



Unit	1068
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Unit Introduction

What you will learn in this unit

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

- Hand signals
- Blasting signals
- Yarding signals
- Loading and hauling signals

Why it's important for you to learn this unit

Communication is a key component of safety. You must understand the various types of signals used in forestry operations including verbal, hand and audible signals.

Are you ready to take this unit?

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

- [1002 – Describe Forest Industry](#)

Does this unit apply to you?

- All yarding occupations
- All mechanized harvesting occupations

Section 1068-01: Hand and Blasting Signals

What you will learn in this section

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

- 1.1 Hand signals in accordance with OHSR table 26-7
- 1.2 Blasting signals used in forestry

Key Point 1.1: Hand signals in accordance with OHSR table 26-7

Hand signals for cable logging

The following are the hand signals in accordance with OHSR table 26-7:

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

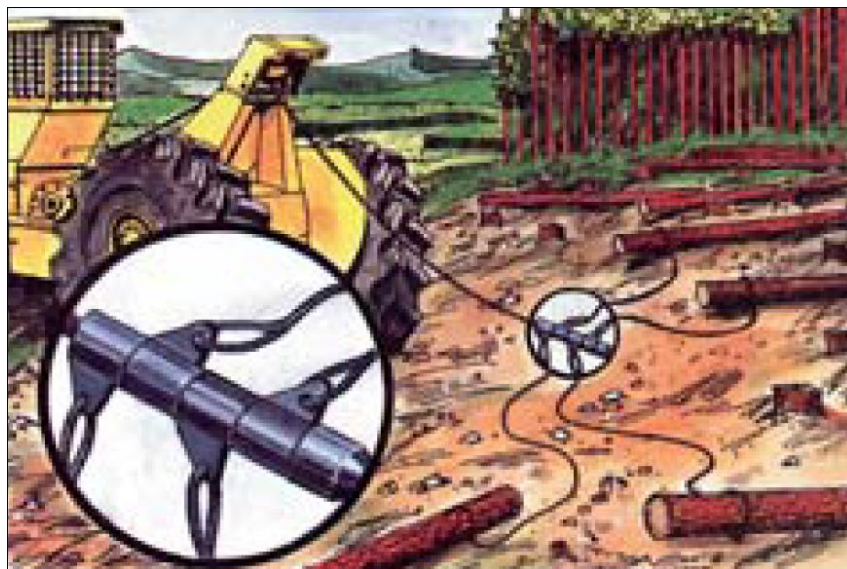


Ahead on strawline

- Touch hand to bent elbow



Hand signals for line skidding



Back up the tractor

- Rotate the hand



Back in tractor

- Slap butt



Tractor to head in

- Put fingers on top of the head



Where chokers are to be dropped

- Hooker faces in direction tractor is to stop and stands where chokers are to be dropped
- Indicates what is to be done by swinging both hands in front, hands open with thumbs up



Use upper winch

- Pat back of wrist with palm of other hand
- Followed by standard signals



Ahead on mainline

Slack mainline to unhook choker

- Wave hand extended, palm down

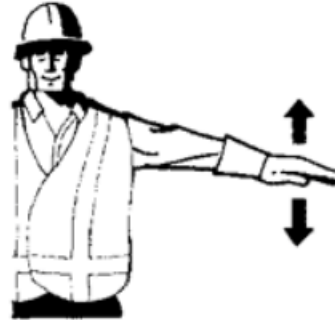


Stop any moving line and hold

Stop tractor

- Hold one hand out with palm down



Go ahead on tractor

Now try the self-quiz on the next page.

Hand signals in accordance with OHSR table 26-7—Self-Quiz

1. Which hand signal does the diagram below represent?



- Cable down
- Cable up
- Mainline ahead slow

2. Which hand signal does the diagram below represent?



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

3. Which hand signal does the diagram below represent?



- Tightline
- Slack mainline easy
- Ahead on strawline

4. Which hand signal does the diagram below represent?



- Go ahead on tractor
- Stop tractor
- Ahead on mainline

5. Which hand signal does the diagram below represent?



- Slack mainline
- Stop tractor
- Stop and hold any moving line

6. Which hand signal does the diagram below represent?



- Ahead on mainline
- Back up the tractor
- Go ahead on tractor



Now check your answers on the next page.

