Licensing

Motorcycle Riders' Handbook

Roads and Traffic Authority
www.rta.nsw.gov.au

Learner Approved Motorcycle (LAM) scheme

A trial of a LAM scheme was introduced on 6 September 2002 which allows novice riders (learner and provisional) to ride moderately powered motorcycles up to 660ml.

The list of motorcycles that can be ridden by learner and provisional riders can be obtained by:

- contacting the RTA Call Centre on 13 22 13
- attending any motor registry
- visiting the RTA website at **www.rta.nsw.gov.au**. The list can be found under *Licensing, Tests, Driving & Riding Tests, Motorcycle Rider Training Scheme*, then *Motorcycles for Novice Riders.*

Novice riders must only ride motorcycles which are shown on the RTA list.

The list of approved motorcycles will be adjusted as more motorcycles become available.

For general enquiries contact the RTA Call Centre on 13 22 13. TTY 1800 331412.

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Motorcycle Riders' Handbook

This handbook is only an interpretation of the law, made easy to understand by using plain English. Make sure you have the most recent handbook as laws change often.

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Contents

Introduction

Motorcycling can be fun, economic and safe.

Motorcycle riding can also be hazardous.

Motorcyclists are less protected than car drivers and have a greater chance of being killed or injured in a crash.

You can become a safe rider through acquiring the necessary skills and understanding of the road environment, by always being alert and defensive and by accepting that the prime responsibility for your safety on the road is yours.

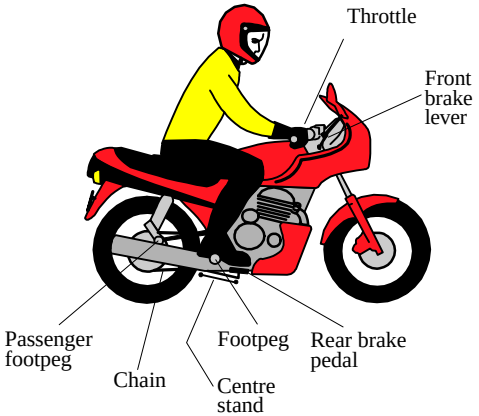
Our procedures for getting a rider's licence are designed to help you become a safe rider. The *Motorcycle Riders' Handbook*, our training programs and the testing procedures are designed to bring you up to a minimum acceptable standard. We trust you will maintain, or even further develop your standard during your riding life.

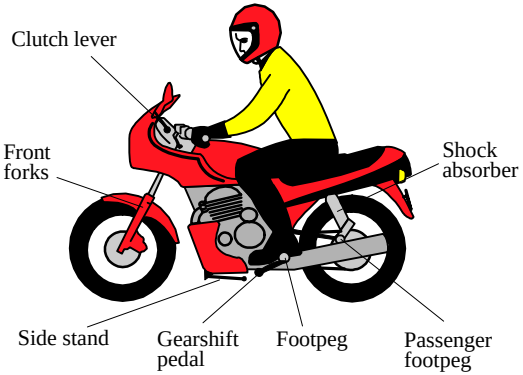
This handbook contains important information about riding techniques, how to cope with hazards and about selecting and maintaining your motorcycle. Please read it carefully.

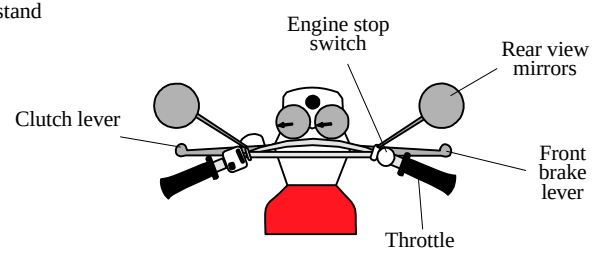
Enjoy your riding, but above all, ride to survive.

P Forward
Chief Executive
Roads and Traffic Authority
New South Wales

Motorcycle Parts







Studying this book

The contents pages at the front can help you find information quickly.

Questions at the end of each section:

- provide a check of some of the important points in the section
- show you the style of questions in the knowledge test.

The questions in this book provide a guide while studying the information. The questions in the actual knowledge test will not necessarily be the ones asked here. It is up to you to study each section thoroughly.

Do not forget to study the *Road Users' Handbook* just as carefully. It contains the rest of the information that you will need to know to pass the knowledge test.

You can get the *Road Users' Handbook* from any motor registry in New South Wales (NSW).

The meaning of many of the words used in this handbook are in the *Glossary* at the back of the book.

Licensing

Compulsory rider training - Pre-learner course

Compulsory motorcycle rider training is being progressively introduced across NSW. As an area is declared and a training centre opened, people in the area who want to get a motorcycle licence must satisfactorily complete pre-learner training before a learner licence will be issued. Motorcycles, helmets and gloves are supplied for training. The course is seven hours long (two three and a half hour sessions) over two consecutive days. The RTA provides courses at different times to suit your needs. If you live in an un-declared area, but would like to attend rider training you may do so. For more information ask at any motor registry or phone the RTA Call Centre on 13 2213.

L Licensing

To get your learner motorcycle licence in a declared area

- to get this licence you must be at least 16 years and 9 months of age
- go to your motor registry and pay the pre-learner course training fee (you get a receipt for this)
- ring the RTA Call Centre on 13 2213 to book a course
- do the course and get the *Certificate of Competency*
- take your *Certificate of Competency* and proof of identity (see *Road Users' Handbook*) to a motor registry when you take your knowledge and eyesight test (you must pass your learner knowledge test and get your learner licence within three months of the date shown on the *Certificate of Competency* or you will have to pay another training fee and do the training again)
- pay the fee to get a learner licence.

The course gives you the basic skills needed to ride a motorcycle and an introduction to safe riding.

To get your learner motorcycle licence in an un-declared area

- to get this licence you must be at least 16 years and 9 months of age
- go to a motor registry and pass the knowledge and eyesight test (you must take proof of identity, see the *Road Users' Handbook*).

The knowledge test (in declared and un-declared areas)

To get a learner licence you have to pass a computer knowledge test based on the *Road Users' Handbook* and this book. The test has a number of questions with several possible answers for each. You have to choose the correct answer.

If you are in a compulsory training area you do

this test after passing the pre-learner training and you have obtained your *Certificate of Competency*.

As well as English, the knowledge test is available in:

Arabic, Chinese, Croatian, Greek, Japanese, Korean, Serbian, Spanish, Turkish, Vietnamese

Getting experience as a learner rider

Riding any motorcycle requires thought and skill. Learner riders tend to pay too much attention to controlling the motorcycle rather than coping with what is happening on the road. This can often lead to them getting into difficulties. When you start to ride, try to restrict your riding to quieter streets or car parks close to home.

Compulsory rider training - Pre - provisional course

To get your provisional motorcycle licence in a declared area:

- you must have held your learner licence for at least 3 months and no longer than 6 months (your learner licence only lasts 6 months)
- go to a motor registry and pay the pre-provisional course fee and a skill test fee (you will get a receipt for these)
- ring the RTA Call Centre on 13 2213 to book a course
- do the course and pass the skill test to get the *Certificate of Competency*
- take the *Certificate of Competency* back to the motor registry to get a provisional licence
- pay the fee to get a provisional licence.

This training is available to all learner licence holders who have held their licence for 3 months. The RTA does not provide a motorcycle for the course - you must provide your own registered, roadworthy motorcycle.

L Licensing

In the course, qualified motorcycle instructors take you onto public roads to teach you how to ride safely.

Make sure you book in for your provisional training at least 4-6 weeks before your learner's licence expires. If you do not pass your provisional training and get your provisional licence before your learner's licence expires you will have to go through the entire program and pay all fees again.

To get your provisional motorcycle licence in an un-declared area

You do not have to do training (but if you want to, you can).

- you must have held your learner licence for at least 3 months and no longer than 6 months (your learner licence only lasts 6 months)
- go to a motor registry and book a riding test (see the *Road Users' Handbook* for details)
- take and pass the riding test
- pay the fee to get a provisional licence.

It is against the law to attempt to influence the results of your knowledge or riding test by offering any money or gift to the Testing Officer or Instructor.

Mature age riders

If you are over 30 years of age and hold, or are eligible to hold, a gold driver's licence you may proceed directly from a learner rider's licence to an unrestricted rider's licence.

While on your learner rider's licence you must observe the normal learner rider restrictions including the motorcycle engine capacity and power to weight ratio restrictions. Mature age riders must still attend compulsory rider training, if available in your area. However, you may proceed to the pre-provisional level of rider training or, if you do not live in a declared area, the rider test, without having

held your learner rider's licence for the normal minimum of three months.

Please note that regardless of eligibility for the mature age exemption, a rider must have held a rider's licence for at least 12 months before being permitted to carry a pillion passenger (see page 58 - *Carrying passengers and loads*).

Unlicensed riding

There are heavy penalties for riding without the correct licence. The most serious types of offences are always dealt with by a court. Other offences will result in either an on-the-spot fine or a court case. There could be a fine of up to $2000, a jail term of up to six months and a period of disqualification from riding.

When your licence may be checked

Police officers may check that you are correctly licensed when:

- you are involved in an accident, whether you were at fault or not
- you have been stopped because you committed a traffic offence
- you have been stopped for a random breath test either by a stationary breath testing unit or by a mobile breath testing unit.

Carrying your licence when riding

You must carry your licence with you when you are riding. This helps the Police to check that riders are correctly licensed. There is an on-the-spot fine for not having your licence with you.

Choosing your motorcycle (on a learner or provisional licence)

There are many things to think about when you choose a motorcycle such as:

- what type of motorcycles the law will allow you to ride
- where you want to ride and what style of riding (off-road, on-road etc.)
- what size motorcycle is best for you

- the differences between different sorts of motorcycles
- cost to buy and run motorcycles.

The type of motorcycle

Motorcycle engine "size" refers to the capacity measured in millilitres (mL). The more mLs the larger the engine.

In NSW, learner and provisional motorcyclists are only allowed to ride motorcycles of 260 mL or less, with a power to weight ratio of 150 kilowatts per tonne or less. For further details contact the RTA Call Centre on 13 2213.

Style of motorcycle

Motorcycles can also be grouped by style. The three general styles are:

- road
- dual purpose - trail motorcycles
- special purpose.

Road motorcycles - are designed for sealed (tarred or cement) roads. Their tyres are designed for most road conditions. Road motorcycles include commuter, touring and sports motorcycles. If you are a new rider, begin with a small commuter, or touring motorcycle. When you are a little more experienced, if you wish, choose a sports motorcycle.

