 5: Missing guards

The cab of the yarder must protect the operator from broken lines, chunks, and logs. Shear or deflector guarding must be installed in front and the sides of each cab to deflect whipping saplings and branches without compromising visibility. Every fully enclosed cab must have a second, alternate means of escape without tools.

Most cabs must provide structural protection and restraint for the operator, including ROPS, FOPS, reinforced cabs, or overhead guards. Operators of stationary yarders are not required to use the operator restraint system or wear a hardhat while working in the cab.

Guarding is particularly important during and following maintenance. Do not run the machine during maintenance with guards removed, unless necessary for a particular procedure. Completely shut down and lock out energy during maintenance.

Unless otherwise stated by the manufacturer, never start a machine from outside the operator's cab. This is a common practice but mostly done wrong during maintenance, which puts the operator at risk outside the guarded space of the cab. Sudden movement of a parked machine or vehicle can be fatal. Start and operate machines only from the operator's seat.

CAUTION!

Machines must not be operated until all guards are reinstalled, safety devices reactivated, and maintenance equipment removed after adjustments or repairs are made. Without guards in place, the

operator or others may be caught in gears, or belt and chain drives. These are almost always severe or fatal injuries.

Precautions

- Make sure all guards are adequate and meet manufacturer's specifications
- Report guard defects for repair
- Make sure the alternate escape route from the cab is functional

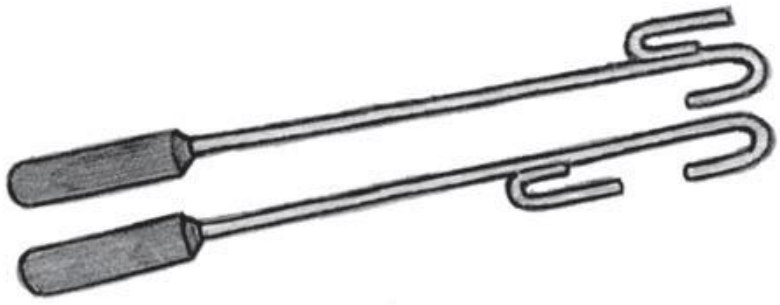
Hazard 6: Spooling lines

All lines need to be spooled at one time or another. Guylines and the skyline are the most common lines to need attention.

Use caution walking and working on metal yarder surfaces. Caulk boots are not safe, unless a nonslip material covers the walking surface. Stand securely with both feet on the platform, and do not rest a foot on or near the drum or any moving parts.

Assure all guards are in place to avoid contact with hazardous pinch or shear points. If it is necessary for a worker to stand near the drum to spool a line or perform machine maintenance, make sure hazardous energy is shut down and locked out to prevent unintentional activation of the drum.

Always use an appropriate tool. It is OK to touch a moving line provided it is moving slowly. Use a handover-hand motion. Do not allow a line to slide through gloved hands. Remember that a jagger can catch on the glove or hand.



Two examples of spooling tools

Hazard 7: Working with strawline

Strawline is most commonly used when stringing guylines and changing roads. Side binds are not as common or severe on the landing as in the brush, but the landing crew is also at risk. Pay close attention to line movement to indicate obstructions. Notify the hook tender immediately if a hazard emerges, and clear any hang-ups

before continuing. The chaser needs to notify the hook tender or operator if any strawline needs to be replaced.

Precautions

- Use caution when unhooking a strawline from a larger line pulled back up to the landing. A twist can be pulled into the line and it may spin back violently when unhooked
- Keep fingers clear of the strawline eyes when releasing sections of wire
- Never grab the wire close to the sheaves. Fingers can get pulled into the sheaves
- Always wear gloves, and watch out for jaggers
- Watch for loose strawline eyes when changing roads and fixing them

Hazard 8: Carriage movement

When working the landing, the yarder engineer must ensure the chaser is out of the bight of the line before any line is moved. A particular hazard exists when sending signals to a radio-controlled carriage. It is possible for the carriage to get the wrong signal or the operator to hit the wrong switch, and have the carriage react unexpectedly.

The chaser needs to stay alert to whistle signals that indicate a line is about to move. When removing or placing the carriage on the skyline, be sure the carriage is properly supported so it does not fall on workers.

Now try the quiz on the next page.

Constantly Look for Hazards within Work Area—Self-Quiz Part 4

1. Do you need to remove danger trees near the landing before work begins?

   ☐ Yes

   ☐ No

2. In downhill logging, ensure that logs or other materials are not pushed or thrown down the slope when the landing crew is below.

