19053: Operate a motorcycle on flat terrain in the workplace under close supervision

Level 2

Learner Guide

PrimaryITO
KNOWLEDGE TO GROW

Unit standard 19053 v4	Level 2	Credits 3
Operate a motorcycle on flat terrain in the workplace under close supervision		

06 August 2020 Version 1

Contents

Introduction

Learning outcome

To successfully complete this unit standard you will show that you are able to:

- prepare to ride a motorcycle on flat terrain
- ride a motorcycle on flat terrain

Notes

All evidence presented in this unit standard must be in accordance with:

- Health and Safety at Work Act 2015
- Land Transport (Driver Licensing) Rule 1999
- Land Transport (Road User) Rule 2004.

If you require the Learner Guide to be printed on coloured paper, contact Primary ITO on 0800 20 80 20 and talk to our Learning Support Team.

Glossary

You may find new words (highlighted in **bold black)** as you read through this Learner Guide. The meanings of these words are in the glossary at the back.

Symbols

You'll also see symbols which we've used to help you know what's going on, for example:

Alert: you must be aware of this.

Activity: a written activity for you to do.

Search online: refer to online references for information on this topic.

Top tip: key information and useful tips.

Assessment

You will find a separate Assessment booklet for this unit standard. You will need to work through the activities in the Assessment.

Your Verifier will fill in the Verifier declaration once they are satisfied you have achieved the learning outcomes for the unit standard. Your Verifier may be your Supervisor or Workplace Trainer.

The Assessor will check all declarations and fill in the final sign-off once final competency is achieved. The Assessor may be your Training Adviser or a Workplace Assessor.

Introduction

Farm motorcycles are used by farmers all over New Zealand. Using a motorcycle enables you to get around the farm quickly and efficiently. However, motorcycles on farms can be hazardous. Farmers work in different terrain, in varying weather conditions and often need to carry equipment with them to complete their day to day farm operations.

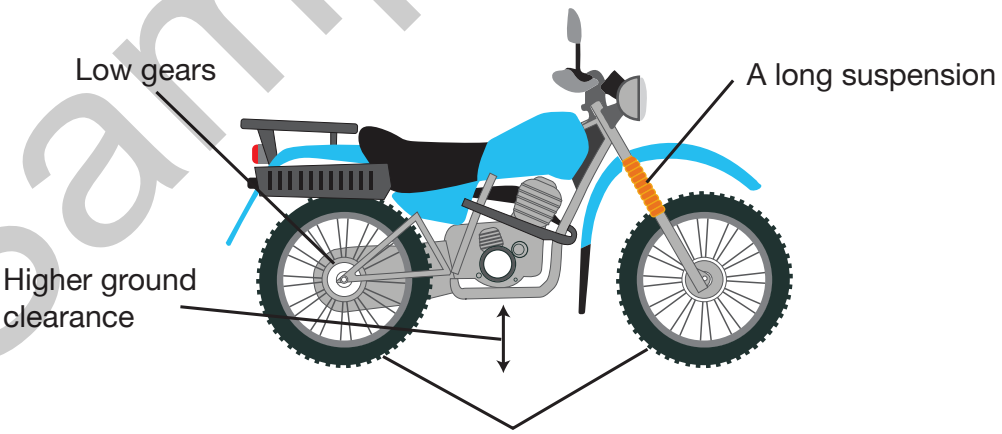
To ensure your safety when operating motorcycles, you need to:

- know your bike and its capabilities
- undertake pre-ride safety checks
- wear appropriate personal protective equipment (PPE).

Farm motorcycles

The farm motorcycle you ride must be specifically manufactured for a rural workplace or off-road use. Farm motorcycles are similar to trail bikes but are designed specifically for farm work.

Farm motorcycles are different to road bikes because they have:



It is these features that make the farm motorcycle suitable for farm work.

Did you know: Knobbly tyres are designed for hard terrain, mud, wet grass, and all off-road use such as those found on farms.

Knobbly tyres are often referred to as off-road types. These tyres use deep tread to provide more traction on unpaved surfaces such as loose dirt, mud, sand, or gravel.

They have deep and wide grooves which help the tread sink into mud or gravel surfaces. The purpose of off-road tyres is to provide maximum surface area for increased stability.

Credit: www.yamaha-motor.co.nz

Suitability of the motorcycle

The motorcycle you are using must be suitable for the job you want to do. For example, motorcycles can be used to carry small to medium loads around the workplace, but an LUV (light utility vehicle) or side-by-side might be better for the job if the load:

- is difficult to balance and could affect the stability of the bike
- makes it hard to reach or interferes with the controls.

If you are going to be travelling on very wet and boggy ground, it may be that a tractor will have more grip and be less likely to get stuck.

To determine if your motorbike is suitable for the activity you have planned, consider the following factors.

