



# Guidelines for the safe use of quad bikes



## FOREWORD

On average, five people are killed on New Zealand farms each year in work-related quad bike incidents. In addition, there are more than 845 work-related injuries each year on New Zealand farms, with more than 160 serious enough to require time off work or ongoing help.

That's a toll we **must** reduce.

This document provides practical advice on how to reduce the likelihood of quad bike accidents on farms. It lists potential hazards that can occur when using quad bikes and outlines steps that can be taken to manage them.

The Health and Safety in Employment Act 1992 requires employers to identify and control hazards that may cause harm, and also puts a responsibility on employees and others to ensure their safety and the safety of others. These guidelines set out what the Department sees as best practice in terms of meeting obligations under the Act.

I would like to thank those in the agriculture industry who provided feedback or contributed to the development of these guidelines.

*Lesley Haines*

**Lesley Haines**

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# INTRODUCTION

The purpose of these guidelines is to help reduce the risk of injuries and fatalities by providing practical guidance on how to manage quad bike hazards.

The guidelines are primarily aimed at those owning or using quad bikes in agricultural workplaces, because this is where the majority of quad bikes are. However, the safety steps will be relevant for the workplace use of quad bikes in other industries including forestry.

The guidelines have been written for:

- farm owners
- employers, and
- people contracting others to do work on the farm

to help them meet their obligations towards themselves and others under the Health and Safety in Employment Act 1992 (HSE Act) in relation to the use of quad bikes.

However, the information will also be useful for contractors and workers to know what they can expect, and what will be expected of them when using quad bikes at work.

Everyone on the farm – farm owners/managers, employers, contractors, and workers – has a role to play in making work safe, and it's important that everyone does their bit.

These guidelines complement safety information from ACC, and information from the New Zealand Transport Authority about the on-road use of quad bikes. For further safety information please refer to manufacturers' instructions, training providers, or contact the Department of Labour on 0800 20 90 20.

## Quick facts & links ↴

There are estimated to be over 80,000 quad bikes in use on farms and in forests throughout New Zealand.

For on-road information, go to: [www.nzta.govt.nz/resources/factsheets/19/all-terrain-vehicles.html](http://www.nzta.govt.nz/resources/factsheets/19/all-terrain-vehicles.html)

For quad bike safety tips from ACC, go to: [www.acc.co.nz/quad-bike-tips](http://www.acc.co.nz/quad-bike-tips)

## What is the relationship between this document and the HSE act?

These guidelines are not law, but are a statement of what actions the Department considers to be practical to ensure safety. These guidelines may be used by the Courts to help decide whether or not someone has failed to comply with any provision of the Health and Safety in Employment Act 1992. If you follow the guidelines, it is likely that you will be able to show that you are doing everything reasonably possible to keep people on your farm safe around quad bikes.

You may find that some of the safety steps in the guidelines seriously challenge the way you've always used quad bikes. Just because a particular behaviour is common amongst others or you have always done it that way, it doesn't mean that it is acceptable or safe and we're not going to tell you how to do an unsafe thing more safely.

With the exception of wearing helmets (PPE) and rider training/supervision (because these are specifically covered in the HSE Act), you are able to put safety measures that differ from those set out in these guidelines in place – *as long as they achieve the same level of safety (or better) for people.*

If you do this, be aware that you'll need to be able to justify why you took a different action instead of what was stated in the guidelines – especially if something goes wrong. The responsibility to make safe decisions remains with you.

Ignoring the information in the guidelines and not doing anything to manage risk is just not an option.

## THE HEADLINES – WHAT YOU NEED TO KNOW TO KEEP SAFE

Quad bikes are commonly referred to as ATVs but in reality they are not really all terrain vehicles – they can't go *everywhere*, or do *everything*. Respect their limits, and make sure everyone on your farm follows the safety steps included in these guidelines.

The safety steps you need to know are summarised here, but more detailed information can be found on the following pages as shown:

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## BEFORE YOU GO ANY FURTHER...

### Is a quad bike the right vehicle for the job?

You can eliminate the hazards involved with quad bike use by making sure you're using the right vehicle for the job upfront. For example, a motorbike is a more appropriate vehicle for some mustering jobs, or a ute for carrying heavier farm loads or transporting people around the farm.

When you're looking to purchase a new vehicle, the supplier will be able to provide advice about the best one to meet your needs (see the next section for more information).

Picking the right vehicle for the job doesn't have to mean buying a fleet of expensive vehicles. But it's important to look at each specific task as it needs to be done on the farm, and think carefully about whether the quad bike is the right tool for the job *before* heading off. Have a look at this scenario:

#### Choosing a safer alternative

Mark spotted a sheep stuck in a fence halfway up a steep hill that needed to be released. As he got on the quad bike he thought he had better take a wire cutter and some fencing tools just in case.

Loading the tools onto the front he paused for a moment to think. Getting up the steep hill with the tools hanging off the front rack would be tricky, and if the sheep was badly injured and had to be carried back, the quad just wasn't going to do the job.

