

Unit	1004
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BC Forest Safety

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Unit Introduction

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

- Verbal communication
- Signage used in the Forest Industry

Section 1004-1: Verbal Communication

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 Resource road communication
- 1.2 Hazard communication
- 1.3 Emergency communication
- 1.4 Communication hazards

Key Point 1.1: Resource Road Communication

Note: This key point covers resource road channels and related protocols. Operational or work channels (used for safety checks and operational conversations within the worksite) are not covered here.

Resource Roads

Resource roads are typically gravel roads built one or two lanes wide to access natural resources in remote areas. They are:

- Constructed to develop, protect, and access natural resources
- Used primarily by industrial vehicles engaged in forestry, mining, oil & gas or agricultural operations
- Used by the general public and commercial operators, such as ski hills or fishing lodges
- Not built or maintained to the same standards as public highways

Before entering a resource road, it is important to understand the following:

- Radio frequencies/channels
- Road name and kilometer markers
- Radio protocols specific to the resource road

Resource Road Channels

Resource road channels are designated for transmitting and receiving traffic control information between radio-equipped vehicles on resource roads. Resource road channels are location specific.

Resource road channels are supported by a standard bank of radio channels that allow road users to travel on any resource road in British Columbia, assured that they have the required road channel available on their radio at all times.



Figure 1: Examples of resource road channel signs

Signs posted on local resource roads will advise which radio channels to use and what the communication protocols are. The posted signs will include the road name and required calling intervals. Vehicle operators using mobile radios to communicate their location and direction of travel must use the posted radio channels and call protocols while driving on the resource road.

Road users need to understand that forest service roads and most resource roads are not radio controlled but are radio assisted. Road users should drive safely according to the road conditions and weather.

Expect to meet vehicles that are not equipped with radios or are not communicating their location on the road.

Radio Procedures

Direction of travel on resource roads is defined by using “up” or “down” terminology. A vehicle is travelling in the “up” direction when the numbers on the kilometer signs are increasing. A vehicle is travelling in the “down” direction when the numbers on the kilometer signs are decreasing.

Unless directed otherwise by a sign posted on the road, drivers using a radio must call:

- when starting, stopping, entering or leaving a road
- when at “must call” signs
- every 2 km, on the even kilometer

A convoy is a group of vehicles that are traveling together. When in a convoy:

- the lead vehicle is responsible for calling for all vehicles in the convoy
- it is the responsibility of a vehicle joining or leaving the convoy to inform the lead vehicle and to receive confirmation that the message is understood
- empty or loaded if there is a specialized over-sized load
- the operator must also announce vehicle type and information as indicated on the sign. For example, “Fuel Truck - Eve River - 12 km - Up”

Note: There is no need to call if you are part of a convoy called by the lead vehicle within 1 km.

Road channel frequency check

When entering and working on resource roads, you must complete the following road channel frequency checks:

1. Check your radio frequency list and switch to the frequency that is posted at the entrance to the active logging road.
2. Monitor and check for frequency traffic and logging truck movement before proceeding.

3. Confirm your selection by calling someone before you enter the road. For example, “Pick-up truck – Eve River – 0 km – anybody close”? It is important to be familiar with the calling procedures used on the road being used. You must “clear the road” when you leave the radio advisory portion of the road.
4. Listen carefully to all traffic you hear.
5. Shut off all other radios and limit conversations.



CAUTION!

If you do not know the frequency used in an active logging area, DO NOT enter the area. Contact the licensee or contractor for information on the frequency used on that road.

Do not scan road channels.

Radio call procedure

Unless otherwise directed by a sign posted on the road, operators using a radio must call:

- when entering onto a Resource Road (RR) or onto any signed spur roads. A spur road is a short road branching off from a longer road
- at a “Must Call” sign

For example, every 2 km, on the even kilometer.

The operator must also announce vehicle type and information as indicated on the sign. For example, “Fuel Truck - Eve River - 12 km - Up”.

Every vehicle must call their location unless they are part of a convoy.