- Will the bike be suitable for the terrain you are riding on?
- Will the bike manage the surfaces it will be ridden on?
- What are the weather conditions on the day and time you will be going out?
- Are you riding in the morning, afternoon, or evening when **visibility** will change?
- What is the task you need to carry out? Is there a different vehicle that might be more suitable?

Before using the bike, you must be able to answer all these questions and be confident the motorcycle is suitable for that job.

You will need to check the following to make sure the motorcycle is the right vehicle for the job.

- Brakes
- Tyres
- Load capacities.

Brakes

Brakes enable you to control a motorcycle by letting you slow down and stop. They can also be used to control the motorcycle on different surface conditions.

Having correct loads over the brakes or evenly distributed on the motorcycle will support how well the brakes work when applied.

Tyres

You will know the terrain and the surfaces that you will be riding the bike on. You will need to ensure the tyres:

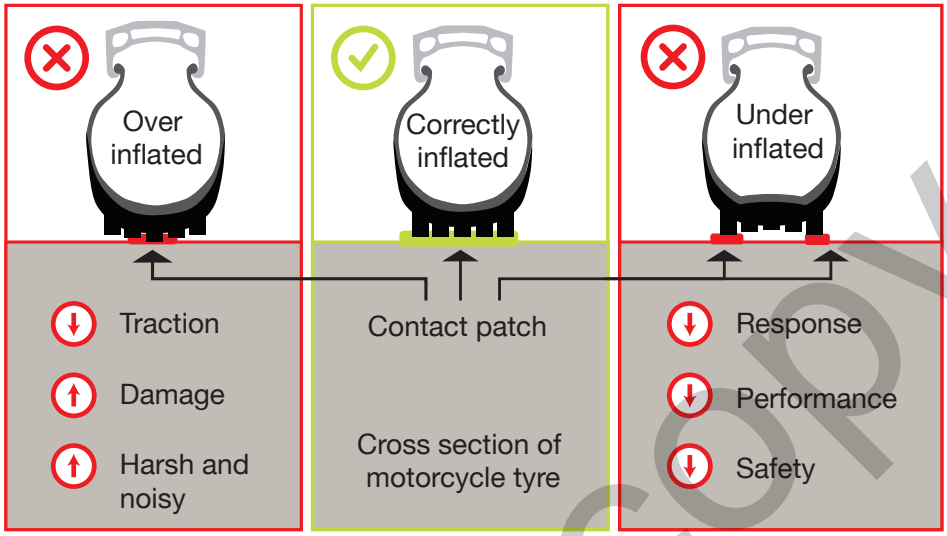
- are in good condition
- have a good tread to ensure traction
- have the right air pressure (measured as PSI) for the surface conditions and terrain.

Proper air pressure in a tyre helps to distribute the weight of the vehicle evenly across the tyre's tread pattern. This means the tyre (and the motorcycle) is at its most stable. When a tyre is under-inflated or over-inflated, it loses stability. This will impact on how well the motorcycle will:

- handle the conditions
- take a corner
- stop.

Credit: www.yamaha-motor.co.nz

Not having the correct tyre pressure can have the following effects:



Load capabilities

To be ridden safely, motorcycles must only carry loads that are within their specifications.

The load also has to be safely distributed, and not be too heavy over the front or rear axle. Overloading a motorcycle, or unevenly distributing the weight, puts it at greater risk of tipping or causing an accident.

Most motorcycles can carry a load of about 350–400 pounds or 150–180 kgs, but every motorcycle will have manufacturer's specifications which tell you how much weight the motorcycle can safely carry. These specifications can be located on the loading decals on the motorcycle.

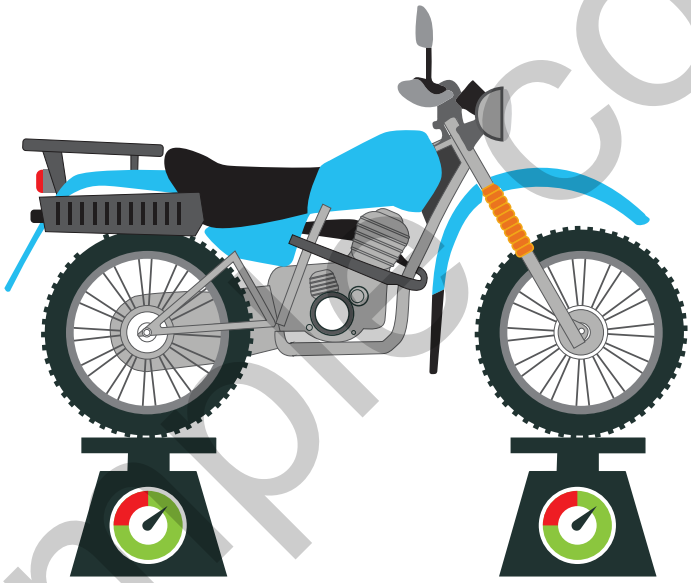
Farm motorcycles may have front and rear carriers. There are two load capacities you need to be aware of if loading the front and/or the back of the bike. These are:

- gross vehicle weight rating (GVWR) – this is the total amount of weight the motorcycle can safely carry at any one time
- gross axle weight rating (GAWR) – this is the maximum load you can carry over the front and rear axles.