Mark decided to drive his 4WD truck up the hill, park on a nearby ridge and walk the remaining distance with his tools to the sheep. All it took was a short delay and a considered decision. But it may have meant the difference between Mark being able to get on with the rest of his day, and being unable to work for weeks due to a serious injury.

Quad bikes are invaluable farm tools when they are used for the right tasks, but pushing them beyond their limitations to do things or go places they were never designed for can have disastrous consequences.

### When you buy a quad bike for work

Your new quad bike needs to be safe and fit for purpose. Make sure you talk to your supplier about the terrain and conditions the bike will encounter, and what tasks it will be expected to do.

You can expect the supplier to provide all the necessary information, including:

- Safety information
- Maintenance information
- Manufacturer's instruction/manual
- Limitations or restrictions of the quad bike.

Suppliers may also have details about the rider training providers that are available in the area, where to get safety equipment such as helmets (if they don't also supply these), and information about the safe use of attachments/trailers.

If you are purchasing a quad bike second-hand, make sure you know the history of the vehicle and assess if it is working properly, and is safe and fit for purpose.

See *Choosing the right vehicle for the job* on page 14 for more information.

For information about buying or selling a second-hand quad bike for use at work, go to: [www.dol.govt.nz/quad-bikes/index.asp](http://www.dol.govt.nz/quad-bikes/index.asp)

For more information about the HSE Act, go to: [www.osh.govt.nz/law/quickguide/index.shtml](http://www.osh.govt.nz/law/quickguide/index.shtml)

## KEEPING PEOPLE SAFE ON THE FARM

It is important that you focus on keeping people safe. Thinking and behaving with safety in mind is likely to ensure that you also meet your duties under the HSE Act. Here are some of the things you can do to keep people safe on the farm:

- Identify hazards that may cause people to be harmed and put steps in place to manage them
- Make sure that visitors to your farm are aware of hazards that they would not ordinarily expect
- Make sure you and your employees are trained or skilled to work safely (including on the particular terrain or conditions of your property)
- Provide protective clothing and equipment for employees **and make sure they use it** (and lead by example yourself)
- Ensure that contractors have considered hazards and are working safely
- Stop unsafe behaviour when you see it happening.

And, if you're lending your quad bike to someone else to do work on their farm, make sure the bike has been properly maintained and is safe for its intended use and that the person has sufficient information about how to use it safely.

### 1. ELIMINATE



### 2. ISOLATE



### 3. MINIMISE

## MANAGING HAZARDS UNDER THE HSE ACT

As in any other kind of workplace, you have duties under the HSE Act as an employer.

You are required to take 'all practicable steps' to control each hazard on your farm, and the Act is very specific about the order in which you need to consider the appropriate control/s for a particular hazard.

### 1) The first thing to be considered is how to **eliminate** the hazard.

*Examples of hazards being eliminated are:* using a different, more appropriate vehicle for a particular job, or preventing under-aged riders from riding adult-sized machines.

### 2) If this cannot be done, you need to try to **isolate** the hazard.

*Examples of hazards being isolated are:* physically blocking off access to particularly hazardous places on the farm such as unstable ground or sudden drop-offs, or making sure the keys are not left in the quad bike when it is not in use so that people can't ride it without your knowledge.

### 3) If you cannot eliminate or isolate the hazard, you need to **minimise** it.

*Examples of hazards being minimised are:* helmets, training and farm route management. Wearing a helmet will not prevent an accident, but may reduce the chance or severity of a head injury. Training someone may give them the skills to avoid an accident, or to regain control of the vehicle preventing a more serious incident. Building tracks and/or setting out 'no-go' zones for your farm can help to reduce the chances of people getting themselves into trouble.

## On-going monitoring

If you can only minimise a hazard, then on-going monitoring is required. This means, for instance, checking rider behaviour every now and again and regularly reviewing the rider's competence.

## SPECIFIC QUAD BIKE HAZARDS AND HOW TO MANAGE THEM

The most common hazards faced by quad bike users on farms are set out on the following pages. Guidance is provided about ways for farmers and other quad bike riders to effectively control those hazards.

However, each farm situation will be different. *You* will need to assess the hazards present, consider the likelihood of harm, and act according to your *own* circumstances using these guidelines to help you make good, safe decisions.



### THE HAZARD: OPERATING A QUAD BIKE

The hazard is the activity of riding the quad bike. Operating them can be dangerous if you don't know what you're doing; they may not look it – but quad bikes are powerful and complex pieces of machinery. The rider needs to shift and use their body weight to control the bike. This is called 'active riding'.

Quad bike riding skills are not intuitive, and need to be learned through riding experience and training.

Riders who are unfamiliar with the particular quad bike or farm terrain, and/or unskilled in the proper active riding techniques are at increased risk of injury.

#### ■ How to manage the hazard

**Ensure quad bike riders have the knowledge, skills and training necessary to operate a quad bike safely, or are closely supervised until they are assessed as competent.**

Managing the hazard means ensuring that riders are competent to use the quad bike.