Dual-purpose motorcycles (trail motorcycles) - are made to be used on dirt and tarred areas. Most trail motorcycles are light or medium sized. They differ from street motorcycles in several ways:

- they have suspension built to go over rough ground
- they have a higher ground clearance, which means the seat is higher off the ground
- their tyres have tread to ride on sand, dirt, mud etc. They are also good on the road when it is dry, but you may need to take extra care when you ride in the wet.

Generally, light and medium sized trail motorcycles are not as good as road motorcycles for long distance highway use.

You must be careful where you ride these motorcycles. Your motorcycle must be registered and insured unless you **only ever** ride on private property. Bush tracks may be public roads. If you are unsure if where you ride is private property or not, ask the local Police.

Special purpose motorcycles - a variety of motorcycles are available for competition. These motorcycles are generally not designed to be used on public roads and you may not be able to register them.

Your size

You may have difficulty controlling a motorcycle that is too high or too heavy for you. Do you feel comfortable when you sit on the motorcycle with the stands up? If the answer is no, the motorcycle may be too big for you to handle easily and safely.

Your strength

There will be times when you will have to push your motorcycle in and out of small places (such as a small parking place). Your motorcycle should be light enough for you to push, place on the centre stand and park easily. Can you push your motorcycle in a figure eight (8) without losing balance or struggling?

Setting up your motorcycle

You must make sure that your motorcycle fits you. Adjust the handlebars, then the hand and foot controls so that you can reach and use them quickly and properly. Check that the clutch, front brake and rear brake work according to the manual.

The gear change lever should also be in a comfortable position for changing both up and down gears.

Questions

1. What is the maximum engine capacity (mL) motorcycle the law will allow you as a learner or provisional licence holder to ride?
2. When setting up your motorcycle, what are the controls you should check?

Feeling well, riding well

Attention

It is very important to concentrate while you are riding. If your mind starts to wander and you start to think of things not related to riding safely, you may fail to take the necessary action that could stop you crashing.

Alcohol

Drinking and riding is extremely dangerous. Many road deaths involve alcohol. Riding a motorcycle requires a lot of attention, skill and judgement. It also requires a good sense of balance. Alcohol affects all of these skills. Alcohol also affects your vision, making riding very dangerous. It becomes difficult to see things clearly and it affects your ability to judge distance. Many riders with blood alcohol levels well below the legal limit have been involved in crashes. It is hard enough to ride a motorcycle safely when you are not affected by alcohol. Do not drink and ride.

The *Road Users' Handbook* contains information on alcohol and riding or driving that you must know.

Other drugs

Many drugs affect your ability to ride a motorcycle safely and well. This includes prescription drugs (drugs that you cannot buy unless your doctor gives you a script) as well as illegal drugs, and some drugs such as cold or allergy tablets. Such drugs can leave you

weak, dizzy, drowsy or slow to react in an emergency. Make sure you know the effects of any drug before you attempt to ride. Check with your doctor or pharmacist and read the label to make sure the medication will not affect your riding. The *Road Users' Handbook* contains further important information about drugs.

Fatigue (being tired)

Riding a motorcycle is much more tiring than driving a car. When planning a trip, keep in mind the effects of fatigue on your control of the motorcycle.

For more information of fatigue see the *Road Users' Handbook*.

Here are some extra ways for motorcyclists to prevent fatigue:

- dress to fully protect yourself from wind, heat, cold and rain as they are tiring
- a properly fitted screen or fairing on your motorcycle can also help provide protection
- limit your riding distance to the length of time with which you feel comfortable

Some signs of fatigue are:

- feeling stiff or cramped, usually in your fingers, bottom or knees
- difficulty concentrating on riding
- sore and tired eyes
- drowsiness (tiredness).

If you have any signs of fatigue stop immediately and rest.

Questions

1. How can you find out if any medicine or drugs you are taking might affect your ability to ride?
2. How can you tell if you are fatigued?

Preparing to ride

Mental preparation

When you are preparing to ride, you must put all thoughts unrelated to riding out of your mind. Aggression, frustration and work or home pressures can take your mind off riding safely.

Dress to be seen (See 'Being Seen')

The more visible you are, the more likely it is that other drivers will see and try to avoid you. When riding at night use reflective stripes or tape to make yourself easier to see.

Wearing the right clothing

Wearing the **right** protective clothing can:

- greatly reduce injury in a crash
- protect you from the weather.

Helmet

The most important piece of personal equipment for a motorcycle rider is a motorcycle helmet. The law requires all motorcyclists and their pillions (passengers) or sidecar passengers to wear helmets of a type approved by the RTA. It must have an Australian Standards AS 1698 sticker.

There are many types and styles of motorcycle helmets available, and their prices vary widely. A main choice is between an open face or a full face helmet.

Although an open face helmet might be lighter and feel less restrictive, full face helmets offer better eye, wind, sun and injury protection. For long trips you will find a full face helmet the most comfortable to wear.

Helmet check list

- your helmet should be no more than five years old

- it should fit comfortably but not too tightly (avoid helmets that fit loosely)
- fasten the chin strap and have it properly tightened. If it is not, the helmet can come off in a crash
- replace your helmet after a crash or after dropping it onto a hard surface
- **never buy a second hand helmet**
- replace your helmet if you find cracks, loose padding, worn straps or bare metal
- the best way to clean a helmet is with soapy warm water
- never use petrol, (or any other petroleum product) on any helmet as they can weaken it (this is especially true of helmets with a polycarbonate shell) or on any internal linings
- do not use paint, or stickers on your helmet as they may weaken the shell.

Eye protection

Your eyes need protection from the wind, dust, rain, insects and stones thrown up by other vehicles. Eye protection for motorcyclists is one or a combination of the following:

- a visor (face shield) attached to your helmet
- goggles
- some screens or fairings attached to your motorcycle may help to keep your face out of the wind. Whether you choose to ride with the comfort of a screen or not, it is best to wear a visor or goggles to protect your eyes.

If an insect or small rock flies into your face it will distract or injure you. For the best protection you should wear a visor or motorcycle goggles.

Visors or goggles should be:

- clean and not scratched
- securely fastened

- shatterproof (preferably meeting Australian Standards AS 1609)
- well ventilated to reduce fogging
- made to protect your eyes from dirt, bugs, dust, water and other objects
- made with clear lenses for use at night (dark or tinted lenses can make it a lot harder to see at night).

You can use sunglasses or prescription glasses under your visor for riding. Do not wear your sunglasses at night.

Prescription glasses or sun glasses alone do not provide proper eye protection on a motorcycle, in fact, lenses made of plastic rather than glass are preferable.

Gloves

If you fall it is a natural reaction for your hands to reach out to the ground to stop the fall. To reduce damage to your hands should you fall, wear leather gloves designed for motorcycle use. Glove styles affect comfort and the ability to ride a motorcycle, even for short periods. Thick gloves help reduce the effects of cold but can make it harder to properly use your hand controls. Seamless palms on gloves will help prevent blisters, and gauntlets (long gloves) will keep cold air from going up your sleeves. Gloves should fit comfortably but not too tightly when you grip the handlebars. Consider wearing good quality dish washing gloves over your ordinary summer gloves in wet weather, to keep the leather dry.

Footwear

Injury to your feet or ankles can be very bad even in a minor fall. The best footwear is boots which provide ankle protection. Choose boots which have defined heels and rubber soles. Do not ride in joggers or basketball boots, or worse still, in thongs or bare feet. Shoes or boots with laces may catch on footpegs or gear levers leading you to lose control when stopping.

Jackets, pants and accessories

Proper clothing provides protection against heat loss and skin injury. If you wear ordinary clothing you will almost certainly feel uncomfortable. Your clothing should:

- fit comfortably
- keep you warm and dry
- completely cover your arms, legs and body.

Jackets with snug cuffs and waist are best to keep you warm. Even in warm weather, constant exposure to the wind may make you very cold. This condition, known as hypothermia or “wind chill”, can reduce your ability to concentrate and slow your reaction time. For this reason, windproof clothing and warm layers of clothing are essential. In hot weather leave your leathers on and wear less clothing underneath. Good quality leather clothing made for motorcycling provides the best protection in a crash. Waxed cotton, vinyl and other sturdy synthetic materials can also be good provided you do not wear them against your skin.

Other protective options you may want to use are:

- back protectors to protect your spine
- kidney belts to support your lower back and help stop heat loss
- heated handle bar grips
- demister visors.

Checking your motorcycle

There are many things on the road that can cause trouble and it is your responsibility to make sure that your motorcycle is not one of them. If there is anything wrong with your motorcycle, the time to find out is before you are on the road. Here are the things that should be checked before every ride.

Tyres

Keep them in good condition:

pressure - your motorcycle will not handle properly if the air pressure is too low. Check the owner's manual for the correct tyre pressure

tread - worn or uneven tread can make your motorcycle hard to control, particularly on slippery roads

damage - check for cuts or nails in the tread or cracks that occur through age. Any damage or excessive wear could result in a "blow out" of a tyre. This can be extremely dangerous.

Controls

Make sure your controls are in working order before you start riding:

brakes - try the front and rear brakes one at a time before starting to ride. Make sure each one works

clutch and throttle - make sure these controls work smoothly. All major controls should quickly return to the normal position when you release them

brake, throttle (accelerator) and clutch cables - check the cables for kinks or broken strands. Make sure cables are regularly lubricated (oiled). If a cable breaks it could be dangerous.

Lights

Keep them clean and check them regularly:

indicators - check all four turn signal lights before you ride. Make sure that they flash when they are turned on, and are bright enough to be seen by other road users.

head light - check your head light and tail light before riding. At night, try your dip switch, the switch used to change between high and low beam, to make sure both lights are working. Also check your head light

flasher switch (flashes the headlight on and off)

brake light - try each of your brake controls and make sure that your brake light comes on as soon as the brake pedal is touched.

Horn

Try the horn. You need to be sure it is going to work when you need it.

Chain

Make sure the drive chain is properly adjusted (your owner's manual will explain how to correctly adjust it), and oiled. When you oil it, do so after a ride or after cleaning and make sure you do not accidentally spray any lubricant onto the tyre.

Mirrors

Clean and adjust both of your mirrors before you ride; it is dangerous to adjust your mirrors while you are riding. Adjust each mirror so you can see about half of the lane behind you and as much as possible of the lane next to you. Use them regularly.

Petrol and oil

Check petrol and oil levels before you start. Running out of petrol or forgetting to turn the fuel tap on can be dangerous if it happens when you need power quickly. Do not ride with the fuel tap on "reserve" unless you need to.