The gross axle weight rating (GAWR) is the specific weight determined by the manufacturer to be the maximum allowable weight that can be placed on an individual axle.

Front and rear axles have individual gross axle weight ratings.

GAWR is the weight limit for each of your vehicle's axles. A motorcycle's axles should never be loaded beyond what the manufacturer states in the specifications for the motorcycle.



Did you know: The load you are carrying on each axle will also indicate the tyre pressure that is required to give maximum performance and safety.

Gross axle weight rating

Use the manufacturer's specifications and your workplace policies find out the following.

1. The GAWR of the motorcycle you ride.

GAWR:	

2. What is the recommended PSI of the tyres?

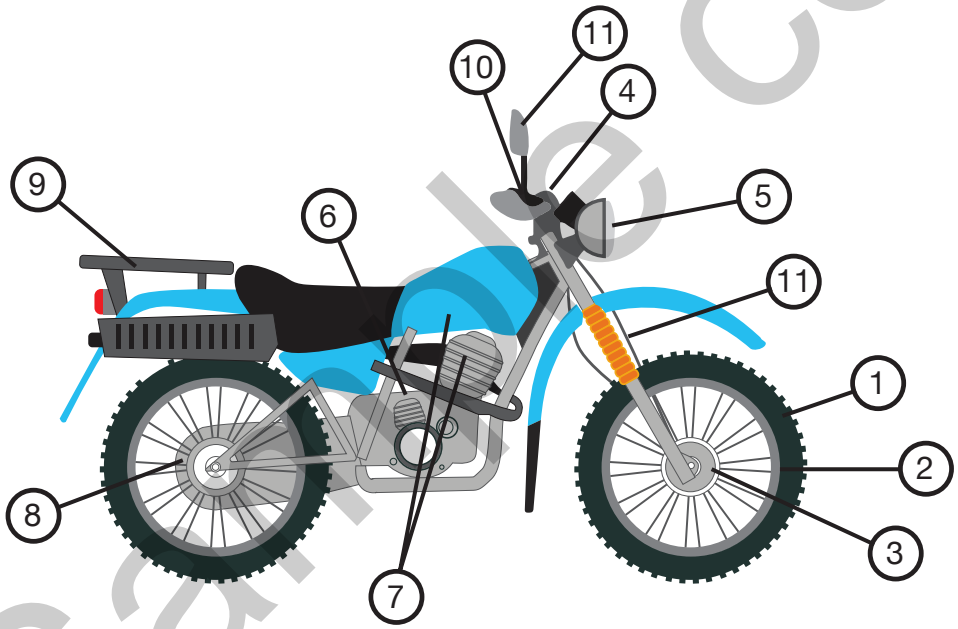
3. Explain in your own words how brakes can be affected by the load being carried and the tyre pressure.

Pre-ride safety checks

You should never get straight onto a motorcycle and ride it. It is essential to carry out a pre-ride safety check before you head off. The pre-ride check has two parts to it:

1	Checking the motorcycle before switching it on	2	Checking the motorcycle once you have switched it on.

Below is a summary of the recommended good practice tasks to undertake before riding a farm motorcycle.



Before starting the bike, check the following:

1.	Component to check	Tyres – air pressure affects braking and steering. Tread – affects traction.
	What you need to check before starting	Make sure your tyres are in good condition. Check the following features. • Check the correct PSI to front and rear tyres – the bike won't handle properly if the air pressure is too low or too high. • Check for any damage to the tyre – worn or uneven tread as this affects the bike's handling and makes it harder to control on slippery or uneven surfaces. It also affects traction and the ability to stop when braking. • Cuts, nails stuck in the tread, and cracks in the sidewalls as these can cause a tyre blowout.

2.	Component to check	Wheels
	What you need to check before starting	Check the wheels are not buckled.

3.	Component to check	Brakes
	What you need to check after starting the engine	Try the front and rear brakes one at a time. Make sure each brake, when applied, holds the bike.

4.	Component to check	Controls
	What you need to check before starting	Check the spark plug and trace wires to the battery, and check as needed.
	What you need to check after starting the engine	Make sure clutch and throttle controls work smoothly. Make sure you can operate hand and foot controls when you sit comfortably on the bike. Check that your horn works.

5.	Component to check	Lights
	What you need to check before starting	Check all light bulbs are working and the lenses are clean.
	What you need to check after starting the engine	Try your dip switch to make sure both high and low beams work. If your bike has a hazard light switch, check that it works. Try each brake control and make sure each one flashes your brake light.