“Must Call” calling procedures

The “Must Call” protocols for both empty and loaded vehicles travelling on resource roads include calling:

- when entering or leaving a road system
- at posted “must call” signs
- whenever there is a road frequency or channel change
- whenever encountering a vehicle traveling without a radio

Convoy calling

The protocols for calling when travelling in a convoy on resource roads includes the following:

- the lead vehicle is responsible for calling for all vehicles in the convoy
- it is the responsibility of a vehicle joining or leaving the convoy to inform the lead vehicle and to receive confirmation that the message is understood
- convoys can be no more than 1 km long

An example of calling for a convoy is “Holy Cross Mainline 5 km Up for 5”.

Note: A vehicle more than 1 km behind the lead vehicle is no longer part of that convoy and must call its own position.

Avoid distractions

Avoid distractions while on resource road channels. This includes:

- not making unnecessary radio chatter
- avoiding noise distractions such as AM/FM radios, phones, music, etc.
- avoiding distractions that prevent you from controlling your vehicle like eating and looking at maps while driving
- avoiding loud or intense conversations with passengers that will distract you from hearing radio calls
- eliminating distractions and staying focused on the radio and driving
- staying on designated road channel at all times while traveling

Guidelines for Safe Travel on Resource Roads

Observe the following guidelines when travelling on resource roads.

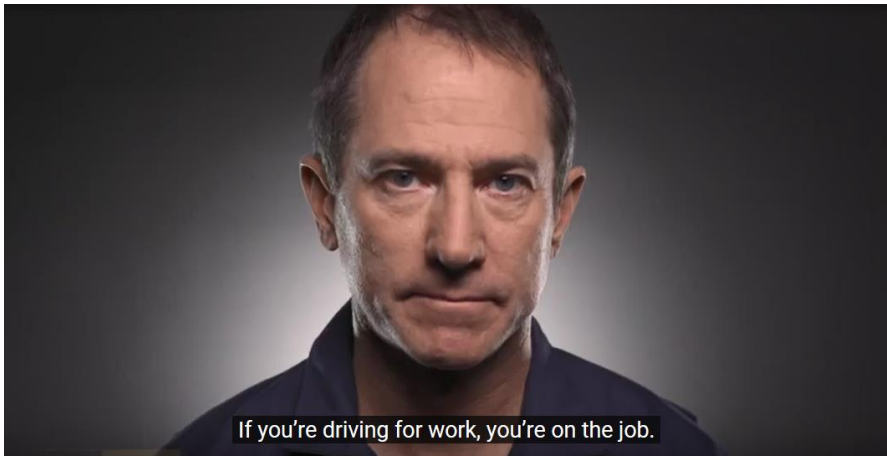

1. Vehicles travelling “down” have the right of way
2. The maximum speed on a resource road is 80km/h, unless otherwise posted.
3. Travel to the road conditions and if unfamiliar with the road, slow down.
4. Be aware of industrial, commercial, and recreational traffic. For example, a pickup travelling in the down direction must yield to a loaded lowbed coming in the up direction.
5. Roads are two-way radio assist, not radio-controlled.
6. Yield to industrial traffic and use turnouts.
7. Stay alert and obey traffic signs.
8. Use seatbelts.
9. Never pass another vehicle without notifying the driver on the radio and receiving permission to do so.
10. Slow down and stay on your side of the road when driving around corners and other areas with limited sight lines.

Go to the BC Forest Safety website and read about some real life examples related to driving and radio use at

<https://www.bcforestsafes.org/node/3288>.

If you’re driving for work, you’re on the job

Motor vehicle incidents are a leading cause of worker fatalities in British Columbia. “If you’re driving for work, you’re on the job” is a video portraying employer responses to motor vehicle incidents, emphasizing the emotional impact on employers, workers, and their families.

	
	<p>Watch the video "If you're driving for work, you're on the job"</p> <p>https://trn.bcforestsafe.org/mod/url/view.php?id=1381</p>



Learning Point

You are travelling on a resource road and you come across a public vehicle with no radio.
What should you do?

Key Point 1.2: Hazard Communication

Site-specific Written Procedures for Workplace Hazards

Employers must establish written site-specific procedures addressing workplace hazards before commencing operations.

Methods to communicate hazards may include the following:

- Harvesting plan
- Initial safety meeting
- Changes to the workplan documentation

All workers in the area must be made aware of the existing or potential hazards and the means to control them.