Lack of oil can cause your engine to "seize". Engine seizure could also lock your rear wheel and cause you to lose control. If your engine does seize, immediately squeeze the clutch lever (this allows the rear wheel to spin), keep the clutch lever squeezed and brake to a safe stop.

Special check for unfamiliar motorcycles

Make sure you are completely familiar with the motorcycle before you ride it. If it is a borrowed motorcycle, check it in the following way:

- make sure it is registered and legal
- make sure you are licensed to ride it
- make all the checks you would on your own motorcycle
- find out where the turn signals, horn, headlight switch, fuel tap, and engine cut-off switch are
- make sure you use them without having to look for them
- check the controls
- make sure you know the gear pattern (which way the gear lever goes to change up and down)
- use the throttle, clutch, and brakes a few times before you move off. Even on motorcycles that are similar, controls may give different results. Ride very carefully until you are familiar with the way the motorcycle handles. For instance, take turns slower and give yourself extra stopping distance.

Questions

1. How many impacts is a helmet designed for?
2. Do you need other eye protection when riding if you already wear prescription glasses?
3. Apart from a helmet, what other protective clothing should you wear?
4. What should you see in each mirror fitted to your motorcycle?
5. What should you do before riding an unfamiliar motorcycle?

Control for safety

Good control of your motorcycle can save lives and prevent injuries. You have to be able to confidently make it go, change direction and stop. This handbook will not tell you all that you need to know or how to control direction, speed, or balance. Only practise or a good training school can do that. However, this section will tell you a few things to help you keep the control you need to avoid crashes.

How you sit on your motorcycle

To control a motorcycle well, your body must be in the correct position:

- sit so you are close to the fuel tank to help weight distribution on the motorcycle
- your back and stomach muscles should be able to support your upper body without the help of your arms. This allows the top half of your body to be flexible so that you may lean at different angles to the motorcycle when necessary
- use your arms to control the motorcycle rather than to hold yourself up
- a good riding position should feel comfortable, allowing you to move around on your motorcycle and have fast, effective use of the controls without affecting the balance
- do not grip the handle bars too firmly. Start with your wrists slightly lower than your knuckles. This reduces the chances of you using too much throttle early in the learning process. It is also a very comfortable position for riding long distances. To reach the clutch and brake levers your wrists should not have to move
- your arms should be relaxed and bent at the elbows. Bending your arms allows you to turn the handlebars with your arms and not your shoulders. As well as being more

comfortable, this position gives you more strength and is less tiring. It also allows your body to absorb any shocks coming from the front wheel. If your elbows are straight or stiff you can easily lose steering control on rough roads

- press your knees and thighs lightly against the tank. This will help you in controlling and steering your motorcycle. Sticking your knee out is definitely not a good or efficient style of riding on the road
- keep the arches of your feet on the correct footpegs. A firm footing is important to help you keep balance. Try not to take both feet off the footrests while you are riding as this can reduce your balance. Keep your feet relaxed and close to the controls. This lets you use them quickly if you have to. Do not use your toes to find how far you are leaning. If you let them drop down, they may get caught between the road and the footpegs.

Turning

New riders tend to have more trouble turning than experienced riders. The only way to learn how to make good, safe turns is to practise:

- turn slowly; novice motorcycle riders often take turns too fast. If you turn too fast you could cross into another lane of traffic, run off the road or brake too hard and skid out of control
- approach turns very carefully, slow down before you turn, and increase your speed gradually coming out of a turn.

Steering

There are several ways to make a motorcycle change direction. In this handbook we will be looking at some basic ways.

When riding very slowly - steer by turning the handlebars in the direction you wish to go. Allow the motorcycle to lean in the direction of the turn, maintaining your balance.

At road speeds - the motorcycle must lean towards the inside of the turn to go around a corner, and normally you would lean with the motorcycle. For instance, to go right:

1 you would press on the right handlebar to begin the turn

2 then lessen the handlebar pressure once the angle of lean has been reached

3 straighten up from leaning to the right by gently pressing on the left handle bar

At road speeds, the sharper the turn or the faster you ride, the more both you and the motorcycle must lean.

You and the motorcycle work together to keep balance. Sometimes you may have to lean further than the motorcycle, sometimes you may lean less. This could be used to change direction in a corner.

While leaning the motorcycle, it is important to keep your head vertical and eyes level with the horizon. This helps you to keep your balance and see where you are going.

Turn your head to look where you want the motorcycle to go. Without changing the position of your head, scan the planned path by sweeping with your eyes.

Braking

Brakes only stop wheels, but it is the grip of the tyres on the road that stops your motorcycle. Therefore, when you stop, you need the largest possible amount of tyre gripping (largest contact patch) the road surface. To brake best, the motorcycle needs to be upright and travelling in a straight line. When you brake firmly and correctly, the front tyre contact patch gets larger and provides most of the grip that stops your motorcycle.

Whatever the conditions, a car or truck has the ability to brake better than a motorcycle.

Your motorcycle has two brakes:

- a front brake that you use by squeezing the front brake lever with your hand
- a rear brake that you use by pressing down on the rear brake pedal with your foot.

The front brake is more powerful than the rear brake, and you need both of them to stop well.

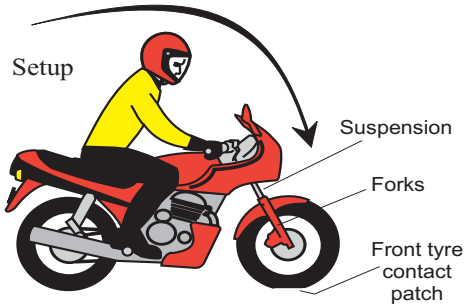
You must be careful when using the front brake. If you grab the brake lever you may lock the front wheel causing it to skid. This is most likely to happen if you are caught by surprise, or are on wet roads or poor surfaces. If your front wheel locks, you can unlock it if

you immediately release the brake lever. You then must reapply it again, gently. However, if you learn to use both brakes properly, there is no danger.

Progressive braking

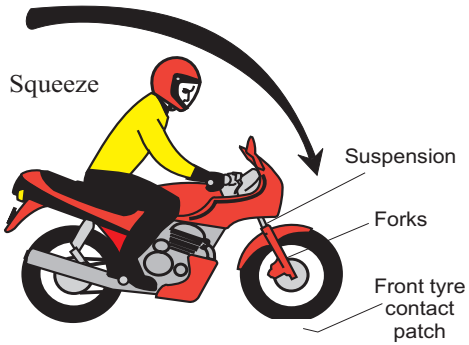
Progressive braking is the best method of braking. It is:

- set up
- squeeze
- ease



Set up

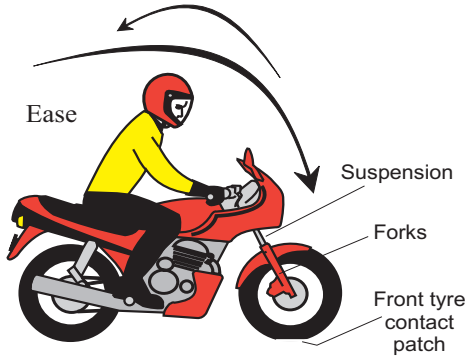
By quickly but lightly applying both brakes, (using four fingers on the front brake lever) transfer the weight and energy of the motorcycle down through the front suspension to push the front tyre road contact patch onto the road more firmly (the front suspension will compress slightly).



Squeeze

As the contact patch gets a better grip on the road, you can then squeeze the front brake lever harder. Squeeze gradually, squeezing the front brake lever more to get even better grip on the road surface. Depending on the weather, the surface, the type or loading of the motorcycle, the rear brake may not take much more pressure before skidding occurs.

Ease



Ease off both brakes before you come to a stop or the brakes will lock up causing the motorcycle to skid.

Good progressive braking allows you to brake firmly and safely in a short distance.

Some important things to remember about braking:

- once a brake has locked you have lost control of that wheel
- practice progressive braking every time you

stop

- the set up must be quick, using four fingers on the front brake lever, and the squeeze must be gradual
- with constant practice you are ensuring that when you need to stop in a hurry there is less chance of a wheel locking because you will react the same way as you practised (setup, squeeze and ease)
- use both brakes every time you slow down or stop. If you use only the rear brake for "normal" stops, you may not have enough skill to use the front brake properly when you really need it
- set up with both brakes at the same time, and then squeeze the brake according to the road conditions. If you **grab** - you could **lock up.**

Straight line braking

When brakes are used properly, motorcycles have good braking potential.

To use your brakes best your motorcycle must be upright and travelling in a straight line.

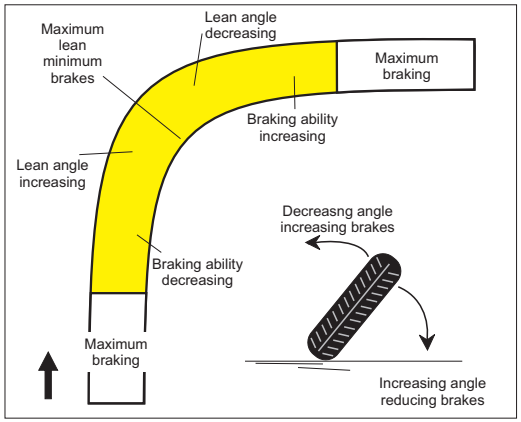
There is no difference in your braking action from a comfortable routine stop to bringing the motorcycle to a stop in the shortest possible distance.

Braking in a curve

The most important thing to keep in mind is that it is best to slow down before you begin leaning for a curve.

Use progressive braking to slow down as much as you need before leaning.

If you must brake in a curve, remember that some of the tyre's grip is being used by the motorcycle to lean, therefore there is not as much tyre grip available to brake with.



If you realise you are going through a curve too quickly, the setup and squeeze is the same; only the amount you squeeze the brake lever varies.

To brake in a corner the motorcycle needs to be upright and travelling in a straight line. Be sure there is enough room on the road to do this.

Motorcycle upright, set up the brakes, and then squeeze.

Braking in a curve requires greater care because the greater the lean of your motorcycle, the more likely your wheels will lose traction when you apply the brakes.

If you must brake in a curve, use very limited braking while the motorcycle is leaning over. Applying either brake too hard will result in you losing control.

Changing gears

There is more to changing gears than simply getting the motorcycle to accelerate smoothly.

Changing down gears

It is important to change down through all the gears as you slow down or stop. This way you are always in the correct gear and you will have enough power to accelerate quickly if need be.

Make sure you are going slowly enough when you change into a lower gear. If you are going too fast, the motorcycle will lurch and the rear wheel may lock up. This is more likely to happen:

- **going down a hill** - the motorcycle tends to get gradually get faster going down a hill
- **changing into first gear** - on many motorcycles, the speed range for first gear is very low.