6.	Component to check	Electrics
	What you need to check before starting	**Battery** Check to make sure the battery has a full charge. The battery should have 12 volts or higher with no load on it (ignition and lights off). **Fuses** Check the fuses if the motorcycle has an intermittent fault that is making the bike run roughly or completely loses power at random times.
	What you need to check after starting the engine	**Spark plugs** Where lights do not work, check the spark plugs for corrosion or damage. These will need to be replaced according to the manufacturer's specifications.

7.	Component to check	Oil, fluids, and fuel
	What you need to check before starting	Check your bike owner's manual for the right types of fuel and oil. Make sure they are at the correct levels – your engine will seize without oil. A seized engine could lock up your rear wheel and make you lose control. **Note:** • two stroke oil (two stroke bike) • four stroke oil (four stroke bike). Other fluids to check are: • brake fluid • coolant.

8.	Component to check	Chain
	What you need to check before starting	Check the drive chain or belt for lubrication, wear, and adjustment. Check you are able to visually see the chain. You may need to adjust and grease where necessary. **Note:** the manufacturer's specifications will tell you how to correctly adjust these.

9.	Component to check	Carry racks
	What you need to check before starting	Check these are attached correctly and fit for purpose.

10.	Component to check	Freedom of movement of handlebars
	What you need to check before starting	Check there is no movement. Where there is movement present you will need to tighten the bars.

11.	Component to check	Freedom of movement of handlebars
	What you need to check before starting	**Mirrors** If your bike has mirrors: • clean and adjust them before you start – it's dangerous to ride with one hand while adjusting a mirror • Adjust them outward to see around your own body. When riding on the road, you should see about half of the lane behind and as much as possible of the lane next to you. **Cables** Check the cables for kinks or broken strands. Lubricate the cables.

Running out of petrol can be dangerous, especially if you can't get off the road quickly. Know the fuel tap's position and operation. Don't ride long distances with the fuel tap on reserve. Only use the reserve tank to go back and refuel.

Pre-ride checks

For the motorcycle that you ride, what pre-ride checks do you make for each of the components listed below? What do you look for with each component to check it is operational and in good condition, and make the motorcycle safe to ride?

Component	What I look for	How I know it is safe
Tyres		
Wheels		
Brakes		
Controls		
Lights		
Electrics		
Oil, fluids, and fuel		
Chain		
Carry racks		
Other checks I make:		

Personal protective equipment (PPE)

Personal protective equipment (PPE) is all the equipment and clothing you should use and wear while operating a motorcycle at work.

You are expected to follow Worksafe New Zealand good practice guidelines. These guidelines stipulate that you should always wear:

- boots
- helmets
    - quad bike helmets if you drive at speeds under 30 km/h that meets NZS 8600
    - motorbike helmets if you drive at speeds over 30 km/h that meet NZS 5430 or AS 1698
- clothing that covers your arms and legs
- gloves
- eye protection such as goggles.

It is also recommended you wear high visibility gear especially where you work in isolation.

By not wearing a helmet, you significantly increase the chances of having a head injury if you fall or crash.

The helmet you wear must be well-fitting and able to be securely fastened.

You can keep it in good condition by following the manufacturer's care and maintenance instructions.

When moving stock through scrub you should take all possible precautions to keep yourself safe. You should wear:

- overalls
- goggles
- boots
- a helmet.

PPE you should wear at work

For each of the following situations, record the PPE you are expected to wear by your workplace.

Situation	PPE I am expected to wear for the situation
Riding in the dark	
Riding in heavy rain	
Riding in hot and dusty conditions	
Riding in frosty conditions	

Riding a farm motorcycle

To ride a motorcycle on a farm, you will need to know how to ride it over different terrain, surfaces, and environmental conditions.

Motorcycles are used to carry out lots of tasks, such as:

- checking on stock
- boundary checks
- shepherding stock
- fencing checks.

Because you are carrying out these tasks over different types of terrain, surfaces, weather, and times of day, you need to be vigilant when driving motorcycles and always apply active riding techniques. Applying active riding techniques will enable you to remain in control of the motorcycle.

You need to be confident in riding the motorcycle on different terrains and understand how environmental conditions affect ground surfaces.

Active riding techniques

Active riding techniques are actions you need to apply when riding a motorcycle. They help you to:

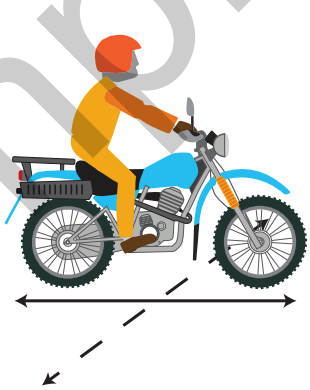
- control the motorcycle at all times
- maintain traction
- minimise the risk of damage to yourself, others, and property.