   ☐ True

   ☐ False

3. Workers need to plan escape routes in advance to know immediately where to go If the line breaks and things come crashing down.

   ☐ True

   ☐ False

4. Do you need shear or deflector guarding installed in front and the sides of each yarder's cab?

   ☐ Yes

   ☐ No

5. Is it OK to touch a moving line if it is moving slowly?

   ☐ Yes

   ☐ No

6. When working with strawline, is it OK to grab the wire close to the sheaves?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Constantly Look for Hazards within Work Area—Quiz Answers Part 4

1. Do you need to remove danger trees near the landing before work begins?

   Answer: **Yes**

2. In downhill logging, ensure that logs or other materials are not pushed or thrown down the slope when the landing crew is below.

   Answer: **True**

3. Workers need to plan escape routes in advance to know immediately where to go If the line breaks and things come crashing down.

   Answer: **True**

4. Do you need shear or deflector guarding installed in front and the sides of each yarder's cab?

   Answer: **Yes**

5. Is it OK to touch a moving line if it is moving slowly?

   Answer: **Yes**

6. When working with strawline, is it OK to grab the wire close to the sheaves?

   Answer: **No**

Hazard 9: Hand signals

Chasers must understand and correctly use standard hand signals to avoid injury from unexpected machine movement. The chaser and machine operators must understand when and where hand signals will be used, with a set of mutually understood signals.

Ground personnel and machine operators must coordinate their activities to avoid dangerous situations. The chaser or other person on the ground must stay visible while machinery operates. Make distinct hand signals within a visible distance, but beyond reach of the machine. Be certain the operator understands the signal before moving.

Precautions

- Make sure the landing crew is adequately trained in hand signals before working together as a team
- Do not use signal methods that involve throwing sticks or other objects, unless no other way exists to get the operator's attention

Hazard 10: Unhooking the turn

Unhooking the turn requires good physical condition, quick reflexes, and rapid judgment of hazards in the situation. Chasers need to be fit and sharp.

Stay alert for the kinds of hazards experienced by the rigging crew: avoid working from the lower side, avoid unstable logs, watch for counterbalance swing, avoid working directly under the rigging, and stay alert for unexpected hazards.

If any logs in the turn arrive on strung-out chokers or a long dropline, stay clear of logs already on the landing that could be disrupted.

IMPORTANT!

Watch for long ends of logs, mis-choked logs, and logs or trees coming into the landing at odd angles.

The chaser needs to communicate to the machine operators any intentions to move out of the normal, clearly visible safe position on the landing. Always notify operators when approaching the turn, moving to buck logs, or any other activity.

The chaser needs to communicate to the machine operators any intentions to move out of the normal, clearly visible safe position on the landing. Always notify operators when approaching the turn, moving to buck logs, or any other activity.

Hazard 11: Bucking logs

At some operations, chasers must use a chainsaw continuously. Chasers must be trained in safe handling and use of chainsaw and

wear proper personal protective equipment, including leg, eye, and ear protection.

A particular area should be reserved on the landing where bucking can be performed safely. Stay in view of the machine operators on the landing and make sure they are aware of the work being performed.

Only buck logs that are stable and on the road.

Do not brand, buck, or trim logs in a location exposed to contact with moving lines, logs, rigging, machines, equipment, or vehicles. Avoid bucking in the chute. If bucking in the chute is necessary, worker should receive permission from the supervisor.

