

# Safety Hazards

## Off-Road Vehicles

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## What are Off-Road Vehicles (ORVs)?

Off-road vehicles have a broad definition and include a wide range of vehicles used for both work and leisure, including:

- Snowmobiles
- All-terrain vehicles (ATVs) (also known as “quads”), both single and “two-up” vehicles
- Off-road motorcycles
- Utility-terrain / Side-by-side off-road vehicles (also known as “argos”, “rhinos” and “razors”)

ORVs are designed to be off-highway vehicles and to be operated in rugged environments such as non-public roads, and paths. While other vehicles such as jeeps, trucks, SUVs and other on-highway motor vehicles may be used off-road, the focus of this document is vehicles designed primarily for off-road use.

For example, all-terrain vehicles (ATVs) are specialized motorized equipment that are usually four wheeled, open vehicles, with oversized, deep tread, and low-pressure or non-pneumatic tires. The operator sits on a saddle-like seat and steers with handlebars. ATVs can reach speeds of 100 km or more, and weigh around 360 kg (approximately 800 lbs). They can also maneuver quickly. They are designed to be “driver-active”, meaning the operator’s body movements help to control the ATV. All currently manufactured ATVs have 4 wheels. While not recommended, three-wheeled ATVs may still be in use. Due to safety concerns, manufacturers stopped making the 3-wheeled models in 1988.

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## What are the hazards associated with ORVs?

Rollovers are a serious concern and one of the most common causes of injuries. Rollovers are often due to:

- the ability to reach high speeds
- no protection for the operator
- the vehicle’s high center of gravity, and
- the vehicle’s relatively narrow wheelbase

Some ORV have manufacturer provided roll over protection and other safety features such as seat belts and footrests. When roll over protection, safety cages or seatbelts are not present (or used), operators and passengers may be thrown from the vehicle or be trapped under the vehicle during a rollover. Incidents can result in severe injuries, including death.

Other incidents have occurred when:

- driving on or along the side of a highway
- carrying a passenger
- not wearing or using protective equipment, including a helmet and seatbelt
- operating without appropriate training or supervision
- ORV or equipment was in poor repair

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## What kind of workplaces use ORVs?

ORVs may be used in various workplaces, such as:

- Security and law enforcement professionals
- Construction worksites
- Landscaping operations

- Emergency medical services or search and rescue professionals
  - Land surveying and land management
  - Military operations
  - Mining exploration
  - Pipeline maintenance
  - Agriculture, including farming
  - Forestry activities, including firefighters or working in forests and other wilderness areas
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## Where can ORVs be operated?

In general, ORVs are used off road, and can cross (but not travel on) highways. Some jurisdictions may allow ORVs to travel on the shoulder of a highway if safe to do so. Local areas, such as your municipality, may have by-laws that allow or limit which roads can be used and at what time of day or year. Check with the authorities in your area for exact details, such as your municipality, highway traffic enforcement (police), or provincial government.

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## What items should be inspected before using an ORV?

Always inspect the vehicle before each use. Follow the manufacturer's manual. Record your findings in a log or inspection book, with your name and date. Do not use the ORV if you have any concerns.

Before turning on the ORV:

- Is the manufacturer's manual available?
- Review the logbook and maintenance records – are there any issues of concern?
- Is the gas tank full?
- Is the oil level appropriate?
- Do each of the tires appear to be in good repair? (e.g., have no movement when pushed, bolts are tight, correct air pressure, no worn areas or cuts) If a track is present, is the track aligned and in good condition?
- Is your personal protective equipment (PPE) present and in good working order (e.g., the chin strap works, visor or goggles provide clear viewing)?
- Are the first aid and emergency kits present and stocked appropriately?
- Is there a tire repair kit?
- Are the footrests, cables and lines in good repair? (no signs of wear or breaks)

- Are there any object or items that might get tangled in the wheels or axles?

When the ORV is turned on:

- Are the lights working?
- Do the handlebars turn as designed?
- Does the throttle continue to run smoothly, regardless of the handlebar position?
- When moving slowly, do the brakes work without grabbing or pulling?
- Is the vehicle equipped with a tether switch? Does the engine immediately stop running when the tether is removed?
- Does the engine turn off smoothly when turned off?