On-farm, this will involve:

- 1) Providing riders with safety information relevant to quad bike use on the property (perhaps as part of an employee induction process) *before* allowing them to operate a quad bike.

Examples of relevant safety information include vehicle familiarisation, farm operating rules, preferred routes and no-go zones, and emergency procedures.

- 2) Assessing the competency of each rider to ensure that they are able to ride the quad bike they are expected to use capably and safely.

This assessment needs to include a practical element to check whether the rider can demonstrate the active riding techniques needed to negotiate your terrain safely. Make this as 'real' as possible.

An assessment of the rider's theoretical knowledge will also be needed.

- 3) Providing riders with the supervision and training they need to operate the bike safely.

The level, duration and type of supervision and training may vary according to the person and their experience and competence. For example novice riders can be restricted to flat, even ground where they can be seen and supervised. As they progress they may follow an experienced rider on more challenging terrain before letting them ride unsupervised.

Quad bike rider training courses run by a recognised training provider are available in many areas, and are generally the best option to make sure people learn the right techniques. Informal but comprehensive training by an experienced and competent rider is another way of learning how to ride a quad bike safely – but make sure you don't end up passing on bad habits.

The bottom line for training is – employers are responsible for making sure that inexperienced riders have the knowledge and skills they need to ride a quad safely, that the rider understands them, and is closely supervised until they show themselves to be competent.

A sample rider competency assessment checklist can be found on page 17, and an electronic version that can be adapted for use on your farm is available from [www.dol.govt.nz/quad-bikes/index.asp](http://www.dol.govt.nz/quad-bikes/index.asp)

For more information on NZQA accredited quad bike rider training providers, go to: [www.nzqa.govt.nz/providers/index.do?frameworkId=75178&unitStandardId=24557](http://www.nzqa.govt.nz/providers/index.do?frameworkId=75178&unitStandardId=24557)

52% of the serious harm incidents on farms investigated by the Department of Labour between 2000 and 2008 involved a quad bike rollover.

#### A NOTE ABOUT ROLL OVER PROTECTION DEVICES (ROPS)

Various ROPs have been designed and fitted to quad bikes over the past two decades with the aim of protecting the rider from being crushed by the weight of the quad bike.

Quad bike manufacturers say that ROPs increase the chances of injury if a quad bike rolls, and commissioned a computer simulation study to illustrate this effect.

However, the validity of the study's findings have been challenged by others citing contradictory evidence, and the debate continues.

The Department cannot promote or require the fitting of ROPs to manage the hazard of quad bike roll-over until the protective properties of such devices have been firmly established.

Fitting ROPs to a quad bike therefore remains a matter of personal choice for the farmer. A recent survey indicates that some form of ROP is fitted to quad bikes on approximately 15% of NZ farms.



## THE HAZARD: QUAD BIKE LOSS OF CONTROL (RESULTING IN COLLISION OR ROLLOVER)

The hazard is where and how a quad bike can be used.

Quad bikes have been used in all farming regions in New Zealand with difficult terrain. The terrain can be excessively steep, rough, slippery or loose and in some cases may be inaccessible to quad bikes unless well formed tracks are provided.

In all of these circumstances manufacturers advise caution, as the quad bike may become unstable due to sudden and dramatic shifts in the bike's centre of gravity.

Riders can easily lose control of quad bikes following a collision with an object, encountering unfavourable ground conditions, or as a result of towing trailers etc. In these incidents the rider can come off the quad bike and hit the ground, another object, or the quad bike itself.

Quad bike rollovers can result in the rider being pinned or trapped underneath the vehicle, causing severe crushing injuries which are sometimes fatal.

### ■ How to manage the hazard

#### Personal protective equipment

##### Wear a helmet at all times the vehicle is being ridden.

The helmet needs to be well-fitting, securely fastened, and maintained in good condition (follow the manufacturer's instructions regarding care and maintenance).

The All Terrain Vehicle helmet standard (NZS 8600:2002) is appropriate for off-road use at low speeds (less than 30km/h). An approved motorcycle helmet designed for on-road use will provide more protection at higher speeds.

Other recommended personal protective equipment includes eye protection, gloves, sturdy footwear, and clothing that covers arms and legs.

#### Route and farm practice management

##### Recognise dangerous areas by establishing 'no-go zones' in farm health and safety plans and prohibit people from riding quad bikes in these identified areas of the farm.

Regularly review seasonal effects on land, identify preferred safe routes for quad bikes on different areas of the farm, and maintain tracks as part of your health and safety plan.

Encourage riders to adopt a 'safety first' and 'speed-appropriate' riding style. This includes getting into the habit of assessing the terrain before choosing to ride over it – and if they are not confident, going another way, or turning around and using a more appropriate means to complete the task.

Set appropriate speed limits for riders as part of farm management practice – relating to particular areas of the farm, tasks, or weather/track conditions as necessary.

## THE HAZARD: CARRYING PASSENGERS

The hazard is the passenger's added weight and movement on a quad bike designed for only one person. The majority of quad bike seats are not built for two, even though they may appear that way. The long seat allows the rider to move their weight forward or backwards when going up or down slopes.