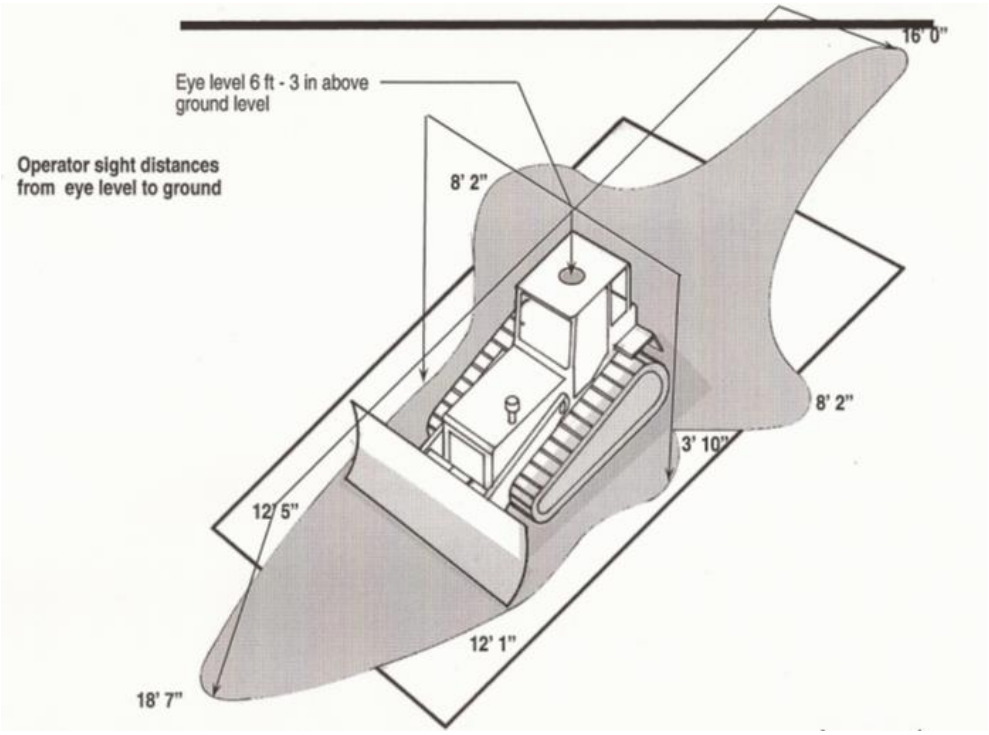
Bucking a log

Hazard 12: Run over by vehicle or machine

Many workers are seriously or fatally injured in work areas that combine vehicle and machine traffic and ground personnel. Instances include riding on a machine outside the cab, approaching, or trying to mount a moving machine, and getting caught by a vehicle or machine backing up.

Parked vehicles can be a hazard as well. Many workers are injured while working around or under a stationary vehicle that suddenly moves.

Working machines can suddenly and unexpectedly move. Always consider the path of travel, swing radius, or blind spots of all machinery, even when stationary.



A bulldozer's blind spots

Precautions

- Avoid standing directly behind a machine or vehicle, or in any blind spot of particular machines. Never stand at the ends of tracks
- Avoid getting cornered against an object by a machine or vehicle. Keep an escape route
- Never ride a machine or vehicle outside the cab
- Never try to mount or dismount a moving machine
- Block wheels and make sure supports are secure before working underneath a machine or vehicle
- Never start a machine from outside the cab

Hazard 13: Trips and falls

Trips and falls are common, but often preventable. Wear caulked boots if work involves walking on logs. Note that caulked boots easily slip on metal surfaces. Step carefully mounting or dismounting machinery, especially in wet weather. Always pay attention to footing while walking or working. Avoid awkward positions in case quick movement is necessary.

The chaser and machine operators should coordinate to keep debris and waste materials clear of work areas. Store all equipment and tools not in use out of the way. Keep frequently used tools, such as power saws, in a specific place away from work paths.

Hazard 14: Lifting heavy objects

Train all workers how to safely lift heavy objects to avoid back injury. The chaser is most exposed to risk on the landing. Rely on machinery as much as possible to pick up heavy objects.

Correct posture for lifting a heavy load

Hazard 15: Cutting Line

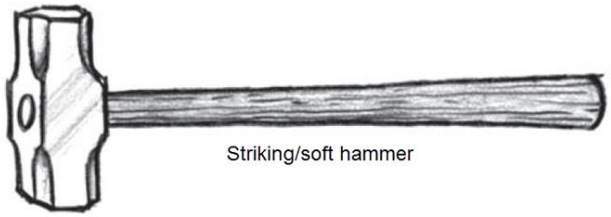
Use caution when cutting lines. Metal chips can be ejected from the line cutter. Make sure guards are in place on the line cutter. Everyone working around a line cutter must wear eye protection. Thrown chips are generally hot, which makes eye injuries more severe.

Precautions

- Always wear eye protection, or face protection if company policy requires it
- If using a cut-off saw, be aware of the sparks on dry ground or on nylon buckers pants
- When holding a line for another worker to cut, keep head down during the cut, with safety glasses and hard hat for protection.
- Make sure all tools are in good condition and the hammer head is secure on the handle
- Use only a soft-headed hammer when cutting line
- Ensure a firm grip
- Use only acceptable wire cutters
- When starting a cut, place the cutting blade over the same point on the wire for every hammer blow to prevent flying chips

- Avoid placing the cutter on a hard surface, like a rock, which makes it bounce around. Use a stump when possible
- Stand on the closed side of a piston or guillotine-type cutter. Use caution for all cutters. Even a hydraulic cutter can throw chips

Always wear eye protection when cutting line. Helpers must turn face away during the cut



Striking/soft hammer

Eye protection goggles

Guillotine line cutter

Hazard 16: Gasoline near fire

Warming fires are common in logging operations, especially during winter months. In wet conditions, loggers have been tempted to use saw gas to get a fire to burn, with disastrous results.