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## What are some general safe use tips when operating an ORV?

Safe use tips include:

- Follow the manufacturer's safety instructions. Read the operator's manual
- Wear the appropriate personal protective equipment (PPE). PPE generally includes a certified helmet with a chin strap, eye-protection (visor or goggles), hearing protection, and suitable clothing for the conditions, such as long sleeves and pants, gloves and close toed boots
- Use seat belts, if provided.
- Only transport a passenger if the ORV is designed to carry an extra person. If the vehicle has passenger footrests, the passenger must be able to reach the footrests with their feet
- Keep the vehicle in good working condition
- Inspect the vehicle before each use
- If the ORV is carried on a vehicle or trailer, load and unload safely using ramps with a non-slip surface
- Know how to safely operate any implements and attachments, such as a mower, front end loader, or hitch. Make sure you know how each implement or attachment may affect the stability and handling of your ORV
- Know how to carry supplies on the ORV safely. Make sure all items are balanced, secured, and loaded on the provided racks
- Check the weather forecast before leaving, dress appropriately and carry any necessary supplies or equipment

- Always provide the workplace(or another person) with your route and destination information, and when you expect to arrive or return
  - Drive at a speed that is safe for your ability, skill level, the current weather, and terrain you are travelling over
  - Be aware of potential hazards you might encounter such as trees, stumps, ruts, rocks, streams, gullies, branches, wires, lines (e.g., clothes lines), etc.
  - Carry first aid and emergency kits and a cellular phone (be aware of areas that may not have service)
  - If the ORV is left unattended, turn it off, or secure it from moving by setting the brake, putting the transmission into park if possible, and using wheel chocks if there is a possibility of rolling
  - Do not operate any vehicle if you are or suspect you might be impaired (fines and enforcement are the same as when operating motor vehicles)
  - Do not let your feet or objects (including loose clothing or laces) dangle as they may get caught in the wheels or tracks
  - Do not exceed the hauling and towing capacity or weight limits specified by the manufacturer
  - Do not carry passengers unless the vehicle is designed to do so
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## What are some tips when travelling by ORV?

- Check the manufacturer's manual for any limitations regarding the slope (steepness of a hill) that the vehicle is designed to travel safely over
  - Always look and plan ahead. Be aware of your surroundings and where you are going
  - Before travelling a route that may have hazards, walk the route first. Look for
    - Unstable ground
    - Loose rocks
    - Deep holes
    - Low hanging branches
    - Space to turn around safely
    - Keep a safe distance between other ORVs in your group
    - Do not operate when pedestrians are nearby
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## What can employers do to keep workers safe when ORVs are being used?

- Establish a safe work procedure or policy regarding the safe use and maintenance of ORVs
  - Keep all vehicles in good repair
  - Make sure workers understand how to drive and ride on an ORV safely. Consider requiring the successful completion of a hands-on ORV safety training course provided by a qualified instructor before allowing individuals to operate ORVs
  - Make sure workers are using an ORV that is appropriate for their size and age. There may be restrictions regarding operation in your local area for young workers (especially individuals under 16 years)
  - Require operators use appropriate personal protective equipment (PPE)
  - Identify and mark – and eliminate if possible – hazards such as excavations, trenches, and wires that might be present so the hazards are easily seen and avoided by drivers on the job site
  - Establish operating and maintenance policies that follow manufacturer's guidelines, specified hauling and towing capacity, and passenger restrictions
  - Know that ORV laws vary from province to province. In general, drivers must have a valid driver's licence, and may need to carry a registration permit for the ORV. Registration plates and insurance are generally required when not on private property
  - Establish procedures for workers who are [working alone](#) or [off-site](#)
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## What should workers do when using ORVs?

Workers should:

- Participate in education and training for the safe handling and operation of an ORV before using one
- Only operate an ORV if you feel able to do so safely
- Follow your workplace's safe work procedures, and the general tips provided in this document
- Always wear the recommended PPE
- Report any concerns to your employer
- Follow other safety procedures, such as those for working alone, as needed

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