Active riding techniques rely on you knowing the capabilities of the motorcycle you are riding. To be able to apply active riding techniques you need to know:

- the correct stance to use when riding
- how to make smooth manoeuvres.

Weight transfer and stability

Active riding techniques you will need to use when riding the farm motorcycle include the following.

		
Weight transfer and body position	Stability and balance	Head and eye position

Both weight transfer and body position help you to maintain control of the motorcycle in different condition, such as:

- through corners
- riding across gradual slopes
- riding on a straight piece of terrain.

The way you transfer your body weight and position yourself while you ride allows you to:

- keep the bike stable
- maintain your balance.

Active riding techniques you can use as recommended by Worksafe New Zealand when cornering and riding on a slope include the following.

- Keeping your feet horizontal on the footrests to keep the bike stable. Taking one foot off the footrest will unbalance the bike. This can make the bike slide or fall. Balancing on the footrests improves all parts of riding and is an essential part of good riding technique.
- When riding on steep or rough ground, use your bodyweight to stabilise the bike. Do this while standing with your knees bent and your weight on the footrests.

Remember to keep your head up so you can always be looking ahead.

Correct stance

- Keep your elbows away from your body. This is the position that gives you the greatest strength.
- Keep your hips, shoulders, and arms relaxed as this will allow your body to absorb shocks and bumps as the bike hits them.
- Press your knees against the petrol tank to help balance the bike.
- Keep your feet horizontal to the foot pegs, toes pointed straight ahead with the pegs under the arch of your foot. Doing this will reduce the chance of your feet slipping from the pegs.

Making smooth manoeuvres

When braking you should use both the front and back brake at the same time. This will keep your braking even. Knowing where turns or brakes are needed will help you control the motorcycle and maintain traction. It will also help you avoid skidding or sudden sharp braking.

Knowing how the gears work on the motorcycle you ride will help you select the right gear for different situations. You want to avoid crunching the gears, over revving, or stalling when changing gear.

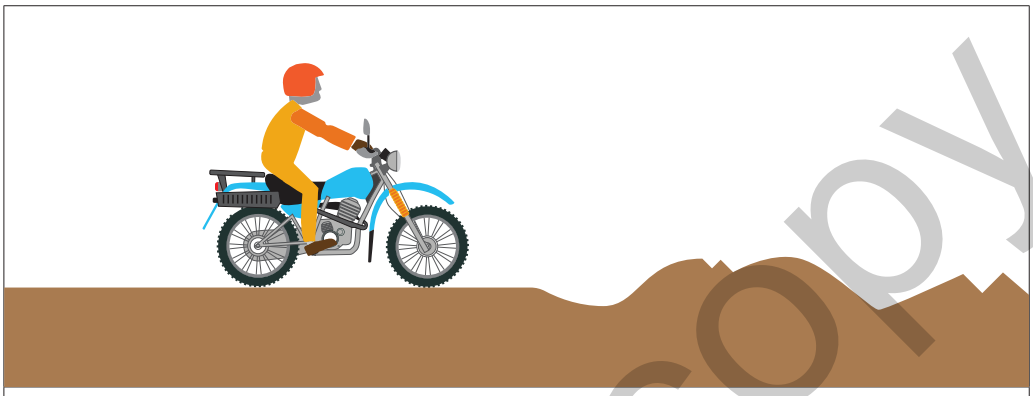
Read the situation and anticipate the gear you need to be in, then change gear in plenty of time.

Manoeuvring the motorcycle is about knowing how to use your body to help position the machine so you maintain control of it. This can mean:

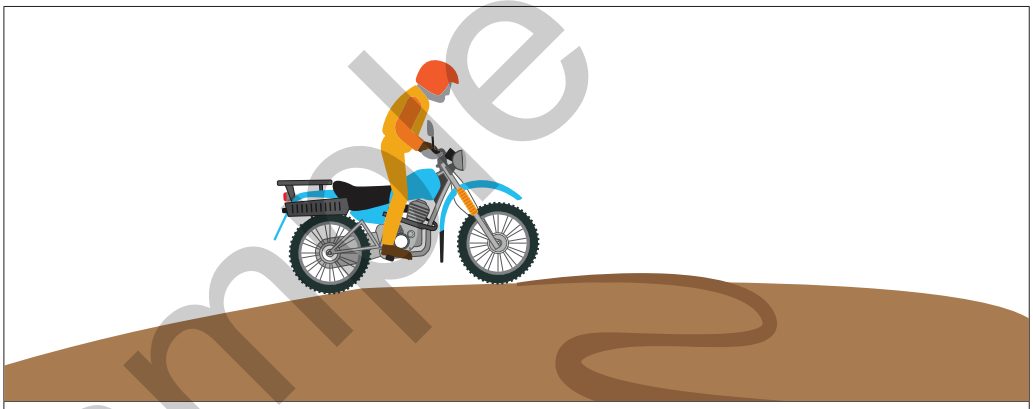
- where you put your body when riding
- where you place your weight
- how you move your body as you ride.