Carrying passengers increases the bike's instability by raising the centre of gravity, and can restrict the rider from using active riding techniques. For these reasons, manufacturers prohibit the carriage of passengers on bikes that are designed for one person, and this is clearly marked on the bike itself with stickers.

### How to manage the hazard

**Do not carry passengers on quad bikes designed for one person.**

If people need to be moved around the farm, use an alternative vehicle such as a ute, farm bike, side-by-side utility vehicle or quad bike designed for pillion passengers.

Based on an analysis of serious harm incidents investigated by the Department from 2000 to 2008, if passengers had not been carried at least 18 serious injuries (2 fatal) would have been prevented.

## THE HAZARD: UNDER-AGE RIDERS

The hazard is the quad bike being ridden by someone without the skill, weight, and mental development (eg perception, cognitive and reaction time capabilities) necessary to safely control it. All manufacturers of quad bikes sold in New Zealand state that children younger than 16 may not ride an adult-sized quad bike for this reason.

### How to manage the hazard

**Do not allow riders under 16 years of age to ride a quad bike with an engine capacity over 90cc.**

Children can still help out on the farm, but you need to find another way for them to travel. If the job requires someone to ride an adult quad bike then it's probably better off being done by an adult.

Consider whether a 90cc bike is an option for a second quad bike on your farm when you have younger family members who need to pitch in. They are cheaper than full-sized bikes, and are able to be ridden by 12–16 year olds. 90cc quad bikes are still serious pieces of machinery, weighing around 160kg – so other members of the family who are smaller or lighter may find them easier to handle as well.

Based on an analysis of serious harm incidents investigated by the Department from 2000 to 2008, adhering to the manufacturer's minimum rider age would have prevented at least 6 serious injuries (3 fatal).

For information about requirements for registration and licensing of quad bikes, go to: [www.nzta.govt.nz/resources/factsheets/19/categories.html](http://www.nzta.govt.nz/resources/factsheets/19/categories.html)

A sample pre-operation checklist can be found on page 15, and an electronic version is available from [www.dol.govt.nz/quad-bikes/index.asp](http://www.dol.govt.nz/quad-bikes/index.asp)

A sample maintenance checklist can be found on page 16, and an electronic version that can be adapted for use on your farm is available from [www.dol.govt.nz/quad-bikes/index.asp](http://www.dol.govt.nz/quad-bikes/index.asp)

In a study involving the inspection of quad bikes it was found that 60% failed at least one aspect of a basic bike condition check, and as high as 73% for quad bikes over three years old. Tyres, wheels and steering were the most commonly noted faults.



## THE HAZARD: MECHANICAL FAILURE

The hazard is mechanical failure of a quad bike during operation and this puts the safety of the rider at risk.

As most quad bikes are not required to be registered / licensed the majority of these vehicles are not subject to a formal warrant of fitness scheme.

### ■ How to manage the hazard

#### Pre-operation checks

**Conduct a pre-operation check before riding.** It is particularly important to do a pre-operation check if you are not the person who last used the quad bike, or if you have not used it for some time.

The owner's manual lists specific items to be checked before a quad bike is started up for work. Follow the procedures and specifications laid out in the manual.

#### Regular maintenance

**Ensure the bike is in reliable working condition by undertaking regular maintenance checks** and take remedial action where shortcomings are found.

Quad bike manufacturers recommend how and when routine maintenance is to be conducted in their owner's manuals. This is the minimum level of maintenance required.

Ideally, maintenance checks will be done by a mechanic, so that any necessary repairs can be done at the same time. If maintenance checks are sometimes done on the farm for practical reasons, use a checklist to record the frequency of checks, what has been checked, and any remedial actions to be taken.

#### Quad bike accident repairs

Check the quad bike to identify and list all defects after any significant incident. A suitably qualified person needs to repair defects that have become a hazard to the safe operation of the quad bike.



## THE HAZARD: TOWING AND CARRYING LOADS

The hazard is the way a load (towed or carried) impacts on the handling, braking and stability of a quad bike.

### Towing

Quad bikes are sometimes used to tow trailers which are too heavy, too wide, or with an incompatible centre of gravity. There is a risk that the trailer will contribute to a loss of control through jack-knifing, loss of traction or rollover.

### Carrying loads

Carrying loads on the front and/or rear racks of quad bikes is convenient, but can be risky because the extra weight can affect braking, alter the centre of gravity and make the vehicle more difficult to control.

Overloading, shifting loads (such as live animals), unbalanced or insecure loads contribute to the instability of the vehicle leading to serious harm incidents. Brakes are only designed to operate effectively when carrying loads up to the weight limits specified.

### Carrying liquids

Liquid loads, either carried on the quad bike or towed, are unstable because the contents can shift when cornering or traversing slopes. Carrying liquid loads may decrease quad bike stability and therefore increase the likelihood of rollover.

## How to manage the hazard

### Load weights

**Keep within the load limits stated by manufacturers – never overload a quad bike or a trailer.**

Manufacturers specify load and towing limits in the owner's manual and on the quad bike itself. These maximums include:

- weight of the load
- location of the load
- attachment weight
- rider weight.