Harvesting Plan

The supervisor or prime contractor conducts an initial walk through the area to complete the following:

1. Assess the terrain and general hazards.
2. Conduct hazard assessment to identify potential hazards.
3. Prepare for the initial safety meeting with crew and any sub-contractors.
4. Create a plan for safe harvesting based on the harvesting method.

Initial Safety Meeting

At the initial safety meeting, the supervisor, workers and planner, if required, must review the harvesting plan map and discuss the following:

- Harvesting plan objectives
- Hazards identified on worksite including specific hazards such as hollow stems, rot or burnt timber that require specific safe work procedures
- Worksite map
- Placement of workers and equipment
- Emergency Response Plan including First Aid coverage
- Problem areas or specific hazards
- Special procedures required. For example, weather shutdown criteria
- Other phases or operations in the area

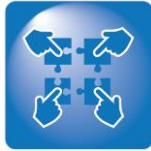
Communicating Hazards that cannot be Immediately Dealt With

Hazards that cannot be immediately dealt with must be identified on the map and communicated to the supervisor and other workers.

The procedure for dealing with the hazards that cannot be immediately dealt with is as follows:

1. Establish methods for controlling the hazard. For example, create a No Work Zone around the area using flagging tape to ribbon off the area or high visibility paint to mark the hazard.
2. Notify the supervisor.
3. Notify other workers who may be affected by the hazard.
4. Mark on the map.
5. Provide information for hazard report if applicable.

Learner Activity



Learner Activity

Identify the missing steps in creating a no work zone procedure.

- | |
|---|
| 1. Establish methods for controlling the hazard. <ul style="list-style-type: none">• For example, create a No Work Zone around the area using flagging tape to ribbon off the area or high visibility paint to mark the hazard. |
| 2. |
| 3. Notify other workers who may be affected by the hazard. |
| 4. |
| 5. Provide information for hazard report if applicable. |



Now check your answers on the next page.

Answer

1. Identify the missing steps in creating a no work zone procedure.

- | |
|--|
| <p>1. Establish methods for controlling the hazard.</p> <ul style="list-style-type: none">• For example, create a No Work Zone around the area using flagging tape to ribbon off the area or high visibility paint to mark the hazard. |
|--|

<p>2. Notify the supervisor.</p>

<p>3. Notify other workers who may be affected by the hazard.</p>

<p>4. Mark on the map.</p>

<p>5. Provide information for hazard report if applicable.</p>
--

Key Point 1.3: Emergency Communication

A forestry worker in distress should make use of any means at their disposal to attract attention to make their position known and receive assistance. This may include using a whistle or a radio.

Whistle

A common safety practice among fallers and field workers is to carry an emergency whistle, attached to an easy-to-reach spot on your clothing such as your high visibility vest harness or your suspenders. You must be able to reach it with your mouth in case your arms are pinned or injured in an accident.

If you sustain a serious injury and need help from a co-worker nearby, using the whistle may be the only way to get their attention. The shrill sound of the whistle is clear and can be heard much farther than your voice.

What to do when you hear a whistle

If you hear a whistle:

1. **Stop** work immediately.
2. Call the First Aid attendant.
3. Go in the direction of the sound and be prepared to offer first aid.
4. Approach cautiously as there may be unidentified hazards.

Radio

If using a two-way radio, keep it readily accessible and check it regularly to ensure it is working. Radios are not a substitute for a functioning man-check system. The batteries might be dead or transmission mode may be faulty. If you are seriously hurt, the radio could be crushed, unusable, or flung away from you.

Make sure the radio is fully charged at the start of the day. Replace batteries that are worn out and not holding a charge.

Know the limitations of the radio, its maximum range, and potential dead zones.

Safe work procedure for radio use

Safe work procedure for radio use is as follows:

1. Check radio before beginning work.
2. Re-check radio at workplace site.
3. Follow established check-in procedures.
4. Radio check with First Aid at predetermined intervals.



IMPORTANT!

If radio stops functioning, stop work until radio communication can be re-established.

Radio Distress Call

When you hear a distress call, allow time for anyone nearby to respond. If you do not hear an acknowledgement, respond accordingly, depending on the situation.