CAUTION!

Never use gasoline or saw gas near any open flame!

Gasoline quickly vaporizes and becomes explosive. Diesel fuel can be safely used to start a warming fire, but diesel fuel may burn off and fail to ignite wet wood.

Loggers may not have access to diesel fuel and may be tempted to use saw gas alone to start a fire. Don't do it. Instead, alternative noncombustible products are available to start fires, such as fire starters comprised of sawdust and wax. These products are small and lightweight. Or use pitchy wood from old-growth stumps. Using a mixture of diesel fuel and gasoline in a ratio of 3:1 or 4:1 diesel to gasoline to start a fire is safer than using straight gasoline. Prepare for a warming fire in advance by obtaining a safe fire starter.

Employers must train employees on safe procedures for starting and stoking fires, and emphasize the extreme hazard of using gasoline on a fire.

Precautions

- Check the fire hazard before starting a warming fire. Open fires are not allowed during periods of high fire hazard
- Clear an adequate firebreak around warming fires or contain in a burn barrel
- Never use gasoline or any liquid fuel to stoke an existing fire
- Keep fires small
- Keep a fire extinguisher and fire-suppression tools readily accessible at any warming fire
- Keep chainsaws and saw fuel at least 10 feet from any open flame or other source of ignition
- Do not engage in horseplay around a fire
- If your clothing catches on fire, remember to "stop, drop, and roll." Do not run. Cover your face with your hands and roll on the ground until all flames are extinguished

Now try the quiz on the next page.

Constantly Look for Hazards within Work Area—Self-Quiz Part 5

1. Can you use signal methods that involve throwing sticks or other objects?

   ☐ Yes

   ☐ No

2. Do you need a designated area on the landing where bucking can be performed safely?

   ☐ Yes

   ☐ No

3. Should you ride a machine or vehicle outside the cab?

   ☐ Yes

   ☐ No

4. Do caulked boots easily slip on metal surfaces?

   ☐ Yes

   ☐ No

5. Does everyone working around a line cutter need to wear eye protection?

   ☐ Yes

   ☐ No

6. Can you use gasoline or saw gas near a fire?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Constantly Look for Hazards within Work Area—Quiz Answers Part 5

1. Can you use signal methods that involve throwing sticks or other objects?

   Answer: **No**

2. Do you need a designated area on the landing where bucking can be performed safely?

   Answer: **Yes**

3. Should you ride a machine or vehicle outside the cab?

   Answer: **No**

4. Do caulked boots easily slip on metal surfaces?

   Answer: **Yes**

5. Does everyone working around a line cutter need to wear eye protection?

   Answer: **Yes**

6. Can you use gasoline or saw gas near a fire?

   Answer: **Yes**

Key Point 3.2: Controls within the Work Zone

Coordination of the worksite

Coordination of the worksite is usually completed and discussed in conjunction with the supervisor. However, if the supervisor is not present, a change that poses risk to workers must be communicated to the supervisor and any workers which may be impacted by the change. Discuss options with the operator(s) to ensure the plan is acceptable.

Some factors to consider:

- Safety implications putting fellow workers at risk
- Environmental implications
- Compliance implications
- Production implications
- Harvest instructions

Worksite preparedness

For the immediate worksite, ensure the following:

- Safe work zone is identified for landing person
- All required materials are at the worksite
- Next road or backend set-up
- Guyline stumps notched and strung ahead
- Yarder pad and landing locations identified and constructed
- Yarder, loader, log truck, and crummy are in the clear

For the next worksite or yarding location, ensure the following:

- Rigging in the backend and setting strung ahead of yarder
- Landing location identified and any modifications required communicated
- Guyline tailholds notched and strung

Directing the crew

Ensure the crew is trained for the task:

- If a member of the crew is a new and young worker, an additional amount of direction and instruction is required to ensure they are trained for the task and expectations are clear.
- Take the initiative to ensure that the worker is competent to safely complete the task.

Make sure the crew is following safe work procedures:

- Correct any unsafe acts or situations immediately.
- Prioritize the work activities for the crew.

Now complete the quiz on the next page.