If an after-market attachment is used, make sure the combined total weight does not exceed the manufacturer's weight or towing specifications. Note that towed load limits will include the weight of the trailer itself. Check the weight specifications for the different types of quad bike if you have more than one on your farm – they may not be the same.

### Safe loads

Operate only with stable and balanced loads that are well secured to the racks with straps, and keep the load low. High loads raise the centre of gravity.

Internal baffles in tanks for liquids will help to reduce the movement of the liquid and stabilise the load. Make sure tanks are properly sealed to avoid splashing of chemicals onto the machine, the rider or surroundings.

### Safe riding with loads or towing

Riding a quad bike while carrying or towing loads requires different skills, so make sure the rider has been trained in these techniques. Use a low gear, reduce speed and allow longer braking distance when carrying a load. When riding on hills and rough terrain which can't be avoided, reduce your speed and the weight you're carrying.

## Quick facts & links

Over 56% of farms use quad bikes to regularly tow trailers or other mobile equipment.

Based on an analysis of serious harm incidents investigated by the Department, as many as 10% of serious harm incidents occurred while towing.



## THE HAZARD: ATTACHMENTS AND MODIFICATIONS

The hazard is modifying a quad bike or adding attachments that do not match the manufacturer's specifications. This can increase the likelihood of loss of control and injury to the rider.

Carriers and bull bars are a type of modification and can create a hazard. If the quad rolls, the rider could be struck by the hard metal of these as opposed to the soft plastic of the mudguards.

Changing the type of tyres or puncture-proofing tyres could adversely affect the quad bike's performance in some circumstances.

### ■ How to manage the hazard

**Only use attachments designed for and compatible with the quad bike.**

When purchasing attachments, check with suppliers and/or ask for verification that the type of quad bike and any attachments are compatible and suitable for the intended use of the vehicle.

Modifications need to be within the manufacturer's specifications or otherwise approved by an appropriately qualified person.

Note that modifications not approved by the quad bike manufacturer may void a warranty and/or insurance policy. Check with the manufacturer/supplier or insurance underwriter.



## THE HAZARD: MULTI-TASKING

The hazard is the risk of distraction performing other tasks while riding the quad bike.

Riding a quad bike while performing another task at the same time (like spraying or mustering) can increase the risk of losing control of the bike because the rider's attention is divided. For example, while mustering, quad bike riders focus on the livestock rather than the ground they are riding over, and may not be aware of unexpected surface changes or obstacles until it is too late.

Performing another task while riding can compromise basic riding techniques.

### ■ How to manage the hazard

Manufacturers recommend that riders **keep both hands on the handlebars and both feet on the foot pegs while riding the quad bike**. Wherever possible, stop the quad bike before performing another task. The job might take a bit longer, but you're more likely to get home safely.

Use the right vehicle for the job – it may not be a quad bike.

Maintain a slow speed and seek a path over the terrain that provides the best visibility of any potential hazard or obstruction.

Department of Labour incident investigations confirm that quad bike riders are often performing multiple tasks at the time of the loss of control – 24% were being used to muster livestock and 5% used to spray.



## THE HAZARD: WORKING ALONE AND IN ISOLATION

The hazard is working alone. This is a common hazard in farm work that is not specific to quad bike use, but using quad bikes has greatly increased the mobility of farmers, allowing them to get to the far reaches of their farms to perform tasks.

When a quad bike accident happens while working alone in remote areas, there can be dangerous delays in receiving medical assistance which can contribute to fatal outcomes.

### How to manage the hazard

**Tell someone where you are working and when you plan to return, and have regular 'check-in' times.**

This will allow a quick response if you fail to return.

A method of raising the alarm if you are injured is also important, for example a cell phone or emergency beacon. It may be helpful to know the GPS coordinates of the farm, and/or have a GPS that you can use when you are out on the farm. Some cellphones have this capability.

Develop an emergency plan with your workers and family members so they know what to do if something does go wrong.

An investigation of reported loss of control incidents found that riders working alone were twice as likely to be seriously harmed.



## THE HAZARD: PERSONAL FACTORS

The hazard is the rider being impaired due to fatigue, stress, attitude (e.g. over-confidence, recklessness) or being under the influence of drugs and alcohol. This can result in poor judgement, and reduced balance, coordination or reaction times, and will increase the risk of serious injury or fatality.

### How to manage the hazard

**As an employer, make sure riders are aware of the hazards associated with operating a quad bike, and the impact of their own behaviour and attitudes on these hazards.**

As a rider, take responsibility and let someone know if you're not up to the job for any reason.

Reassess the tasks that will be required and identify alternatives where possible if there are stress or fatigue issues. The person who is most willing to take unnecessary risks is often the one who is most keen to 'muck in', help out and get the job done. Tired, stressed, but enthusiastic is not a good mixture.

Never operate a quad bike under the influence of drugs and alcohol.