What to do with a distress call when your assistance is needed

When a distress call requires your assistance, do the following:

1. Stop working, listen to the radio, and acknowledge the call.
2. Render assistance as directed.
3. Move safely in direction of the injured worker while being aware that hazards may still exist.
4. Know the location and what is required to support the Emergency Response Plan (ERP).
5. If possible, someone at the incident scene should stay close to the radio to maintain communications with office or emergency responders.

What to do with a distress call when your assistance is NOT needed

When you hear a distress call and your assistance is not needed, do the following:

1. Stop working.
2. Stand by radio in case help is required.
3. Maintain radio silence.

Radio Silence During an Emergency

During an emergency, avoid unnecessary chatter and stay silent to give priority to the emergency call. In the case of an injury or fatality, do not state the name of the individual over the radio.



IMPORTANT!

In an emergency, it is important that workers stop regular duties to reduce radio traffic and potential for additional injuries to occur.

Signaling Control

Workers are at risk of injury or death if hazards exist when operating, maintaining, or working around heavy equipment. Hazards include workers being:

- hit by moving equipment
- crushed between the equipment and another object, or by equipment tipping over
- struck by an inadequately secured load while it is being lifted or moved

Incidents can be prevented by operating equipment and if required, with the help of a signaler. OHS Regulation Section 26.34 describes the requirements for the types of workers who can act as a signaler and their responsibilities.

[Read OHS Regulation section 26.34](#) thoroughly as you are required to know it if used in your work environment.

Most directions are given by spoken word via radios. All workers must agree on non-verbal signals if they are used. If whistles and hand signals are used to direct the operation of equipment, the signals specified in OHS Regulation 26.34 Tables 26-1 to 26-7 must be used. The tables are described as follows:

- Table 26-1 Audible call signals
- Table 26-2 Audible signals for vehicle operations
- Table 26-3 Audible signals for high lead logging
- Table 26-4 Audible signals for slackline logging
- Table 26-5 Audible signals for mechanical slack pulling and drop line carriages on skyline yarders or running skyline yarders (as applicable)
- Table 26-6 Requirements for radio controlled carriages
- Table 26-7 Hand signals

Review Table 26-1 to Table 26-7 , as you are required to know them if they are used in your work environment.

Key Point 1.4: Communication Failure

Planning the work area provides the groundwork for safe activities. Hazards can be reduced through good planning, communication, and cooperation amongst workers and the supervisor.

Causes of Communication Failure

Conditions at a worksite change and communication is key to keeping everyone on the worksite safe from harm. Make sure to communicate:

- a hazard
- changes to the work plan
- between phases on the worksite

How to Control Communication Failure

Controls should be in place to ensure that safe communication is a priority on the jobsite.

Some controls include:

- an initial safety meeting
- daily update meetings on the site
- a daily process to ensure communication system is working and the workers know the dead zones and call out locations
- frequent communication with everyone on site including signage for permission to enter the work area

Section 1004-2: Signage

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 Resource road signs

2.2 Active area signs

Key Point 2.1: Resource Road Signs

A resource road is a road or portion of a road on Crown land, private land and/or timber land area off highway. Signs on resource roads are generally posted in accordance with company policy and the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD) as well as the BC Oil & Gas Commission.

Road Signs Found on Resource Roads

Generally, road signs are not found on roads or highways travelled by the general public, rather they are found on resource roads.

Road signs can indicate a change in radio channels.



Figure 2: Resource road signs: kilometer marker call sign (left), forest service road orientation sign (centre) and Must Call sign (right)

Radio channel signs

A radio channel sign is posted at the beginning of the resource road. It identifies the resource road channel and indicates the frequency to be used for the resource road.

They contain the following:

- A - local channel name
- B - frequency (MHz)