Reading the situation

Reading the situation means looking ahead to see where the surfaces you ride on change and if you need to use an alternative route to what you had originally chosen. For example, if it has started raining and there is surface flooding, you may need to use a different route to keep yourself safe.



Look ahead for turns and changes in surfaces or terrain



So you don't have to make sudden or sharp turns or perform last minute manoeuvres

That cause you to lose stability, traction, or result in an accident.

Reading the situation will help you to see when you need to:

- reduce speed as you change surfaces
- change your riding style such as, standing with your feet on the pegs or sitting down so you have better control.

Worksafe New Zealand advice

Worksafe New Zealand recommend these good riding techniques to help you keep control of the motorcycle at all times.

- Smooth clutch operation, gear changing, and braking.
- Avoiding sudden braking or steering.
- Placing you feet firmly on the footrests when moving. Only put them down when you stop.
- Keeping your feet horizontal on the footrests with toes pointed straight to avoid hitting the ground.
- Keeping elbows away from the body for strength, and keeping arms bent to act as shock absorbers.
- To help balance the bike, pressing your knees against the petrol tank.

You can find the full document from the Worksafe NZ website. Go to: www.worksafe.govt.nz/search/ and search for ‘farm motorcycle’.

Plan the route you will ride

You will need to plan for the:

- terrain
- weather conditions
- load you are carrying (if applicable)
- lighting conditions.

Your workplace will have a workplace map of the routes marked out. There will be main routes and alternate routes should the main route not suit the conditions or task.

Your workplace may also have a work board where you record the time you leave and your expected time back. It is important you record this information so others know where you are supposed to be. It is a good idea to record the route you plan to take so others know where to come if you breakdown or have an accident.

Riding on different surfaces

At work you are likely to be riding over different surfaces, sometimes in quick succession. This means you will need to apply active riding techniques to each situation.

Surface	Description	How to ride on them
Firm ground	Firm ground gives you the best traction. However, it can not absorb the impact of riding as easily as softer ground can. This can make you more fatigued.	• Ride normally, keeping your weight evenly balanced. • Look ahead to plan the smoothest route for your journey.

Surface	Description	How to ride on them
Muddy ground	Muddy ground can have less traction which can result in poor control. Mud hides what's beneath, so be prepared for unexpected ruts and stones.	• Plan further ahead for any change in speed or direction, and to then make this change at the appropriate time. • If the mud is not too deep and you can still stand up, use the neutral position. If you feel you are losing traction, then shift your weight to the back of the bike to help the rear wheel grip and drive. • If you are losing steering control, then try to move forward to put more weight on the front wheel, helping it to grip and steer. • Ride in a higher gear, keep the revs low, and feather the clutch when necessary.
Loose gravel	Loose gravel is a soft surface. This can cause the motorcycle to become bogged down, or the tyres to slip and lose their grip. This means that stability is reduced and the bike can wobble making it harder to control.	• Read the road ahead. • Keep your eyes on the horizon so you can see what is coming up in the condition of the gravel. • Avoid swerving or quick and hard braking. • Keep a slow and steady speed. • Ease out of the clutch and go easy on the throttle as you move out of the gravel or into the gravel.

Surface	Description	How to ride on them
Undulating race	The difference in slope can mean you need to keep moving and use the throttle appropriately to maintain traction on the uphill and downhill slopes.	• Always ride smoothly, avoiding hard braking or acceleration. • A steady, open throttle in gear keeps the bike in more control.
Pasture	Dew or grass (especially long grass) can all reduce traction. This can cause the wheels to spin and the motorbike to become bogged down or slip.	• Always ride smoothly, avoiding hard braking or acceleration. • A steady, open throttle in gear keeps the bike in more control. • Make turns as wide as possible to keep momentum. • When braking, use both brakes smoothly and a bit at a time, with more emphasis on the front brake. • Brake before cornering to avoid loss of control.
Culvert crossings	Culverts can be steep, contain water, or be boggy. This means you will be riding down and up in quick succession. The surfaces can quickly go from pasture to bog, to pasture.	• Stand with your knees slightly bent and balance on the footrests.

Parking your motorcycle

When you are not using the motorcycle it is important to make sure that it is parked in a stable position, so that it cannot fall over or become unbalanced and be damaged by surrounding property.

Your motorcycle should have a stand. Use the stand to keep the motorcycle in an upright position.

Where possible avoid parking it in soft or uneven surfaces. Protect it from the weather, such as strong wind that blows dust over the bike as much as possible.

Where possible, park your bike on hard, even surfaces.