Under these conditions, you may need to use the brakes in order to slow down enough to change down safely.

Gear changes in a turn

Do not change gears up or down in a turn. A sudden change in power to the rear wheel can cause it to lock or spin, resulting in a skid. It is best to change gears before entering a turn.

Starting on a hill

It is harder to start a motorcycle on a hill than on flat ground, because it can easily roll into someone behind or in front of you, or stall. Here is what you should do:

- use either the front or rear brake to hold the motorcycle while you start the engine
- hold the front brake on and select first gear
- change to the foot brake to hold the motorcycle (this allows you to use the throttle and clutch)

Control for safety

- open the throttle a little for more power, holding the foot brake on
- ease the clutch lever out to friction point (until the engine starts to drive the motorcycle forward) without stalling the motor
- hold the clutch lever still and then release the rear brake slowly
- once you are moving take your time in easing your clutch fully out and placing your left foot on the footpeg.

Questions

1. How should you brake to stop normally?
2. If you need to stop quickly while in a turn, what action would you use?
3. If you are going to make a turn, when should you apply the brakes?
4. If you have to change down for a turn, when should you do this?

Being seen

Car drivers involved in crashes with motorcycles often say that they did not see the motorcycle. From the front or from behind a motorcycle is about one-third the size of a car. The rider can, however, make the motorcycle more noticeable.

Whatever the situation, never assume a driver has seen you. Regardless of your skill level, ask yourself the following questions when riding your motorcycle:

- can I see far enough around me for the speed I am going?
- am I being hidden from view?
- am I being seen by other road users?
- am I as safe in this position as I can be?

Movement

Movement across the width of your lane can help to attract other drivers' attention. (See *Space to the side*)

Clothing

Bright or fluorescent coloured clothing and helmets can help make riders more noticeable. A large yellow, white or orange coloured area is more easily seen than other colours. Reflective tape on your clothing and a well polished motorcycle may also help others see you. If you do not wear bright coloured clothing, at least wear a reflective vest at night (this is more noticeable to drivers behind you than your tail light). Become aware of the colours that are around you. If your colours match your surroundings you will blend in. For example, if a black van is behind you and you are riding a black motorcycle and wearing black clothing, it is unlikely that you will be seen from the front. Whatever you wear and whatever the surroundings, position and colour contrast (e.g. black on white) improve your chances of being seen.

Headlight

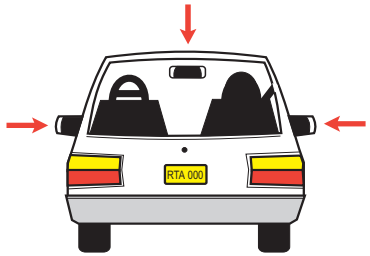
To make yourself more visible to oncoming vehicles, keep your headlight on low beam during the day. Motorcycles are usually more noticeable to oncoming drivers when their headlights are turned on than when they are not. Do not use high beam during the day as it can be dangerous to other road users by shining into their eyes. Use your headlight flasher in situations where others may not have noticed you. But beware, flashing your headlight can be taken to mean one thing to you and something else to others.

Lane positioning for safety

You should use all your lane depending on the situation. Always ask:

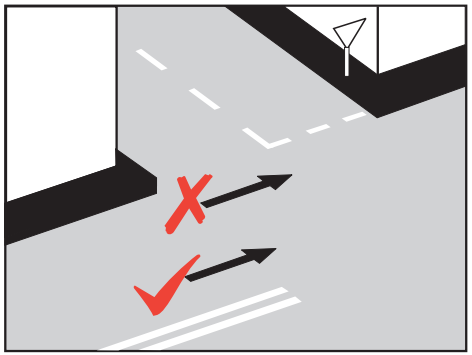
- can other road users see me where I am in my lane?
- can I see enough from where I am in my lane?
- if I move within my lane how will it improve or reduce my safety or visibility?
- am I riding in another driver's “blind spot” (see *Looking ahead - Position*).

When riding behind another vehicle try to make eye contact with the driver in their rear vision mirror so your chances of being seen are increased.



When you approach an intersection with a restricted view of a side street, try to move away from the potential danger area. For example, move to the right of your lane as you approach a corner on the left; as in the picture

below. If you cannot see everything you need to, slow down.



When an oncoming car seems ready to turn across your path:

- check your mirrors and slow down by using your brakes as you approach it. This gives the driver more time to see you, reduces your stopping distance if you have to stop quickly, and gives others behind you an early warning that you are slowing down
- do not rely on eye contact with the driver to guarantee you are seen. This usually creates confusion to both the rider and the driver about each other's intentions
- move across your lane away from the turning car. Increased space reduces risk
- if there are cars blocking the driver's line of vision, take extra care.

There are other times when you will need to change your position on the road to remain safe, depending on traffic and road surface conditions. (See *Looking for trouble and Keeping your distance*.)

Parking

When you park, angle the front of your motorcycle away from the kerb so other motorists can see it. You may angle park in any legal parking area (whether it is marked for parallel or angle parking).

When you park:

- the rear of the motorcycle must be as near as possible to the edge of the road
- face the motorcycle in the direction of the traffic on that side of the road
- the motorcycle must not stick out past the line of other parked vehicles as it could disrupt traffic flow.

Horn

The horn on a motorcycle does not draw very much attention to you, but it is better than having no horn. Be ready to use it in a situation which could become dangerous. If you use your horn, be prepared to use your brakes as well. For example, if a car in the next lane decides to pull into your lane and you do not think it has seen you, give a friendly “toot” on the horn. After checking your mirrors either slow down, speed up or change your position in the lane. Do not be afraid to use your horn if you have any doubts about what other road users might do.

Signals

The signals you use as a motorcycle rider are similar to those used by a car driver. However, signals are far more important to you as a rider because a motorcycle is such a small vehicle that any light that flashes helps attract attention.

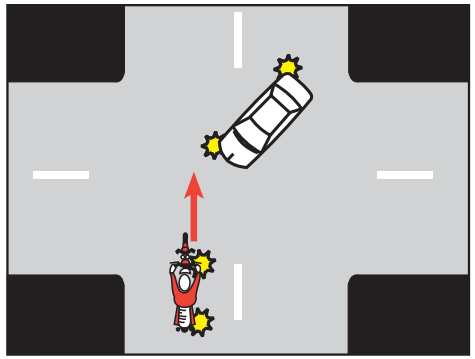
Indicators

Always use your mirrors before using your indicators.

By indicating, you tell others what you intend to do. Always use your indicators when you move off and when you change lanes. Allow enough indicating time to warn others around you so they can see your signal and react.

Because indicators flash, they help make you more visible. A driver behind you is more likely to see your indicator than your tail light. Therefore, it is a good idea to use your indicators even when your intentions are obvious. For example, if you use your indicators on a freeway entrance ramp, it is more likely that cars on the freeway will see you.

Be careful not to leave your indicators on when they are no longer needed. If you leave them on, a driver may think that you plan to change lanes or turn, and may drive into your path (see the picture below). Check your instruments to see if you have left your indicators on after using them. This check should be part of normal riding and you should do it as soon as possible after changing direction.



Brake light

Motorcycle brake lights are not as noticeable as car brake lights. Adjust your brake light to come on just before the brakes start to work.

You can draw attention to your brake light by tapping on the brake pedal to flash the brake light before you slow down.

Flash your brake light as a signal that you are going to slow down when:

- you are being closely followed
- you are making a right turn off a high speed highway
- you are slowing down at some place where other road users would not expect it.

Larger vehicles

Drivers can see another car, truck, or bus more easily than they can see a motorcycle. Riders must realise that at times they may be hidden from view when alongside a larger vehicle. When crossing at an intersection, roundabout or other dangerous place, be sure the driver of the larger vehicle is not about to make a turn across your path from the next lane. Try not to cross an intersection in the driver's blind-spot.

You could have the brakes on setup, ready for immediate action.

Do not move up on the vehicle's left side unless you are in a marked lane and you are sure they are not going to turn left.

Questions

1. During daylight, what is a way to improve your motorcycle being seen by oncoming drivers?
2. Why should you check that your turn signal has stopped flashing after a turn?
3. When you merge into traffic, what can you do to make sure you can be seen?
4. When a rider is boxed in by other vehicles, what actions could reduce the risk?
5. When following a car, where should you position your motorcycle?
6. You can make it easier for other drivers to see you. Which of the following ways is a good idea:

- Wear fluorescent coloured clothing and helmet?
- Ride in a position that allows the driver to see you in a rear view mirror?
- Ride with your headlight on low beam during daytime?
- Maintain space around your motorcycle?
- Try not to blend in to your surroundings?
- All of the above?

Looking around

Scanning and planning

Nothing you do will ensure that others will see you. A good rider is always “looking for trouble”. The best way to stay out of trouble is to see it before it happens.

In cities and towns, look a full block or more ahead. On the highway, look as far ahead and behind as you can - this gives you plenty of time to plan and adjust for problems. The further you look ahead the more time and distance you have to respond. By scanning and planning you can avoid panic stops or sudden swerves that can cause even more trouble.

When scanning, look as far ahead as possible, then work your eyes back down the road toward you. Then check your instruments and then behind you by using your mirrors. By turning your head slightly to look into the mirror your chances of seeing a vehicle that may have moved into your blind spot are better. You will still need to do a head check (see next section *Head checks*) to check the blind spot if you are going to change lanes or direction.

Use your height advantage. Look over or through the car in front of you for cars stopping or turning ahead.

Do not focus your eyes on any one thing for too long. You should scan continuously whenever you are riding.

While scanning, check for potential problems, such as:

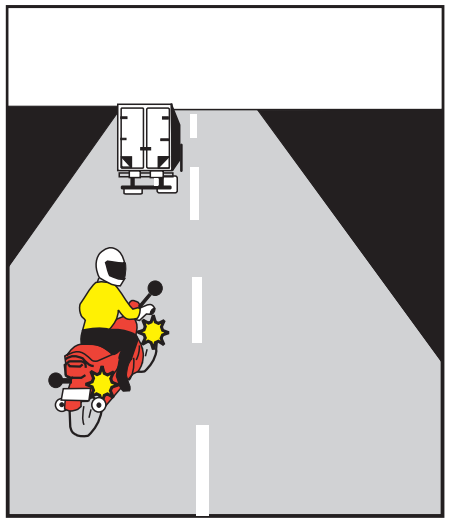
- slippery surfaces
- bad bumps
- pot holes
- loose gravel
- wet leaves or objects lying on the road

- sunshine in your eyes as it makes scanning difficult
- other drivers who may be blinded by the sun
- other road users, animals or young children.