Figure 3: Radio channel sign

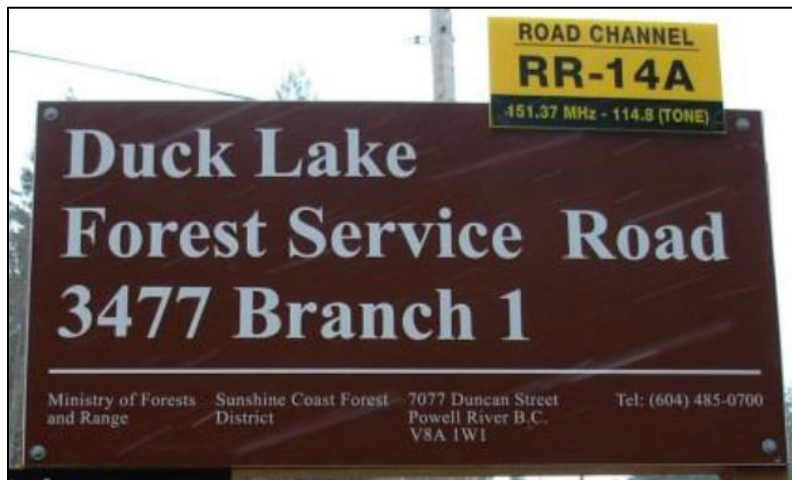


Figure 4: A forest service road sign showing the radio channel

Kilometer signs

Kilometer signs measure distance and are installed every kilometer in both directions on the road.

The kilometer signs indicate the following:

- road name
- kilometer number
- direction of travel



Figure 5: Kilometer sign showing side A and side B with road name, kilometer number and direction of travel

“Must Call” signs

Must Call signs are placed in strategic locations that require operators to announce their location when entering onto another road, or other identified locations. They are installed in high hazard areas such as where radio reception or sight distance is reduced, when approaching bridges and where drivers must switch to a different road channel.



Figure 6: A “Must Call” sign showing radio channel and direction of travel

Radio call points

A radio call point sign provides guidance for road radio call protocols at the beginning of the road or where call protocol may vary.

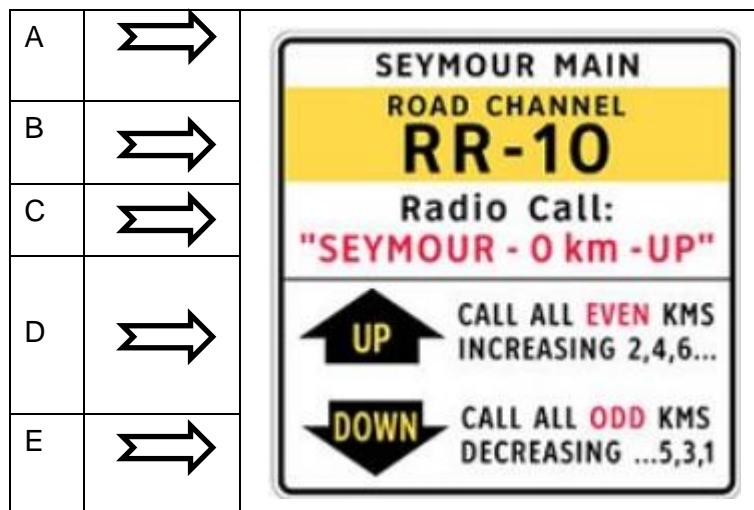


Figure 7: Radio call points sign

A radio call point sign indicates the following:

- A - Name of the forest service road
- B - Road channel name or RR channel number (no frequency (MHz) or tone)
- C - Radio call content and order
- D - Radio call pattern or frequency for the “up” direction
- E - Radio call pattern or frequency for the “down” direction

Key Point 2.2: Active Area Signs

An active work area is an area within a worksite in which work activity is occurring that may have the potential to cause risk to others entering the area.

Signage is used to control access to an active work area. For example, a faller's active work area is defined as 2 tree-lengths from other workers and an active falling area sign must be used to control access.

Activities that require active area signs include:

- Falling activities
- Blasting
- Helicopter landing areas
- Machinery working
- Men working
- Seismic crew
- Seismic crew ahead active falling area

Other signs that may indicate that you should not enter or stay clear of the area include:

- Wildfire area
- Environmental spill or sensitive areas
- Explosive storage
- Hazard zones



Figure 8: Active falling area

A falling area is the working area of the faller identified by:

- Signage
- Signage, barricades and flagging

ACTIVE WORKSITE

The BC Wildfire Service is conducting fire suppression activities in this area.

All personnel and authorized visitors *must* obtain a safety briefing before proceeding.