Credit: www.yamaha-motor.co.nz

Report or fix any faults

Once you have finished using the motorcycle you will need to run a post ride check. This can include:

- checking the fuel and oil levels
- checking tyre pressures and correcting this as per the manufacturer's specifications
- charging the battery
- adjusting the chain
- changing spark plugs
- fixing punctures
- replacing cracked or worn helmet
- altering the carb settings.

You will need to report any faults to your Supervisor. You may also need to record any faults or fixes in the workshop maintenance book or other workplace documentation as per the workplace's policies.

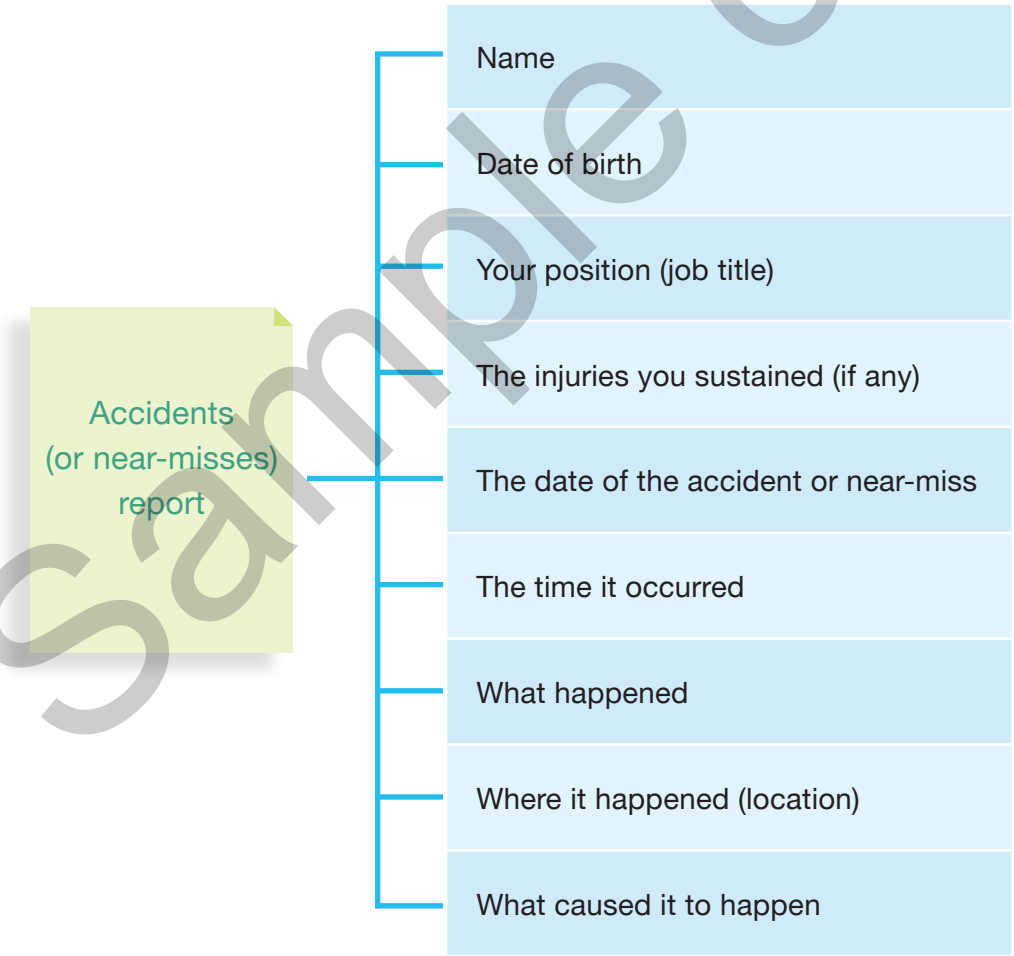
Adjusting the chain is an important part of the post ride check.

Accidents or near-misses

Even though workplaces and workers work hard to try to avoid any accidents from occurring there are times when accidents do happen. When an accident does occur, it needs to be reported. This is so your workplace can learn from the incident, what led up to it, why it happened and hopefully prevent it from occurring again.

It is a legal requirement under the Health and Safety at Work Act 2015 to record all work-related accidents.

Your workplace should have somewhere for you to report any accidents (or near-misses). This is where you will write down:



Make sure you know where to report any accidents or near-misses, and how to report them.

You need to report the accident or near-miss as soon as possible, after the incident. If you are unable to report it yourself, you need to make sure that someone else reports it for you.