Head checks

Motorcycle riders have “blind spots” just as drivers do. When you are about to move off or change lanes, make sure you turn your head and look over your shoulder for traffic. This makes sure that the space you are about to move into is safe. This is called a “head check” and is the only sure way to see a vehicle behind you in the next lane.

The “head check” is very important if you intend to change lanes. There is little chance that a driver in the next lane can react quickly enough to avoid you once you have started to change lanes. On a road with two or more lanes in your direction, check the far lanes as



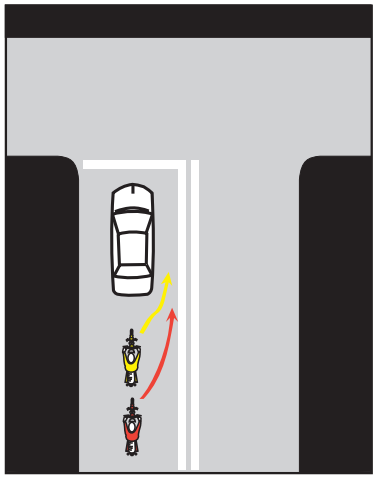
well as the one next to you. Another driver may be moving to the same space as you intend to.

Using your mirrors

You should check your mirrors regularly so you always know what is behind you. There

are also particular times when it is very important for you to use your mirrors:

- when preparing to turn or change lanes, watch carefully for any cars behind you, especially if you plan to turn where others may not expect it, such as at lane ways, driveways and side streets
- when you have to slow down or stop, use the "setting up" action of the brakes to remind you to check in the rear vision mirror. If there is someone close behind, it may be better to keep moving or make a safe lane change
- when you are stopped behind another vehicle, leave plenty of space (two motorcycle lengths at least) in front of you to move (it is difficult to change direction quickly from a stopped position). Watch vehicles approaching from behind. If a driver is not paying attention, flash your brake light to reduce the chance of being hit in the rear. Remain in first gear and aimed



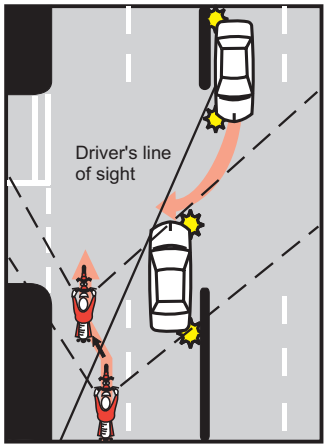
at your escape route until the vehicle behind has stopped.

For any change of direction or line, the order is:

- mirror check
- head check
- signal (indicate)
- then action.

Position

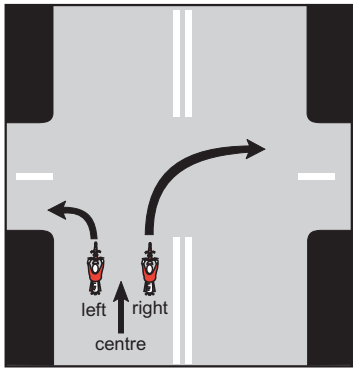
As well as seeing and being seen, riding on certain parts of the road at certain times can put you in unnecessary danger. For instance, the oil build up in the centre of your lane can mean it takes further to slow down or stop if it is raining or you are leaning over in a corner. Staying in the right wheel track of the vehicle in front regardless of conditions is also incorrect. How safe you are depends on where you are in your lane.



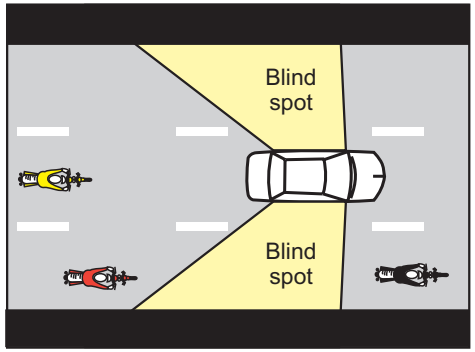
As a motorcyclist you can move around in your lane to improve your line of sight and become more visible to others (see picture in previous column):

- in curves you can move to one side of the lane or the other to get a better view through the curve
- at stop signs you are closer to the corner than the driver of a car. When you stop, position yourself where you can best see and be seen without putting yourself at risk
- when turning left (see picture on next page), move toward the left of the centre of the lane or toward the right of the centre of the lane for a right turn (but still allow some space between you and the kerb, or you and the centre of the road).

Do not allow yourself to be boxed in. When you overtake a car, do not stay in the blind spot any longer than you have to. Start overtaking carefully. Once you have entered



the blind spot alongside, proceed through it and ride in the driver's direct vision. Stay within the speed limit.



If a driver wants to overtake you, hold your position on the road until the overtaking vehicle has started changing lanes, then move away from the vehicle as it overtakes you. This will reduce the chances of a driver trying to use part of your lane to overtake.

Questions

1. Where should you not look when following a car?
2 How should you check for traffic before changing lanes?
3. Is it important to check traffic behind you when you are planning a turn at a side street? Why?
4. When riding on the road, what information and actions would cause you to reassess your lane position?

Keeping your distance

Space in front

The best protection you can have is space between you and others. If someone else makes a mistake, space gives you time to respond and somewhere to go. Under ordinary conditions, try to keep at least a three second space between you and the vehicle ahead (see *Road Users' Handbook* on three - second gap). This space gives you:

- enough time to react in an emergency
- a better view of the road surface
- allows other drivers to see you.

If you follow a car too closely and the driver ahead stops suddenly, it is impossible for you to stop in time. At 60 km/h you would have travelled for more than half a second, or around 12 metres before you react. Your hand and foot would have braked when you have only a quarter of a second or four metres to stop your motorcycle. This is not enough distance to avoid a crash. Although all your attention is focused on stopping, you may panic and either lock the brake or do nothing at all.

If you follow a vehicle with about three seconds of space (about 50 metres), and the driver ahead stops suddenly, at 60 km/h you will have travelled for about half a second or 12 metres before you react. Your hand and foot would have set up and braked, you would have checked in your mirrors for danger and geared down all in about 34 metres, leaving about 16 metres between you and the vehicle in front.

For an explanation of following other vehicles, see the *Road Users' Handbook*.

In wet conditions you will need a longer distance in which to stop. Lack of tyre grip (traction) and "locking up" a wheel make stopping difficult, so increase the gap between you and the vehicle you are following to about six seconds or more.

Space to the side

As a motorcycle rider you can do one thing that car drivers cannot; you can move from one side of the lane to another to increase distance from other cars and reduce the risk of a crash. You should change lane position as traffic conditions change.

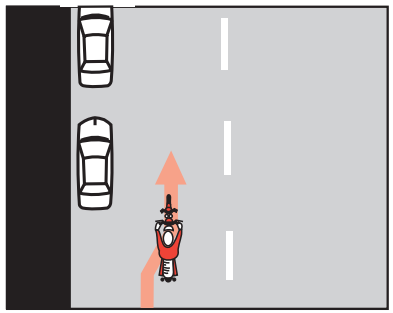
Here are some conditions that require changes of lane position:

Overtaken from behind or passed by another vehicle: you should move toward the centre of your lane, so you are as far away as possible from the passing vehicle.

Large trucks approaching can create wind gusts that affect your control. You can reduce the strength of this wind gust by moving across your lane away from the oncoming vehicle.

When passing parked cars move to the centre or right of the lane, depending on whether

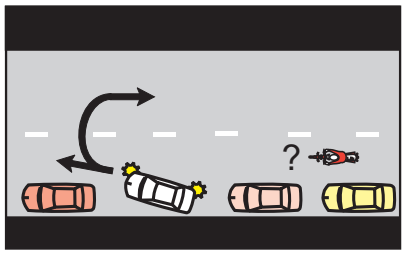
other traffic is approaching from the opposite direction. That way you can avoid problems caused by car doors opening, drivers getting out of cars, or people stepping from between cars.



Cars making U-turns are a particular danger. When cars pull out from the kerb the drivers often take a quick look in the side mirror and fail to see a motorcycle. Always be prepared for a car to pull out, having not seen you, and turn across the road and block your lane, leaving you nowhere to go.

Look for the following signs from a vehicle that may be about to do a U-turn across your path:

- a driver behind the wheel
- brake lights on
- reverse lights flash on
- front wheel turning out
- right indicator flashing.



If you see a car pulling out, approach very carefully. Be prepared to set up your brakes, sound your horn and flash your headlight if necessary.

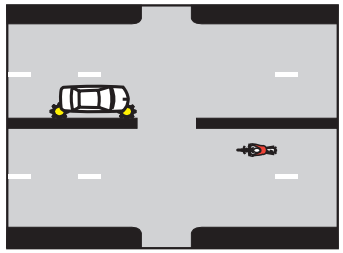
Most crashes between cars and motorcycles happen at intersections. Drivers often cannot see a motorcycle coming directly at them. These are three leading causes of motorcycle crashes at intersections:

- a car making a right turn across a motorcycle's path
- a car pulling out from a side street into a motorcycle's path
- the rider failing to recognise potential dangers.

If a car can move onto or across your path, assume that it will and do something to protect yourself:

- move as far away from the risk (car) as you can

- if the car is on your left, move to the right
- if an oncoming car has a right turn signal on, move to the left
- keep a clear space around you, change lanes if necessary (do not forget the head check).



Sharing lanes

Cars and motorcycles each need a full lane. Drivers should not share lanes with motorcycles and motorcycles should not share lanes with cars or other motorcycles.

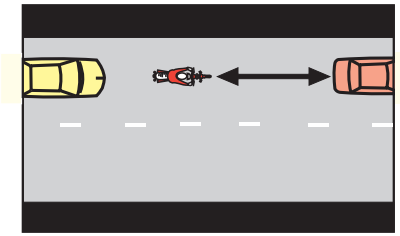
Do not ride between rows of stopped or slow-moving cars. Anything can happen - a door could open, a car could turn suddenly, the traffic may begin to move leaving you trapped between vehicles.

Lane sharing by others

Lane sharing may occur in:

- heavy traffic
- when you are preparing to turn at an intersection, enter an exit lane or leave the road
- when another driver wants to overtake you.

In these situations if you move too far or too soon to one side, you invite other drivers to share the lane with you. The best way to reduce this occurrence is to position yourself to



discourage other drivers from trying to squeeze past you.

A car on a freeway may having trouble seeing a motorcycle merging from an entrance ramp (even with its headlight on). Do not assume that the driver on the freeway has seen you.

Always try to keep a clear space on at least one side while you are riding. If a car in the next lane changes into your lane without warning you are trapped if there is no space to move to.