Contact Information

Radio ground channel: _____

Radio repeater: _____

Radio road frequency: _____

Contact person: _____



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PS 1434 NDPK 11/2015

Figure 9: Active wildfire area



Figure 10: Blasting signs



Figure 11: Call for clearance



Figure 12: Do not enter



Figure 13: Environmental signs



Figure 14: Explosive storage



Figure 15: Hazard zones



Figure 16: Helicopter landing areas

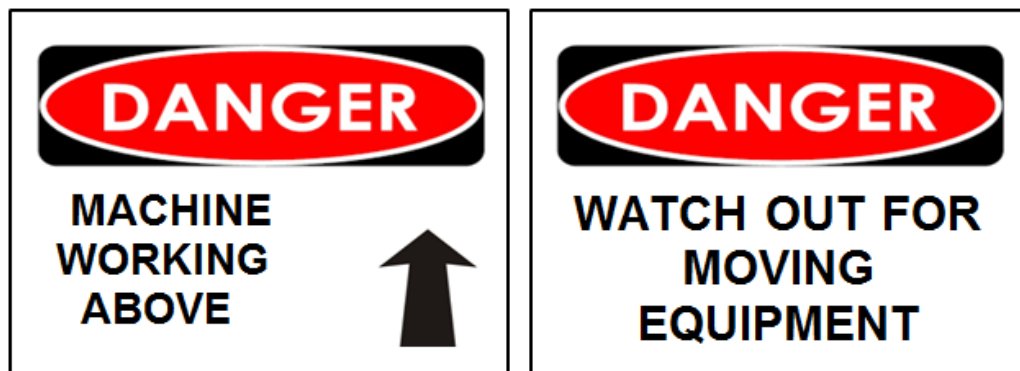


Figure 17: Machinery working



Figure 18: Men working above



Figure 19: Prime contractor signs



Figure 20: Seismic crew ahead

Additional resources for signage can be found on The Ministry of Forests, Lands and Natural Resource Operations website: [Resource Road Engineering Standards & Guidelines - Province of British Columbia](#).

Self-Quiz

1. What is the maximum distance behind the lead vehicle that another vehicle can be travelling and still be considered part of the convoy for communication purposes? (1004.1.1)
 - ☐ 250 m
 - ☐ 500 m
 - ☐ 1 km
 - ☐ 2 km
2. Who is responsible for communicating hazards to workers in a new work area? (1004.1.2)
 - ☐ Worker
 - ☐ Supervisor
 - ☐ Prime contractor
 - ☐ Licensee
3. What should NEVER be communicated over the radio in the case of an injury or fatality? (1004.1.3)
 - ☐ Location of incident
 - ☐ Name of worker involved
 - ☐ Type of injury
 - ☐ Seriousness of injury
4. What change should be communicated immediately? (1004.1.4)
 - ☐ Tools
 - ☐ Workplan
 - ☐ Shift
 - ☐ Work hour
5. What three things should a driver know before entering a resource road? (1004.2.1)
 - ☐ Radio frequency/channels, road name, calling procedure
 - ☐ Road name, calling procedure, land owner
 - ☐ Radio frequency/channels, land owner, mainline or secondary
 - ☐ Calling procedure, mainline or secondary, licensee

6. What content is included on an active area sign? (1004.2.2)

- ☐ Instruction, who to call, radio frequency
- ☐ Kilometer, direction, who to call
- ☐ Direction instruction, frequency
- ☐ Kilometer, instruction, frequency

7. Which sign indicates that you should not enter under any circumstances without permission? (1004.2.2)

- ☐ Wildfire area
- ☐ Helicopter landing area
- ☐ Machinery working
- ☐ Seismic crew



Now check your answers on the next page.

Self-Quiz Answers

1. What is the maximum distance behind the lead vehicle that another vehicle can be travelling and still be considered part of the convoy for communication purposes? (1004.1.1)

Answer: **1 km**

2. Who is responsible for communicating hazards to workers in a new work area? (1004.1.2)

Answer: **Supervisor**

3. What should NEVER be communicated over the radio in the case of an injury or fatality? (1004.1.3)

Answer: **Name of worker involved**

4. What change should be communicated immediately? (1004.1.4)

Answer: **Workplan**

5. What three things should a driver know before entering a resource road? (1004.2.1)

Answer: **Radio frequency/channels, road name, calling procedure**

6. What content is included on an active area sign? (1004.2.2)

Answer: **Instruction, who to call, radio frequency**

7. Which sign indicates that you should not enter under any circumstances without permission? (1004.2.2)

Answer: **Wildfire area**