Controls within the Work Zone—Self-Quiz

1. Ensuring a safe work zone for a landing person is part of worksite preparedness.

   ☐ True

   ☐ False

2. If a member of the crew is a new and young worker, should you take extra time to ensure they are trained for the task and expectations are clear?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Controls within the Work Zone—Quiz Answers

1. Ensuring a safe work zone for a landing person is part of worksite preparedness.

   Answer: **True**

2. If a member of the crew is a new and young worker, should you take extra time to ensure they are trained for the task and expectations are clear?

   Answer: **Yes**

Key Point 3.3: Inspect Worksite for Hazards and How to Eliminate or Control Them

Working around equipment

- Check tools, equipment, and lines daily to ensure their safe operating condition. Keep foreman aware of line conditions
- Check numbers on radio whistles and bugs before using
- Before towering up, ensure all rigging crew members understand their duties and roles. Ensure machine is level for “towering up”
- Use sufficient blocking under tower pad
- While raising the tower, assign one man to watch for the lean of the pipe and possible bight in any of the guylines. Never raise the tower more than two sections on the ram
- When towering down give slack on square lead guys according to the terrain to lay tower into the top of the ram. Keep tower under control at all times by adjusting tension on guylines

Working around guylines and cables

- Be prepared to stop rigging unexpectedly
- Know the proper procedure when hooking and unhooking guylines
- Daily, check guyline stumps and their location relative to pull. Have four guylines behind the pull whenever practical and never less than three
- Space guyline stumps as evenly as possible
- Properly fasten guylines on stumps and clear side binds before tightlining. Flag guylines over roadways and erect a sign stating “Guyline Across Road”
- Clear around guyline stumps to achieve a clean work area
- Back off guyline drums against dogs before yarding. Keep guylines shackled to stump until tower is lowered to proper position
- Never leave guyline shackles in eye splice. Carry them to landing
- When using standing trees as tailholds, tie back these trees using twisters (green wood only). If two men put on the twister, then two men must undo it
- Spool lines on drums correctly using a spooling tool. Never use hands
- Hydraulic line on the ram must be free to spool off the reel

Working around tailholds and backspars

- Select sound tailhold stumps and notch correctly
- Tie back standing timber used as tailhold. Ensure rigging crew is clear of standing tailhold before going ahead on the turn
- Check blocks and straps frequently
- Keep tail blocks brushed out, especially in fire season
- Do not rig dangerous trees or trees with defects
- Ensure backspar is secured by guylines
- Be sure backspar tailhold is in lead with the backspar and yarder
- Ensure all metal spikes are pulled from standing trees

Working in the setting

- Keep crew clear of lines at all times. Ensure no one is in the bight
- Train the rigging slinger to plan his next turn
- Ensure safety of chokermen not directly supervised by rigging slinger, that is, a chokerman going to the landing during yarding
- Ensure that all crew are in the clear before running lines around
- Watch the angle of yarding to reduce the risk of striking equipment with runaways
- Fall all saplings that may reach the landing before starting to log and/or during the rig-up phase
- Watch for dangerous trees on backline and in yarding areas
- Assume brushed logs are full lengths

Grapple yarder hook tender

The grapple yarder hook tender is responsible for all persons in your work area.

- To ensure a safe operation, communicate clearly with grapple yarder operator
- Check each morning that audible signalling devices operate clearly
- Use WorkSafeBC approved verbal signals. If visibility is a problem, the spotter must be near the turn and give the command “close” to close the grapple only, but not to go ahead. Once he is in the clear, give the “go ahead” command to the operator

The concept of “close and hold” must be recognized. When spotting a log that is difficult to see from the clear area, a spotter must use the command “close and hold”, then move to a safe area and say, “close and go ahead”.

Now try the quiz on the next page.

Inspect Worksite for Hazards and How to Eliminate or Control Them—Self-Quiz

1. How often should you check tools, equipment and lines to ensure their safe operating condition?

   - ☐ Twice a day
   - ☐ Daily
   - ☐ Weekly

2. Can you raise the spar more than two sections on the ram?

   - ☐ Yes
   - ☐ No

3. What's the optimal number of guylines behind the pull whenever practical?

   - ☐ Three
   - ☐ Four

4. Can you leave guyline shackles in eye splice?

   - ☐ Yes
   - ☐ No

5. Can you rig a tree with defects?

   - ☐ Yes
   - ☐ No

6. Do you need to ensure that all crew are in the clear before running lines around?

   - ☐ Yes
   - ☐ No

Now check your answers on the next page.