Hand signals in accordance with OHSR table 26-7—Quiz Answers

1. Which hand signal does the diagram below represent?



Answer: **Cable up**

2. Which hand signal does the diagram below represent?



Answer: **Slack strawline**

3. Which hand signal does the diagram below represent?



Answer: **Slack mainline easy**

4. Which hand signal does the diagram below represent?



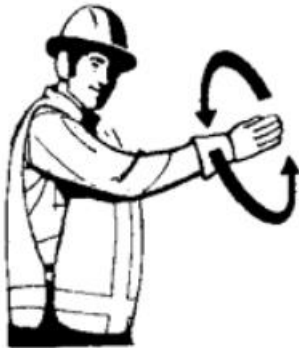
Answer: **Stop the tractor**

5. Which hand signal does the diagram below represent?



Answer: **Stop and hold any moving line**

6. Which hand signal does the diagram below represent?



Answer: **Back up the tractor**

Key Point 1.2: Blasting signals used in forestry

This key point covers blasting signal requirements as outlined in the Occupational Health and Safety Regulation in Part 21 Blasting Operations.

Blasting signals

The blaster must ensure that an audible signaling device, distinct from other signaling devices in the area, is used to give the following warning signals:

1. Preceding the blast, 12 short whistle signals must be sounded at one second intervals.
2. Two minutes must elapse after the last warning signal before initiating the blast.
3. Following the blast and after the area has been inspected and found safe, one prolonged whistle signal of at least 5 seconds duration must be sounded, to signify that permission is granted to return to the blasting area.

Posting warning procedures

The employer must ensure that the blasting signals to be used at the workplace are posted conspicuously at each blasting operation and workers must be instructed in this information.

Blasting signals used in forestry—Self-Quiz

1. What is the signal that is done before blasting can be started?
 - One prolonged whistle signal of at least 5 seconds
 - 5 long whistle signals sounded at one second intervals
 - 12 short whistle signals sounded at one second intervals
 2. What is the signal for permission to return to the blasting area?
 - One prolonged whistle signal of at least 5 seconds
 - 5 long whistle signals sounded at one second intervals
 - 12 short whistle signals sounded at one second intervals
-



Now check your answers on the next page.

Blasting signals used in forestry—Self-Quiz Answers

1. What is the signal that is done before blasting is started?

Answer: **12 short whistle signals sounded at one second intervals**

2. What is the signal for permission to return to the blasting area?

Answer: **One prolonged whistle signal of at least 5 seconds**

Section 1068-02: Yarding, Loading and Hauling Signals

What you will learn in this section

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

- 2.1 Yarding signals
- 2.2 Loading and hauling signals

Key Point 2.1: Yarding signals

This key point covers the audible yarding signals (whistles) and the verbal commands given to a grapple yarder operator when they are not able to see the next turn of logs.

Yarding signals

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

The yarding crew needs to know the difference and limitations between VHF signals and UHF commands. The yarding crew also needs to know the action that will result from the signal being acted upon by the operator. For example, when the signal for “slack the mainline” is given, the yarding crew needs to know that the rigging will start to drop and that he should move out of the way.

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:

- 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.

- 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
- 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

Verbal radio communication have mainly replaced non-verbal signals (whistles and hand signals) for the movement of equipment in cable yarding. 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.

Verbal signals are derived from the following whistle signals:

- Audible high-lead signals
- Audible slackline signals
- Skyline carriage 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	— •
<ul style="list-style-type: none"> • Any regular signal preceded by a long signal is a “slow” signal. • Any signal that the operator 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		
<ul style="list-style-type: none"> • “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		
<ul style="list-style-type: none"> 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	••
<ul style="list-style-type: none"> When the haulback is used as a running skyline, standard high-lead signals apply. 		
Radio-controlled motorized self-contained yarding carriage		
<ul style="list-style-type: none"> 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		
<ul style="list-style-type: none"> • 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		
<ul style="list-style-type: none"> • 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

Watch the “Cable logging whistle signals for standing skyline operation” video at <https://www.youtube.com/watch?v=i0ngr5wCh1E> to learn more about yarding whistle signals.

Use of standardized verbal commands for grapple yarders

Crew will press the transmit button to tell the operator to start slowing down. It makes it easier to get the grapple on a log in a safe and timely manner.