## THE HAZARD: UNAUTHORISED ACCESS TO THE QUAD BIKE

The hazard is people being able to ride the quad bike without the knowledge or permission of the farm or bike owner.

Unattended quad bikes can be a temptation to people untrained or unfamiliar with the bikes or the farm – whether they are visitors, young children or workers.

### How to manage the hazard

**Put security measures in place to control access to the bike and keys when the quad bike is not in use.**

Do not leave the keys in the ignition while the bike is unattended.

# CHOOSING THE RIGHT VEHICLE FOR THE JOB

The safest vehicle is the one best suited to the job. The information in this table may be helpful when deciding which of the vehicles available to you is the most suitable for different jobs or conditions on your farm. However, it is intended as a general guide only.

When you're looking to purchase a new vehicle, speak to vehicle dealers about your own farming situation and read the vehicle manufacturer's recommendations.

VEHICLE USE	2 WHEELED FARM BIKE	QUAD BIKE	SIDE-BY-SIDE UTILITY VEHICLE	UTE OR FOUR WHEEL DRIVE	SMALL TRUCK	SMALL FARM TRACTOR
<b>WORKING ON FARM:</b>						
Inspecting farm and stock				4WD		
Mustering of stock				4WD		
Spraying		1				
Maintenance work						
<b>CARRIAGE OF GOODS :</b>						
Light tools, equipment and dogs		2				
Bulky loads and stock						
Light, low or secured loads						
Heavy, high or unsecured loads						
Passengers						
<b>GROUND CONDITIONS:</b>						
Sealed roads						
Steep uneven terrain				4WD		
Flat or gentle sloping terrain						
Hard surfaces						
Soft or muddy				4WD		
<b>RIDER CAPABILITY:</b>						
inexperienced/untrained on farm						
<b>TOWING:</b>						
Narrow or small trailer		3				
Wide or heavy trailer						

	Vehicle is appropriate for this task/circumstances if used safely
	Vehicle could be used but an alternative vehicle could perform better or be safer
	Caution – Vehicle may not be the safest vehicle for the task or in these circumstances

## Notes:

1. Provided the spray unit is purpose built for use on a quad bike, and preferably with baffles in tank. Do not exceed quad bike manufacturer's carrier limits, including unit total weight and fluid.
2. Appropriate to carry up to two dogs only.
3. Only use small trailer purpose built for use with a quad bike with low pressure quad bike type tyres fitted. Do not exceed quad bike manufacturer's towing limits.

# FARM QUAD BIKE PRE-OPERATION CHECKLIST

Note: refer to the manufacturer's instructions for your particular quad bike for the correct specifications (for example, tyre pressure, and the correct engine temperature for checking the oil).

<input type="checkbox"/> <b>CHECK FUEL, OIL, AND COOLANT</b>	
<input type="checkbox"/> <b>VISUAL INSPECTION</b>	
<input type="checkbox"/> For damaged or loose parts	<input type="checkbox"/> For fuel or oil leaks
<input type="checkbox"/> <b>WHEELS AND TYRES</b>	
<input type="checkbox"/> Check tyres for damage	<input type="checkbox"/> Check tyre pressure in each tyre
<input type="checkbox"/> Check wheel nuts	<input type="checkbox"/> Check tread depth is no more than 50% worn
<input type="checkbox"/> <b>THROTTLE</b>	
<input type="checkbox"/> Check throttle operates smoothly and freely – accumulated mud and dirt can restrict cable movement	
<input type="checkbox"/> <b>BRAKES</b>	
<input type="checkbox"/> Check brakes work properly before reaching full speed	
<input type="checkbox"/> <b>AIR FILTER</b>	
<input type="checkbox"/> Check air filter not choked with dirt – clean and replace regularly	
<input type="checkbox"/> <b>LIGHTS AND SWITCHES</b>	
<input type="checkbox"/> Check lights and switches work	
<input type="checkbox"/> <b>DRIVE CHAIN AND CHASSIS</b>	
<input type="checkbox"/> Inspect chain for correct adjustment, wear and lubrication	
<input type="checkbox"/> Check drive shaft for oil leakage	<input type="checkbox"/> Look and feel for loose parts with engine off
<input type="checkbox"/> <b>STEERING</b>	
<input type="checkbox"/> Check that steering moves freely without undue looseness	
<input type="checkbox"/> <b>MAINTENANCE ACTIONS NEEDED:</b> For safe operation, fix any defects identified during the check before use.	

Adapted from *A handbook for workplaces: Quad bikes on farms 2009*, from WorkSafe Victoria.

# ROUTINE MAINTENANCE CHECKLIST

Taking the time to carry out a regular and thorough check on your quad bike helps you to pick up on any problems before they get worse. Servicing these machines doesn't come cheaply, so identifying problems early on can help you save money... not to mention save your life.