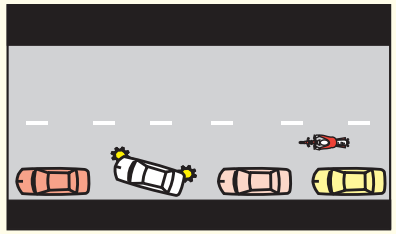
Space behind

Many riders complain about “tailgaters”; that is, people who follow others very closely. If someone is following you too closely:

- increase your three-second space between you and the car in front. This gives you more distance to stop and allows the tailgater more time to react if possible
- change lanes and let the tailgater pass when the way is clear for a safe pass
- slow down so the tailgater can overtake you.

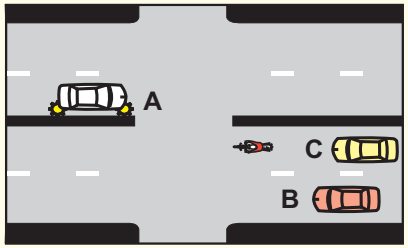
Questions

1. What is the least gap you should keep between you and the vehicle in front?
2. A car in this picture is pulling out of a parking space. What action on the car drivers behalf would put you in the greatest danger?



3. In what part of the lane should you ride when being passed by on-coming vehicles?

4. What should you do when approaching an intersection where an on-coming car is signalling to turn right? (see below)



5. In what part of the lane should you ride if you are being overtaken by a car on a two-lane road?
6. You are being followed very closely by another vehicle. What should you do?
7. You are coming to an intersection. What is your greatest danger?

Difficult surfaces

Slippery surfaces

Any road surface that affects your motorcycle's tyre grip will affect your control. Some slippery surfaces are:

- wet bitumen, particularly just after it starts to rain
- gravel roads, or places where sand, mud or gravel have collected on sealed roads
- painted lane markings and steel surfaces (manhole covers) are particularly dangerous when wet.

There are a number of things you must do to ride safely on slippery surfaces:

- reduce your speed, so that you require less space to stop
- reduce the amount of lean on the motorcycle when riding curves. This is done by slowing down and/or leaning your body into the bend
- check your speed. Advisory speeds apply to good surface conditions.

Whenever you apply the brakes, use the progressive braking technique using both brakes. On a poor surface the front and rear brake will be applied but the application must be gradual.

Recap - progressive braking

Remember, set up by applying a small amount of front and rear brake so it just starts to compress the front forks. This action does not put a sudden load on the front tyre.

Then apply a little more pressure until you have braked enough. This is called *progressive braking*.

The only time you should not use the front brake is if the surface is extremely slippery, like ice.

Difficult surfaces

Avoid sudden moves or sudden changes in speed or direction as these can cause skidding on a slippery surface.

You should turn, brake, accelerate, and change gears as little or as smoothly as possible.

When you change lane position, do it smoothly.

Choose the best surface: try to avoid slippery areas or try to find the best of the poor surface and use it. Oil from cars tends to build up in the centre of the lane, particularly near intersections where cars slow down or stop. On wet bitumen, it is better to ride in the tracks created by the wheels of moving cars.

Watch for oil patches when you stop or park. If you put your foot down in the wrong spot it may slip.

Dirt and gravel tend to collect along the sides of the road. It is very important to stay away from the edge of the road when you make sharp turns at intersections, or enter and leave freeways at high speed.

The less lean angle (and speed) a motorcycle has, the less effect poor or slippery surfaces will have on it.

Certain sections of the road dry out faster after rain or snow. Try to ride on the dry sections.

Stay on the surfaces that provide the best grip whenever possible but do not put yourself at risk by riding too close to traffic approaching from any direction.

On very slippery surfaces like mud, hard-packed snow, wet wooden surfaces, painted road markings or ice it can be difficult to keep your balance. If at all possible avoid these surfaces. If you can not avoid them, ride as slowly as possible and keep the motorcycle upright at all times. You can also use your feet as “outriggers” to stop you falling. Make no changes in speed or direction until you can do it safely.

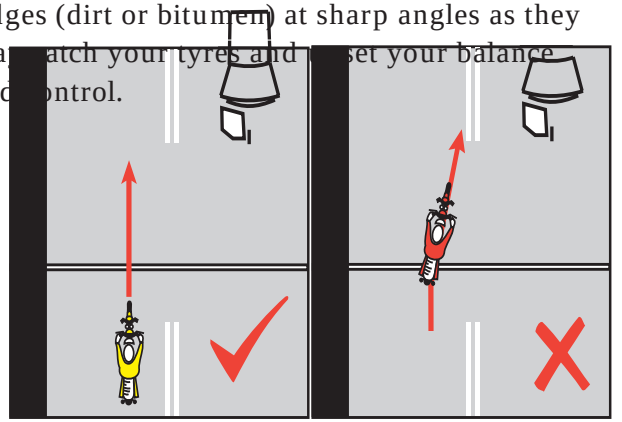
Uneven surfaces

Watch for uneven surfaces such as bumps, broken road surfaces, “potholes”, corrugated dirt roads or railway tracks across the road. If the conditions are bad enough, they could affect control of your motorcycle. When you ride on uneven surfaces you should:

- ride slowly to reduce the road shock to your body
- keep the motorcycle as upright as possible
- rise slightly on the footpegs so that you can absorb the shock with your knees and elbows
- hold a steady throttle and speed to reduce instability of the front end.

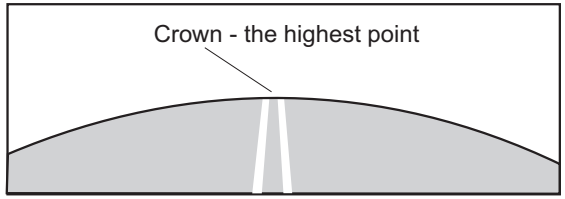
Rail crossing

If it is necessary to change your approach when you want to cross a rail crossing, slow down before and cross the crossing as squarely as safety allows. Do not try to cross large ridges (dirt or bitumen) at sharp angles as they may catch your tyres and upset your balance and control.



Sloping surfaces

A road surface that slopes from one side to the other is not difficult to handle when you are going straight ahead. However, in a curve, if a slope goes the wrong way it can make turning difficult.



A high crown makes a right turn more difficult by:

- cutting down on the clearance between the right footpeg and the road surface
- tending to force you away from the curve rather than into it
- making it necessary to turn uphill.

The best way to ride when the slope of the road is working against you is to slow down. This will straighten the motorcycle and lessen your chance of skidding.

Road grooves or dirt crown

When you ride over road grooves or dirt on the crown of the road, the motorcycle will wander from side to side. It is dangerous to try to stop this wandering. The best thing to do is to slow down before you are onto the poor surface, then relax, hold a constant throttle and just keep going.

Questions

1. On wet roads, how do you make an emergency stop?
2. On a wet road, what part is generally the most slippery?
3. On a high-crowned road should you reduce your speed most for the curve to the right or to the left?

Riding at night

At night take extra care as everyone's ability to see and be seen is limited. Because a motorcycle has only one headlight it is difficult for you to see the condition of the road surface and any obstacles on or about to cross the road. To ride safely at night you should:

- stay alert and be prepared for mistakes other drivers may make
- use your high beam when you are not following or travelling towards other vehicles
- reduce your speed at night, even on roads you know well. If there is something ahead on the road that could be dangerous or that could affect your control, you will not be able to see it until you are very close
- use the lights of the car in front of you to gain valuable and early information of the road surface and road conditions ahead. The actions of the car can also indicate road condition, for example, the car tail lights bouncing up and down can alert you to bumps or rough patches
- allow a greater following distance, it is difficult for you and other drivers to judge distance at night
- not ride next to other vehicles
- allow yourself more room to overtake safely
- not wear a scratched or dirty visor. It is dangerous at any time because it will have the effect of making you virtually blind to a lot of information that is essential for safe riding.

Be sure you are seen

If you wear dark motorcycle clothing it best to help others see you at night by:

- wearing reflective clothing
- making sure your motorcycle is equipped

with reflectors and / or reflective tape on either side and rear of the motorcycle.

If the high beam of your headlight goes out, use low beam. Get the lighting system fixed at the very first opportunity. If your low beam goes out, switch to high beam and adjust your headlight lower so that it does not shine in other drivers eyes. If you lose both high and low beam of your headlights, it is illegal to ride at night. Carry a well wrapped spare globe with your tools. Again, get another globe as soon as possible. If your tail light bulb blows, make a temporary tail light by adjusting your brake light switch. Or ride with your foot lightly on the rear brake.

Questions

Indicate True (T) or False (F) for the following statements about safe night riding:

1. Use high beam as much as possible when there are no other vehicles around.
2. You can use the headlights of a car ahead to see the road better.
3. Stay closer to other vehicles at night.
4. Wear reflective clothing at night.
5. Do not wear a scratched visor or goggles.

Emergencies

No matter how careful you are, there will be times when you find yourself in an emergency. You should know what to do and be able to do it quickly and well. Practising in an off-road area will help give you the skill and confidence to control your motorcycle in an emergency. Better still, you should enrol in a Motorcycle Rider Course suited to your level of experience.

Emergency braking

In an emergency, concentrate your attention on applying the brakes (set up and squeeze), then on an escape route. You should change gears only when the emergency is under control.

Braking in a curve

Braking in a curve is particularly dangerous and should be avoided wherever possible. However, should this be necessary see "Braking in a curve" on page 23.

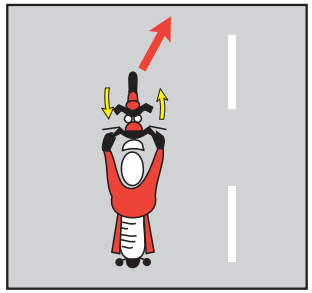
A wet or poor road surface makes braking in a curve even more difficult and you could easily lose control.

The best way to avoid an emergency in a curve with restricted visibility is to believe that what you cannot see can really hurt you; therefore reduce your speed before you go into a curve, and before you begin leaning your motorcycle.

Swerving - avoiding obstacles

Swerving may be necessary to avoid a particular emergency. You may not notice a piece of rubbish or a pothole in your path, or the car ahead might stop suddenly. The only way to avoid having a crash is to swerve quickly. To make a quick swerve you must get the motorcycle to lean quickly in the direction you want to turn. The sharper the swerve, the more the motorcycle must lean. 'Counter steering' is the term used for a safe swerve quickly around an object.

To make a quick turn to the right, push forward on the right handgrip with the palm of your hand and the motorcycle will lean to the right, as the motorcycle leans, stop pushing and pull back on the same bar to straighten up. The process is reversed for a quick turn to the left. Practise quick steering in a safe place so that you can use it when you need to.