To instruct operator to	Signaller says
Grapple log and go ahead	Close and go
Close grapple but not go ahead	Close and hold
Stop rigging	Stop
Open grapple	Open
Move empty grapple ahead	Ahead
Move empty grapple back	Back
Go ahead on strawline	Ahead on the strawline
Slack mainline	Mainline
Slack haulback	Haulback
Lower grapple	Down
Slack strawline	Slack strawline
Swing to operator's left	Swing left
Swing to operator's right	Swing right
Hold haulback and go ahead on mainline	Tightline

If at all possible, give the operator notice of what you want ahead of time. Have second or third log to go for if you miss the first one.

Standard high lead signals are used when setting chokers off the grapple yarder. The hooker or spotter just converts them to voice commands. For example, tell the operator "go ahead" when the choker is set, you're in the clear, and you want the operator to go ahead on the turn.

Now try the self-quiz on the next page.

Yarding signals—Self-Quiz

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

<input type="checkbox"/> Stop any movement	<input type="checkbox"/> 3 short, 1 short, ••••
<input type="checkbox"/> Slack the haulback	<input type="checkbox"/> 2 short, 2 short, 2 short, 1 short, •• •••••
<input type="checkbox"/> Ahead* on Strawline	<input type="checkbox"/> 1 short, •
<input type="checkbox"/> Pick up the guyline	<input type="checkbox"/> 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.

<input type="checkbox"/> Chokers required	<input type="checkbox"/> 3 long, several short, — — — ••• •
<input type="checkbox"/> Calling foreman	<input type="checkbox"/> 1 long, 1 short, — •
<input type="checkbox"/> Calling hooktender and crew	<input type="checkbox"/> 2 short and 1 short or long for each choker required, •••••
<input type="checkbox"/> Calling for block and strap	<input type="checkbox"/> 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. The correct verbal command to give the grapple yarder operator when you want them to grapple the log and go is:

- Close

- Haulback
 - Close and go
6. When a hooktender gives the verbal command “Swing Left” is the operator to swing the grapple to his/her left or to the hooktender’s left?
- Operator’s left
 - Hooktender’s left
-



Now check your answers on the next page.

Yarding signals—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, •••••

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. The correct verbal command to give the grapple yarder operator when you want them to grapple the log and go is:

Answer: **Close and go**

6. When a hooktender gives the verbal command “Swing Left” is the operator to swing the grapple to his/her left or to the hooktender’s left?

Answer: **Operator’s left**

Key Point 2.2: Loading and hauling signals

This key point covers the signals and communications used when log trucks are being loaded.

On the block, only the posted radio frequency is to be used between loader and truck.

Audible signals must be given before moving mobile equipment:

- One blast of horn to stop
- Two blasts of horn to back up
- Three blasts of horn to move ahead

All truck drivers must be in view, in the clear, or their whereabouts known before the equipment or logs are moved. The driver should be in the cab or stand in a visible, safe location (in front of the truck) during the loading process and ensure the load is properly placed onto the truck and trailer. The truck driver will notify the loader operator immediately of any issues over the radio.

A distinctive signal to indicate load is finished should be used. Using a radio instead of audible signal is acceptable; always receive confirmation of any communication.

When working in proximity to others:

- Persons wishing to approach an operating machine must receive a visual sign from the operator before approaching
- When working adjacent to traveled areas there must be a positive means of traffic control
- Operators must ensure that all workers are clear of the hazardous area before loading

Watch the [Log Loading Safety – It's Everyone's Responsibility](https://www.youtube.com/watch?v=EULfb0wHnQw) video at <https://www.youtube.com/watch?v=EULfb0wHnQw> to see what can happen when there is poor communication between a log truck driver and loader operator.



Loading and hauling signals— Self-Quiz

1. What does one horn blast signal?
 - Back up
 - Go ahead
 - Stop
 2. Where is a safe location for the driver when the truck is getting loaded?
 - Beside the load
 - In the cab
 - Opposite side of the load
-



Now check your answers on the next page.

Loading and hauling signals— Quiz Answers

1. What does one horn blast signal?

Answer: **Stop**

2. Where is a safe location for the driver when the truck is getting loaded?

Answer: **In the cab**