Inspect Worksite for Hazards and How to Eliminate or Control Them—Quiz Answers

1. How often should you check tools, equipment and lines to ensure their safe operating condition?

   Answer: **Daily**

2. Can you raise the spar more than two sections on the ram?

   Answer: **No**

3. What's the optimal number of guylines behind the pull whenever practical?

   Answer: **Four**

4. Can you leave guyline shackles in eye splice?

   Answer: **No**

5. Can you rig a tree with defects?

   Answer: **No**

6. Do you need to ensure that all crew are in the clear before running lines around?

   Answer: **Yes**

Key Point 3.4: Ensure Landings are Organized and Clear of Unnecessary Debris

Ensuring landings are organized and clear of unnecessary debris remove hazards starts with remembering that basic housekeeping on the landing is a primary safety feature.

This includes keeping the landing free of loose materials or debris and other typical hazards, above and below the landing such as:

- Snags that can reach the landing
- Loose or overhanging logs
- Loose rocks or boulders that could roll onto the landing or onto the rigging crew below

Make sure that guylines do not side bind any standing timber, because guyline pressure could cause a tree to fall over and strike a machine or worker on the landing.

Assess the stability of elevated areas around the landing. When a landing is lower than a nearby slope or a gradecut developed to clear the landing site, the elevated areas must be inspected and assessed for hazards.

Remove or secure loose rocks, stumps, logs, and other debris that could roll or slide downhill.

Regularly assess a hillside or gradecut above the landing for slide hazards, especially after a heavy rainfall, a freeze or thaw cycle.

Now try the quiz on the next page.

Ensure Landings are Organized and Clear of Unnecessary Debris—Self-Quiz

1. Is it important to keep the landing free of loose materials or debris?

   ☐ Yes

   ☐ No

2. Do you need to be wary of loose rocks or boulders that could roll onto the landing?

   ☐ Yes

   ☐ No

3. Can guylines side bind any standing timber?

   ☐ Yes

   ☐ No

4. When a landing is lower than a nearby slope, do the elevated areas need to be inspected and assessed for hazards?

   ☐ Yes

   ☐ No

5. After a heavy rainfall, a freeze or thaw cycle, should you assess a hillside for slide hazards?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Ensure Landings are Organized and Clear of Unnecessary Debris—Quiz Answers

1. Is it important to keep the landing free of loose materials or debris?

   Answer: **Yes**

2. Do you need to be wary of loose rocks or boulders that could roll onto the landing?

   Answer: **Yes**

3. Can guylines side bind any standing timber?

   Answer: **No**

4. When a landing is lower than a nearby slope, do the elevated areas need to be inspected and assessed for hazards?

   Answer: **Yes**

5. After a heavy rainfall or a freeze/thaw cycle, should you assess a hillside for slide hazards?

   Answer: **Yes**

Key Point 3.5: Reporting Procedures for All Accidents or Serious near misses

The hook tender's responsibilities for safety include:

- Knowing and enforcing the employer's safety rules and policies
- Knowing and enforcing the Occupational Health and Safety Regulation
- Ensuring that only trained and authorized workers operate machinery, including chainsaws
- Inspecting the worksite for hazards and taking action to eliminate or control them
- Reporting to the supervisor all accidents involving injury to workers and any serious near-misses
- Ensuring that equipment is kept in safe operating condition
- Referring to the employer any worker who is physically or mentally unfit to do the job
- Taking corrective action on reported unsafe conditions and acts
- Using safe work procedures to deal with the hazards encountered
- Ensuring that landings are organized and kept clear of unnecessary debris
- Wearing appropriate personal protective equipment and clothing
- Identifying and informing workers about specific dangers in the workplace
- Setting a good example

Be consistent with safety issues. Do not do an unsafe act after teaching that it is unsafe.

Also know where the first ais kit is at all times and know how to summon first aid for your crew.

No try the quiz on the next page.

Reporting Procedures for All Accidents or Serious Near Misses—Self-Quiz

1. Who is ultimately in charge of safety for the crew?
   - ☐ Foreman
   - ☐ Owner
   - ☐ Chokerperson
   - ☐ Hook tender
2. To whom do all accidents and near misses get reported?
   - ☐ Foreman
   - ☐ Owner
   - ☐ Chokerperson
   - ☐ Hook tender
3. Near misses are reported so crew members can learn from them.
   - ☐ True
   - ☐ False

Now check your answers on the next page.