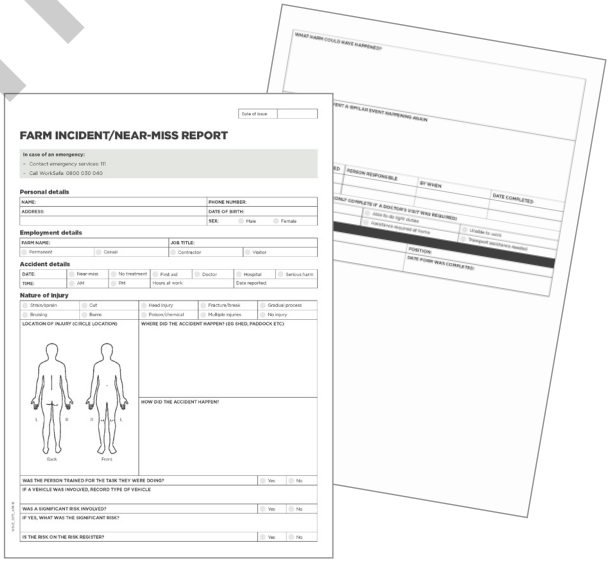
Most workplaces will require you to report your accident or near-miss within 24 hours. The reason for this is they need to review their policies and procedures.

If the accident or near-miss is the result of an identified risk, they may need to change the way they manage that risk.

If it is the result of a new, or unidentified risk, then they will need to find a way to manage that risk to prevent another accident or injury occurring.

It may mean that machinery needs servicing more regularly, or there needs to be a change in maintenance schedules.

As well as the form, some workplaces also have a board which lists the latest accidents. This means everyone is aware of what has happened and can avoid it happening again as much as possible.



FARM INCIDENT/NEAR-MISS REPORT

In case of an emergency:
- Contact emergency services: 111
- Call WorkSafe: 0800 030 040

Personal details
NAME: | PHONE NUMBER:
ADDRESS: | DATE OF BIRTH:
SEX: Male Female

Employment details
FARM NAME: | JOB TITLE:
Permanent Casual | Contractor Visitor

Accident details
DATE: | Near-miss | No treatment | First aid | Doctor | Hospital | Serious harm
TIME: | AM | PM | Hours at work: | Date reported:

Nature of injury
Graze/abrasion | Cut | Head injury | Fracture/break | Gradual process
Bruising | Burns | Poison/chemical | Multiple injuries | No injury

LOCATION OF INJURY (CIRCLE LOCATION)

WHERE DID THE ACCIDENT HAPPEN? (EG SHED, PADDOCK ETC)

HOW DID THE ACCIDENT HAPPEN?

WAS THE PERSON TRAINED FOR THE TASK THEY WERE DOING? Yes No
IF A VEHICLE WAS INVOLVED, RECORD TYPE OF VEHICLE
WAS A SIGNIFICANT RISK INVOLVED? Yes No
IF YES, WHAT WAS THE SIGNIFICANT RISK?
IS THE RISK ON THE RISK REGISTER? Yes No

Worksafe NZ incident and near-miss report template.

Reporting an accident or near-miss

1	Get the facts. Make sure you know the date, time, and specific location of the accident or the near-miss.
2	Describe the events leading up to the accident or near-miss. Give any relevant environmental conditions, such as poor visibility, noise, or bad weather.
3	Identify if anyone else was there, such as any witnesses.
4	State what you were doing at the time of the accident or near-miss.
5	Identify the task you were completing, and say if: • anything unusual happened • something that usually happens didn't • everything was the same as it usually was.
6	Give the circumstances (what PPE were you using? What tools and materials were you using?).
7	Give the specific injuries you sustained (Where were you injured? How badly?).
8	Describe the actions you took. • What were your actions immediately after the accident or near-miss? • What first aid did you **administer?** Or did someone else administer for you? Did you need to call an ambulance? • Did you call for assistance from anyone else? • If it was a near-miss, how did you avoid injury?

Reporting in your workplace

1. Your workplace will have procedures for reporting incidents and near-misses. Find this policy and highlight the procedures you must follow in the event of an accident or near-miss.

2. Attach a copy of the documentation you have completed where you have reported an incident or a near-miss.

Attach your documentation here:

Glossary

Term	Definition
Administer	To give. For example, to administer first aid, is to give first aid to a person.
Close supervision	The operation of a motorcycle under the active supervision of a Supervisor who has the knowledge and experience to ensure that the rider is safe at all times.
Flat terrain	For the purposes of this unit standard, flat terrain is defined as class A and B land under the Land Use Capability Classification, which comprises slopes between 0–7° (flat to gently undulating, to undulating terrain).
Visibility	How far you can see given the light and weather conditions.
Workplace procedures	Verbal or written instructions to staff on policies and procedures for the safe use of vehicles and machinery in the workplace.

Resource Feedback

In order to keep our resources as up-to-date and relevant as possible we would appreciate any comments, feedback or suggestions you may have with regard to this particular resource or others that you have used.

Please contact us via email **product@primaryito.ac.nz** if you have any suggestions that you feel would be useful.

Please remember to indicate the resource you are giving feedback on in your email, and please provide your contact details.

Thank you for taking the time to provide us with feedback.