The quicker the push the quicker the change of direction.

Stay in your own lane in an emergency unless you are sure the surrounding area is safe to move into. You should be able to get past most obstacles without leaving your lane. This is one time when the size of the motorcycle is in your favour. Even if the obstacle is a car, there is generally room to move alongside it.

Skid control

A rear wheel skid may go unnoticed for a while or may be sudden and violent. If the front wheel skids, the result will be sudden and violent.

It is important to keep your wheels rolling to provide traction and stability.

A lot of power too quickly or too much brake on one or both wheels are the most common causes of skidding.

If the front wheel skids, release the front brake instantly. If the rear wheel skids, ease off the brakes gradually to allow the wheels to gain traction slowly.

If the skid is caused by too much acceleration, you should ease off the throttle. A spinning wheel provides no more control than a locked wheel.

Riding over objects

Sometimes you have no choice but to ride over an object in your path. Riding over objects is a lot like riding over uneven surfaces. Here is what to do:

- hold onto the handgrips firmly so that you do not lose your grip when the front wheel hits the object
- keep a straight course. This keeps the motorcycle upright and reduces the chance of losing control if you hit the object
- reduce your speed as much as possible before reaching the object
- rise slightly on the footpegs and accelerate over the object. This allows your legs, arms and the front suspension to absorb the shock. It helps you maintain control and keeps you from possible injury as the rear wheel hits the object.

The four steps above let you ride safely over most of the objects you would find on the road. It is a good idea to check your tyres and rims for damage soon after.

Airborne objects

From time to time you can be struck by insects, bugs or cigarette butts thrown from car windows, or stones kicked up by other vehicles. If you have no face protection you could be struck in the eye, face or mouth. With face protection the result could be a smeared or cracked visor; without protection the result could be the loss of an eye or worse.

Whatever happens, try not to let it distract you or you may lose control of the motorcycle. Keep your eyes on the road and your hands on

the handlebars. If you need to pull off the road do so as soon as it is safe.

Animals

You should do everything you can to avoid hitting an animal. However, if you are in traffic do not swerve out of your lane to avoid hitting an animal. You have a better chance of surviving an impact with a small animal than you do with a car that may be in the next lane. Motorcycles tend to attract dogs. If you find yourself being chased do not kick at it; it is too easy to lose control. Instead, change down and approach the animal slowly. As you reach it, increase your speed quickly to leave the animal behind. In all cases keep your eyes scanning all the road ahead and behind, not just the dog.

Mechanical problems

Things that go wrong with motorcycles can also cause emergencies.

Blow-outs and punctures

If you have a blow-out or rapid puncture, you will need to respond quickly to keep control. A front tyre blow-out is particularly dangerous as it affects your steering - and you need to be able to steer well to keep control.

You cannot always hear a tyre blow. You should be able to detect a flat tyre from the way the motorcycle responds:

- if the front tyre is losing air pressure, accurate steering efficiency will be lost and the motorcycle will not feel good to steer. If this problem is not detected early, control of your motorcycle will quickly deteriorate to total loss of control

- if the rear tyre goes flat, the rear of the motorcycle will tend to move from side to side.

Here is what you should do if you have a blow-out or rapid puncture while riding:

- hold the handgrips firmly and concentrate on steering a straight course, and
- do not apply the brake to the wheel which has the punctured tyre. Gradually close the throttle and let the motorcycle slow down
- if it is the front tyre that has gone flat, shift your weight as far back as you can. If it is the rear tyre, sit well forward to transfer weight away from the rear wheel
- as the motorcycle slows it will become less stable. Concentrate on steering towards the side of the road, or some other safe place, and stop.

Stuck throttle

If you try to close the throttle and find that you cannot, you must think quickly to stop an accident happening. Here is what to do:

- immediately squeeze the clutch lever
- turn off the engine at the engine cut-off switch
- apply the brakes.

This action disconnects the engine from the rear wheel and stops you from speeding up.

If your motorcycle has an automatic clutch, turn off the engine at the engine cut-off switch and apply the brakes.

Make certain the throttle is working freely before you continue. Find the cause of the problem. If you cannot find the cause then have a mechanic check it. Do not assume that the problem has gone away.

Steering shake

Sometimes the handlebars can suddenly begin to shake from side to side. This is called “tank slapping” and is usually a problem with the steering. The only thing you can do in this situation is to keep on riding as follows:

- firmly grip the handlebars, this is usually enough to overcome the problem. Do not try to fight the wobble too hard
- gradually close the throttle and apply very light braking both front and rear to slow the motorcycle down.

Find the cause of the problem by having it checked by a mechanic.

Problems that can cause a wobble are:

- steering head bearings out of adjustment
- not enough air pressure in the tyres
- a wheel that is bent or out of alignment
- putting too much weight behind the rear axle
- a windshield or fairing that is wrongly mounted or not designed for the motorcycle
- loose wheel bearings
- loose spokes or a poorly fitted tyre
- road surface conditions.

Chain breakage

If a chain breaks, it is important to respond quickly. Squeeze the clutch lever in, close the throttle and brake to a stop. Chain failure is usually caused by a worn or stretched chain which does not fit the sprockets properly, or by worn sprockets. When the chain breaks, you will instantly lose power to the rear wheel and the engine will speed up. The chain could lock your rear wheel, and force you to lose control. When you replace your chain it is also a good idea to replace the sprockets as well.

Engine seizure

Engine seizure means that the engine stops suddenly, and the result is the same as a locked rear wheel. However, there is usually some advance warning. Engine seizure is usually caused by a lack of oil. Without oil, the engine's moving parts will no longer move smoothly against each other and the engine will overheat. The first sign may be loss of engine power or you may also hear a change in the engine's sound. If seizure occurs pull in the clutch and bring the motorcycle to a normal stop.

Questions

1. What do you do to swerve to the right to avoid a rock on the road?
2. Which brake should you use if you need to stop quickly?
3. If you do not see a piece of tail pipe across the road in time to avoid it, what is the best method to ride over it?
4. How should you safely cross loose, shallow sand on a bitumen road?
5. How should you safely ride on a loose gravel or sand road?
6. How should you safely ride on a bumpy road?
7. What should you do when you are approaching a dog standing near the road?
8. What is the first thing to do if you have a blow-out?
9. At low speeds, if the front tyre goes flat what is the first thing you will notice?
10. What can you do to control a high speed wobble?
11. If your throttle sticks while in traffic, what is the first thing you should do?

Carrying passengers and loads

Passengers

Until you are an experienced rider, you should not carry passengers or heavy loads. The extra weight changes the way your motorcycle balances, turns, speeds up and slows down. When you do start carrying passengers, carry someone who is light, rather than heavy. Your pillion passenger is your responsibility. Make sure they are at least as well protected as you are.

You must have held a rider's licence for at least 12 months before you are permitted to carry a pillion passenger.

Riding with passengers

When you are carrying a passenger, the motorcycle responds more slowly. It takes longer to speed up, slow down or make a turn. The heavier the passenger or load, or the lighter the motorcycle, the more difficult it can be to handle. To adjust for carrying a passenger, you should:

- ride at a lower speed, particularly on corners, curves, or bumps
- begin to slow down earlier than usual when you approach a stop
- allow a greater following distance
- look for larger gaps whenever you cross, enter or merge with traffic
- avoid sudden moves which could surprise your passenger
- keep conversation to a minimum so you will not be distracted from riding
- avoid showing off, you could get into a dangerous situation as well as discourage your passenger from riding with you again.

Equipment

In order to carry passengers safely, you will need a proper seat. The seat should be large

enough to hold both you and your passenger in comfort. You should not have to move any closer to the front of the motorcycle than you usually do. Passengers should not hang over the rear end of the seat. The law requires that your motorcycle has a set of footpegs for your passenger. With a firm footing, your passenger will be more securely and correctly positioned. The law requires that passengers wear an approved helmet. It is advisable they also wear protective clothing.

Instructing passengers

Do not assume your passenger knows what to do, even if he or she is a motorcycle rider. Give complete instructions before you start. Passengers should be told to:

- get on the motorcycle after you have mounted the motorcycle and started the engine
- sit as far forward as possible
- hold on to the waist of the rider or a secure part of the motorcycle
- keep both feet on the footpegs at all times, even when the motorcycle is stopped
- stay directly behind you, leaning as you lean and avoiding any unnecessary movement.

You should also adjust the rear suspension spring pre-load, mirror and headlight (if you intend to ride at night). If you carry a passenger, it is a good idea to add a little more pressure to the tyres (check your owner' s manual).

Side-car

Do not overload or overcrowd the side-car. The extra weight of a side-car makes a big difference to both handling and braking of the motorcycle. Practise riding a side-car by yourself before you take any passengers. Ensure your passengers are comfortably and safely seated.

Passengers must wear a motorcycle helmet.

Loads

Small loads can be carried safely on a motorcycle if they are properly positioned and fastened. Panniers and/or touring bags and racks, if they are fitted to the manufacturer's instructions, ensure your load is firmly secured and properly located.

Keep the load low, do not pile loads high against a sissy bar or back rest frame.

Keep the load forward of the rear axle. Tank bags are ideal, provided they are secured properly. Anything mounted behind the rear axle can affect the way the motorcycle handles. It can also produce steering head shake.

Distribute the load evenly, if you have panniers or saddlebags, make certain the load in each one is about the same. An uneven load can cause the motorcycle to pull to one side.

You can secure the load with elastic cords, small cargo nets or ropes. A loose load can catch in the wheel or chain.

You should regularly check the load, when you are stopped make sure it has not moved and is secure.

Questions

1. Where are loads best placed on a motorcycle?
2. When should a rider talk to a passenger?
3. Where should a pillion passenger sit in relation to the rider?
4. What should you tell a pillion passenger to do in a turn?
5. What should a pillion passenger not do when you stop?
6. How should a pillion passenger hold on?
7. What must be fitted to a motorcycle if a pillion passenger is carried?

Group riding

Planning the ride

Motorcyclists riding in groups do not have any special rights. If you want to ride with others, you must not put anyone in danger or interfere with the flow of traffic. Here are some suggestions:

- plan well; have everyone know the route and stopping points
- name a “tail ender” in case someone has problems. If a large group is going to the same place, name several “tail enders” and break up the group. This causes less disturbance to other road users
- if you do ride at the same pace as others, keep a following distance of at least three seconds
- never ride side by side or any closer than three seconds from any vehicle
- do not block other road users. A small group of motorcyclists can be intimidating to a car driver who can then become nervous or aggressive.