Reporting Procedures for All Accidents or Serious Near Misses—Quiz Answers

4. Who is ultimately in charge of safety for the crew?
   Answer: **Hook tender**

5. To whom do all accidents and near misses get reported?
   Answer: **Foreman**

6. Near misses are reported so crew members can learn from them.
   Answer: **True**

Section 1026-05: Supervision, Training, and Leadership

What you need to know about this section

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

5.1 Supervise crew in a professional manner in accordance with job requirements

5.2 Think and plan ahead in accordance with block requirements

5.3 Train crew in accordance with job requirements

Key Point 5.1: Supervise Crew in a Professional Manner in Accordance with Job Requirements

Remember the **four Fs** of good supervision:

- Treat people **Fairly**, but **Firmly**
- Be **Friendly** and **Flexible**

Behaviour of leaders

The table below shows both directive and supportive behaviors required in supervising the chokerperson (an entry level position in yarding).

Directive behaviour	**Supportive behaviour**
Sets goals and objectives and clarifies expectations	Encourages, reassures and praises
Plan and organizes work in advance	Listens and provides support
Identifies job priorities	Asks for suggestions or input
Clarifies the leader and employee roles	Explains why
Establishes timelines	Encourages self-reliant problem solving
Determines methods of evaluation and checks work	Makes information about the organization accessible
Teaches employees to do specific tasks	Discloses information about self
Closely supervises progress, monitors and evaluates performance	Encourages team work
	Involves other person in decision-making

Directive style

Directive style ensures safety for the inexperenced workers. It also defines roles and tasks and requires a high level of supervision. Directive is best suited for new or unconfident workers. It is also

useful in emergency situations when a clear and decisive leader is required.

Supportive style

Supportive style motivates the crew to do the task they already know how to do. It clarifies details about roles and tasks, praises and inspires them. Supportive style encourages teamwork and promotes self-worth.

Professional qualities

This picture shows the professional qualities of a supervisor.

The key qualities of being a professional also include the following traits in rigging slingers as they supervise chokerperson:

- Treat others as they would like to be treated
- Exude integrity
- Set the example
- Have humility
- Listen and communicate well
- Encourage the best in people
- Acknowledge others
- Freely delegate and built capabilities (in their staff)
- Multiply talent
- Lead employees to the right answers

Focus on forestry

Within the forest sector, things can change in an instant such as hazards, so be vigilant. Safety is paramount in yarding. You need to be able to make difficult decisions based on the best information you have combined with your experience. However, know your own limitations and acknowledge when you require help. Keep up to date with current knowledge.

You should speak up, not only in praise, but also when you need to say what's uncomfortable to hear. Encourage workers to report on anything that discourages workplace safety and harmony within the team; silence can be deadly. And finally, be available to your staff and always be considerate of those working around you.

Now try the quiz on the next page.

Supervise Crew in a Professional Manner in Accordance with Job Requirements—Self-Quiz

1. For a new worker, which style is best suited?

   ☐ Directive

   ☐ Supportive

2. For emergency situations, which style should be used?

   ☐ Directive

   ☐ Supportive

3. Professional qualities include being able to listen and communicate well, and encouraging the best in people.

   ☐ True

   ☐ False

4. Within the forest sector, things can change in an instant.

   ☐ True

   ☐ False

5. Should you encourage workers to report on anything that discourages workplace safety and harmony within the team?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Supervise Crew in a Professional Manner in Accordance with Job Requirements—Quiz Answers

1. For a new worker, which style is best suited?

   Answer: **Directive**

2. For emergency situations, which style should be used?

   Answer: **Directive**

3. Professional qualities include being able to listen and communicate well, and encouraging the best in people.

   Answer: **True**

4. Within the forest sector, things can change in an instant.

   Answer: **True**

5. Should you encourage workers to report on anything that discourages workplace safety and harmony within the team?

   Answer: **Yes**

Key Point 5.2: Think and Plan Ahead in Accordance with Block Requirements

You need to be able to demonstrate ability to think and plan ahead in accordance with block requirements.

Man in Charge Concept

The Man in Charge concept is to ensure there is a person in a leadership role within the worksite that will take charge, execute the plan, and direct employees throughout the work shift. This is the role of the hook tender.

Man in charge responsibilities

Always lead by example. Remember the following points:

- You are a role model, always set a high standard for the side you direct
- Never walk by an unsafe act or condition
- Walk the talk
- Communicate with the Supervisor and the entire crew. Let them know how the plan is working and what is coming up
- Be positive. Negativity can bring down the morale of a crew, especially if that is the example set by the leader

The hook tender is responsible for the following:

- Rigging slinger
- Landing crew
- Visitors
- Safety of the entire crew
- Production
- Machinery
- Everything else on the site

Planning Ahead

The hook tender needs to be thinking at least three days ahead, have a back-up plan for everything, solve problems, and do road changes one to six times a day. This includes the following considerations:

- Prepping stumps
- Rigging strawline
- Packing and setting up blocks and straps
- Setting chokers once in a while
- Eating whenever he can

Think and Plan Ahead in Accordance with Block Requirements—Self-Quiz

1. As the man in charge, does the hook tender need to communicate to crew members how the plan is working and what is coming up?