Bike No. / Model:		Odometer/hours reading:	
Date/hours next due service:			
<b>■ BRAKES</b>		<b>■ GEAR SELECTORS</b>	
<input type="radio"/> Check adjustment – pads, cables, and fluid levels		<input type="radio"/> Gear levers – check for damage and excessive slack	
<input type="radio"/> Auxiliary brake		<input type="radio"/> Check gear change / kick start spline	
<input type="radio"/> Foot & hand levers adjusted		<b>■ COOLING SYSTEMS</b>	
<input type="radio"/> Check disc and cables for wear and damage		<input type="radio"/> Fluid levels (if liquid cooled)	
<b>■ CHASSIS AND SUSPENSION</b>		<input type="radio"/> Thermostatic fan	
<input type="radio"/> Shock absorbers – for leak and wear		<input type="radio"/> Leaks and damage	
<input type="radio"/> Suspension operation		<b>■ 4WD SYSTEM</b>	
<input type="radio"/> Safety guards – check for looseness		<input type="radio"/> CV joints	
<input type="radio"/> Handlebars foot decks and major fasteners (use tension wrench)		<input type="radio"/> Drive line and shafts	
		<input type="radio"/> Check for split boots and drive shafts	
<b>■ WHEELS</b>		<b>■ SIGNALS</b>	
<input type="radio"/> Axle bearings and wheel nuts are tight		<input type="radio"/> Lights	
<input type="radio"/> Rims not dented or buckled		<b>■ LEVER CONTROLS</b>	
<input type="radio"/> Tyres are road worthy, with adequate tread depth		<input type="radio"/> Check smoothness of operation	
<input type="radio"/> Tyre type and pressure as per the manual		<input type="radio"/> Check for broken, sharp or bent levers	
<input type="radio"/> Use low-pressure type gauge. High pressure gauges aren't accurate for quad bike tyres		<b>■ AIR FILTER</b>	
		<input type="radio"/> Clean, check and replace as needed	
<b>■ STEERING</b>		<b>■ EXHAUST</b>	
<input type="radio"/> Smooth movement from lock to lock		<input type="radio"/> Holes and corrosion	
<input type="radio"/> Reversing cables checked for wear and damage		<input type="radio"/> Excessive noise	
<b>■ THROTTLE OPERATION</b>		<input type="radio"/> Looseness	
<input type="radio"/> Test while moving handlebars fully to left and right		<input type="radio"/> Spark arrestor fitted	
<b>■ FLUID LEVELS</b>		<b>■ FOR QUADS WITH CHAIN DRIVE</b>	
<input type="radio"/> Fluid levels as recommended in the manual		<input type="radio"/> Chain adjustment as per manual	
<input type="radio"/> Transmission fluid		<input type="radio"/> Sprockets not worn	
<input type="radio"/> Engine oil		<b>■ BATTERY</b>	
<input type="radio"/> Battery fluid		<input type="radio"/> Battery terminals – check for corrosion and tightness	
<input type="radio"/> Brake fluid		<input type="radio"/> Electrolyte levels	
<input type="radio"/> Fuel tank filled		<input type="radio"/> Damaged casing	
<b>NOTES / ACTIONS REQUIRED:</b>			
Date:		Check completed by:	Next check:

Adapted from *A handbook for workplaces: Quad bikes on farms* 2009, from WorkSafe Victoria.

# SAMPLE QUAD BIKE RIDER COMPETENCY ASSESSMENT CHECKLIST

Add to or alter this form to suit your quad bike and farm rules.

Maintain completed forms to provide a record of completed inspection and/or training.

Additional copies of checklists are available at [www.dol.govt.nz/quad-bikes/index.asp](http://www.dol.govt.nz/quad-bikes/index.asp)

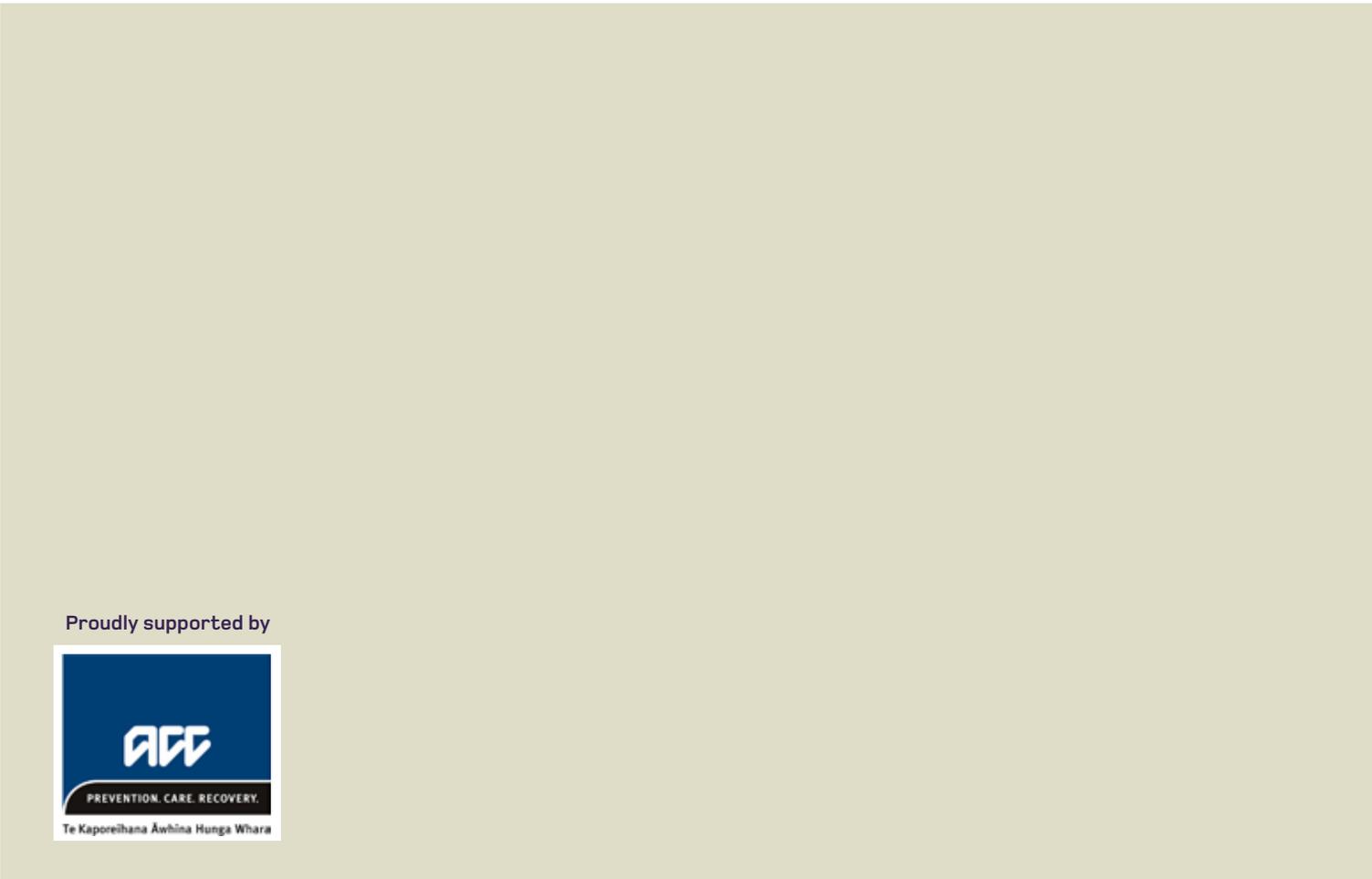
NOTE: A quad bike rider training course is the best option for making sure riders learn any skill or knowledge they are unable to demonstrate.

Quad bike rider competency assessment for (rider name):		
Assessment undertaken at (location):		
■ PRE-START-UP	DEMONSTRATED	
	YES	NO
The rider:		
Is dressed in suitable work clothing and footwear for operation.	<input checked="" type="radio"/>	<input type="radio"/>
Can describe the purpose and correct use of machine controls.	<input checked="" type="radio"/>	<input type="radio"/>
Can state why passengers are not to be carried on quad bike.	<input checked="" type="radio"/>	<input type="radio"/>
Knows how to do a pre-operational check.	<input checked="" type="radio"/>	<input type="radio"/>
Checks operation and adjustment of brakes.	<input checked="" type="radio"/>	<input type="radio"/>
Other	<input checked="" type="radio"/>	<input type="radio"/>
■ OPERATION		
The rider:		
Wears an approved helmet.	<input checked="" type="radio"/>	<input type="radio"/>
Wears appropriate personal protective equipment (such as gloves, boots and eye protection) and be able to identify different equipment for different farm tasks.	<input checked="" type="radio"/>	<input type="radio"/>
Follow the manufacturer's starting procedure.	<input checked="" type="radio"/>	<input type="radio"/>
Knows where the kill switch is and how to operate it.	<input checked="" type="radio"/>	<input type="radio"/>
Rides in a forward direction around a defined course – figure-8 around soft obstacles, actively shifting weight as outlined in the manufacturer's instructions.	<input checked="" type="radio"/>	<input type="radio"/>
Brakes at corner of defined course.	<input checked="" type="radio"/>	<input type="radio"/>
Demonstrates how to reverse.	<input checked="" type="radio"/>	<input type="radio"/>
Rides the quad bike, demonstrating control over more difficult terrain such as slope, gully, and channel bank.	<input checked="" type="radio"/>	<input type="radio"/>
Knows about safe loads and attachments and where to get this information for each quad bike on the farm.	<input checked="" type="radio"/>	<input type="radio"/>
Knows about farm safety rules, including speed limits, emergency plans and quad bike no-go zones	<input checked="" type="radio"/>	<input type="radio"/>
Knows what jobs the quad bike is to be used for (and what it is not to be used for.)	<input checked="" type="radio"/>	<input type="radio"/>
Knows how to safely load, transport, unload and store a quad bike.	<input checked="" type="radio"/>	<input type="radio"/>
Other	<input checked="" type="radio"/>	<input type="radio"/>
Name of rider:	Date of assessment:	
Person conducting assessment:	For quad bike no:	

Adapted from *A handbook for workplaces: Quad bikes on farms* 2009, from WorkSafe Victoria.

# NOTES





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