   ☐ Yes

   ☐ No

2. Is it important for the hook tender to remain positive?

   ☐ Yes

   ☐ No

3. Is the hook tender responsible for everything on the site, including safety of the entire crew and visitors?

   ☐ Yes

   ☐ No

4. How many days does the hook tender need to plan ahead?

   ☐ 1 day

   ☐ 2 days

   ☐ 3 days

5. Is the hook tender responsible for road changes?

   ☐ Yes

   ☐ No

Now check your answers on the next page.

Think and Plan Ahead in Accordance with Block Requirements—Quiz Answers

1. As the man in charge, does the hook tender need to communicate to crew members how the plan is working and what is coming up?

   Answer: **Yes**

2. Is it important for the hook tender to remain positive?

   Answer: **Yes**

3. Is the hook tender responsible for everything on the site, including safety of the entire crew and visitors?

   Answer: **Yes**

4. How many days does the hook tender need to plan ahead?

   Answer: **3 days**

5. Is the hook tender responsible for road changes?

   Answer: **Yes**

Key Point 5.3: Train Crew in Accordance with Job Requirements

You need to be able to demonstrate knowledge ability to train the crew in accordance with job requirements.

How to train

What do good trainers do well?

- Know your audience and how much they know
- Know your subject matter and admit what you don't know
- Set the right tone and use the right style
- Keep control of the topic, of the time, and of the people
- Engage the learners, keep them active, and show how it affects them in the real world. Use stories and get their input
- Be clear. It's all about communication

In training the crew, you must communicate effectively. Here are additional points:

- Be clear and consistent about where you're working when dealing with safety. Telling someone not to do an unsafe act, then doing it yourself is being inconsistent. Set a good example
- Plan things out effectively for all crew members and different phases of logging that will be coming through. If directions are not followed, it will bottle neck somewhere and we could run into a snag
- It is important to listen and follow directions; there are times when this is imperative and the hook tender needs to be able to trust that the crew will do what is asked

Be specific

Being specific means:

- Describing the task (what is to be done)
- Stating the purpose (why is it to be done)
- Describing the end state (how it should look when it is done)

Be clear in your communication of the task to be done, the purpose for which the task is done, and the end result that is expected.

In team work, the characteristics of high-performing teams as a result of good training are the following:

- People trust each other and feel respected
- Everybody is working toward the same goals
- Team members know how to accomplish tasks, their roles, and expectations.

- Everyone has a voice, and gets a chance to contribute during discussions
- Disagreements are managed, and are constructive. They are viewed as opportunities for problem-solving
- The team makes decisions when there is natural agreement – otherwise decisions are made by supervisors or managers. Decisions are respected
- Leaders are flexible, and make changes to drive results
- No individual members are more important than the team

Train Crew in Accordance with Job Requirements—Self-Quiz

1. Is it paramount to be clear and consistent when dealing with safety?

   ☐ Yes

   ☐ No

2. A good trainer knows the subject, but also admits what he doesn't know.

   ☐ True

   ☐ False

3. To be an effective trainer, you must keep control of the time, the people, and the topic.

   ☐ True

   ☐ False

4. In describing the task, it answers which of the following questions:

   ☐ What is being done

   ☐ Why it's being done

5. In stating the purpose of the task, it answers which of the following questions:

   ☐ What is being done

   ☐ Why it's being done

6. Is it important to describe the end state of the task?

   ☐ Yes

   ☐ No

7. A good leader is flexible, and will make changes to drive results.

   ☐ True

   ☐ False

Now check your answers on the next page.

Train Crew in Accordance with Job Requirements—Quiz Answers

1. Is it paramount to be clear and consistent when dealing with safety?

   Answer: **Yes**

2. A good trainer knows the subject, but also admits what he doesn't know.

   Answer: **True**

3. To be an effective trainer, you must keep control of the time, the people, and the topic.

   Answer: **True**

4. In describing the task, it answers which of the following questions:

   Answer: **What is being done**

5. In stating the purpose of the task, it answers which of the following questions:

   Answer: **Why it's being done**

6. Is it important to describe the end state of the task?

   Answer: **Yes**

7. A good leader is flexible, and will make changes to drive results.

   Answer: **True**