Peer pressure

When you ride as a group you may feel pressured to ride more quickly than the speed limit or than your abilities can cope with. This is clearly unsafe. Use your common sense and only ride as fast as is safe **for you**. Always ride within the legal speed limit.

Your motorcycle

Motorcycle maintenance

There are many things on the road that can cause trouble. It is your responsibility to make sure that your motorcycle is not one of them. A minor mechanical failure on a motorcycle may cause a crash which could cause serious injury or even death to the rider or other road users. Your motorcycle needs more frequent attention than a car because the engine causes the motorcycle to vibrate more, usually causing bolts and nuts to loosen.

Mechanical failure

To reduce the possibility of personal risk from mechanical failure of the motorcycle, riders need to provide frequent care and attention to the maintenance of their motorcycles.

Regular inspections

The manufacturers handbook will provide the detail of the regular mechanical servicing schedule required to keep the motorcycle in good mechanical condition, however the rider can help by carefully inspecting the motorcycle during regular washing and cleaning. Early detection of loose fittings and minor faults will allow the rider to attend to problems and keep the motorcycle in a roadworthy condition.

Roadworthiness

It is a legal requirement in NSW that all registered vehicles remain in a roadworthy condition.

A system of checks

By using a system of checks and procedures, the rider is able to reduce the risk of personal injury due to mechanical failure of the motorcycle, or failure to apply correct

procedures in certain circumstances. The following system of checks has been developed to apply to all motorcycles.

1. Checks before starting the engine

- Correct engine oil level.
- Correct coolant level (if applicable).
- Check that you have sufficient fuel for the task.

2. Checks after starting the engine

- The engine warning lights are operating correctly.
- The engine is operating smoothly.

3. Checks before riding the motorcycle

- Correct tyre pressures.
- Correct drive chain tension
- Correct operation of parking lights, headlight (high and low beams), tail light, stop light (both front and rear brake activated) and traffic indicators.
- Correct operation of levers, pedals and controls
- Correct operation of the horn.
- Correct adjustment of the rear vision Mirrors.

4. Periodic maintence checks

- Drive chain adjustment and lubrication, particularly after wet or dusty conditions.
- Battery electrolyte level, cleanliness and security.
- Engine air cleaner cleanliness (and lubrication if applicable).
- Brakes, wear limit indicators (and hydraulic fluid levels where applicable).
- Tyre wear limits, pressures and serviceability.
- Lubrication and correct adjustment of levers, pedals, switches and controls.

Manufacturers periodic maintenance schedule

This document is produced as a general guide and in no way intends to take the place of advice given by your motorcycle manufacturer. The manufacturers requirements for periodic maintenance will be detailed in your motorcycle handbook and associated servicing schedule. You should familiarise yourself with these requirements, particularly the following general points;

- Engine oil and filter change intervals
- Engine coolant change intervals
- Suspension components servicing
- Tyre sizes and recommended pressures
- Correct adjustment of controls
- Recommended engine speeds
- Safety warnings and advice.

IF YOU DON'T KNOW - DON'T TOUCH

Good advice to bear in mind with your motorcycle is 'If you don't know - don't touch'. Recognise your limitations and seek qualified advice for those aspects of motorcycle maintenance which are above your level of knowledge or ability.

Accessories and modifications

If you add badly designed accessories or make changes to your motorcycle it can make it much harder to control. Consider these:

- **highway pegs** - if you do mount highway pegs, have extensions fitted to your rear brake and gear change lever
- **high handlebars** - that extend above the rider's shoulders, may be illegal (the RTA has regulations on height), they make the motorcycle more difficult to control and may cause your vision to be partly blocked

- **oversize tyres** - oversize tyres do not necessarily improve performance or handling.

Some changes can also put excess strain on other parts. Engineers have spent years designing a motorcycle to handle well. Do not make any changes unless you know what they can do to the motorcycle and whether you may legally do it.

For more information concerning motorcycle modifications telephone the RTA Customer Service Centre on 13 22 13.

Questions

1. Why does a motorcycle need more care than a car?
2. How would you check for worn wheel bearings?
3. Low air pressure in tyres can cause problems. What is the correct pressure for your motorcycle?

The Motorcycle Skill Test

This test replaces the kerbside test in compulsory off-street motorcycle training areas and is done during Pre-Provisional Training. Part of the training is aimed at improving your skills to help you pass the test. However if you do not practise low speed manoeuvring as well as normal riding in the practice period (3-6 months) after getting your learner licence, you will have difficulty in passing this test.

The Motorcycle Operator Skill Test (MOST) is to show to a Testing Officer that you have enough basic control skills to ride on public roads.

These skills are to:

- ride the test course without stalling the motor
- ride a tight left turn within set guide lines and without putting your feet down on the ground

- come to a controlled stop without skidding either wheel
- ride around five cones in a slight zig zag pattern without hitting them or putting your feet down on the ground
- do a right U-turn within set guide lines and without putting your feet down on the ground
- stop quickly and without losing control at a speed between 20/30 km/h. There are guidelines for stopping distance relative to speed
- complete a quick swerve within set guide lines at a speed between 20/30 km/h
- not stall during the previous exercises.

The first five activities are completed at whatever speed you wish.

Glossary

advisory speeds - posted speeds shown on yellow road signs to advise you on how fast you should be going

bitumen - tar, asphalt - used for road surface

blind spot - the position behind a vehicle where its driver cannot see you in their mirror

blow-out - a sudden and unexpected loss of air from tyres - tyre puncture

brake pads - pads which rub against the brake disc to slow the wheels

Certificate of Competency - certificate issued on successful completion of a learner or provisional training course (valid for 3 months)

clutch - mechanical device which allows the drive to the rear wheel to be varied

compress - squeeze together, take up less space

computer knowledge test - the questions that test your knowledge of motorcycle and road rules. The test is done on a computer and only tests you on the information in the *Road Users' Handbook* and the *Motorcycle Riders' Handbook*.

contact patch (tyre) - the part of the tyre that is in contact with the road

convex (mirror) - curved, allows a wider field of view but, makes things look further away than they really are

cramped - a situation where body movement and your muscles get sore from being in the one position (such as riding) too long

crowned road - a type of road where the centre is much higher than the edges (curved)

declared area (training) - if you live in a declared area you must take RTA training, if you want a rider's licence

dual purpose motorcycle - motorcycle made to ride on dirt or tarred roads (see trail motorcycles)

engine seizure - engine suddenly stops functioning due to lack of lubrication

fairing - bodywork designed to deflect wind

fatigued - tired, drowsy, a situation where you find it hard to concentrate because you are tired

fluorescent - luminous, brightly coloured

focus - to be able to clearly identify an object, by sight

footpeg - a peg attached to the motorcycle on which to rest your feet

friction point - where the clutch starts to transmit drive to the rear wheel

full face helmet - a helmet fitted with a visor that has in-built chin protection and so covers all of the rider's face

gear pattern - order of operation of the gears

goggles - glasses that protect your eyes from wind, dust, etc.

head check - turning your head to the left or right to check the area behind you which is not visible in your mirrors

headlight flasher - flasher switch for headlight

highway pegs - extra footpegs usually mounted well forward on the motorcycle

hypothermia - you get this when you are so cold that your body cannot work properly so that, your reaction time is slower than usual. You often cannot move properly (this may happen to you if you ride without enough warm clothing)

indicators (blinkers) - orange lights fitted to motorcycles that flash to tell other road users which direction you intend to turn

kerbside test - old style 'round the block' test where the examiner watches from the kerb

lean angle - how far the motorcycle leans in a corner

line of vision - the area driver is looking at

lock (brake) - where the brake stops the wheel from turning rather than gradually slowing the wheel down

loose gravel (road) - an unsealed road, (one that has no covering of tar or cement) but instead has small rocks stones and dirt

oil build up - an area on the road where oil has collected

pannier - luggage boxes

pillion - motorcycle passenger

polycarbonate shell - outside of helmet made from polycarbonate (a type of plastic)

pot holes - holes in the road surface that are large enough to be dangerous to vehicles

power to weight ratio - engine power - in kilowatts - to weight of motorcycle (with 90 kg rider) - in tonnes

Pre-learner training - 7 hour course of compulsory motorcycle training for people in declared areas

pre-load (lever) - take slack out of lever by applying a little pressure

pressure (tyre) - the measure of how hard a tyre is inflated

proof of identity - documents that the RTA is satisfied prove who you are and that you use a particular name. The *Road Users' Handbook* has a list of these documents.

protective clothing - clothing that is strong enough to lessen injury in a crash, leather for example

public street - Any street, road, lane, thoroughfare, footpath, or a place open to or used by the public. Many places like bush tracks and fire trails in National Parks and State Forestry areas could be public streets

rack - carrying tray / frame

railway tracks - steel tracks that trains run on

rapid puncture - a hole in a tyre that causes it to go down very quickly (see blow-out)

reflective stripes - stripes of a plastic material that shine brightly when even a small amount of light falls on them

reflective tape - see *reflective stripes*

reflector - a disk of coloured plastic (usually red or orange) that shines brightly when light falls on it

road motorcycle - motorcycle made to ride on tarred roads

RPM - revolutions per minute (engine speed)

scanning - continuously looking carefully- moving eyes to see possible problem areas

screen - windscreen

seize - see *engine seizure*

side-car - a wheeled attachment fitted to the left side of a motorcycle used to carry passengers

sissy bar - back rest on cruiser-style motorcycle

size (engine) - usually measured in millilitres or cc's

skid - when a tyre slides instead of rolling over the road surface

special purpose motorcycle - motorcycle designed for racing and other specific purposes, often unregisterable

sprocket - toothed cog over which the chain runs

steering head shake - (oscillation) shaking of handle bars

suspension - front forks, rear shock absorbers, springs

swerving - quickly turning in one direction and then changing to another

tail pipe - section of exhaust system furthest from the engine

tailgater - someone who follows other vehicles too closely to be safe

three-second gap - a space between vehicles big enough for three seconds of time to pass between them, see *Road Users' Handbook*

throttle - a control used by your right hand to vary the motorcycle's engine speed

toot - short beep of a horn

touring bag - portable luggage bag

traction - grip between a tyre and the ground

trail motorcycles - motorcycles built for riding on dirt and tarred roads

tread - the pattern of rubber on the surface of a tyre that grips the road

un-declared area - part of the State where training is not compulsory

U-turn - a turn where you go in one direction and then turn right around so you are going in the opposite direction to the way you started

vertical - straight up and down

vibrate - quick, continuous, small shake

visor - clear, plastic sheet on the front of a helmet used to protect your face

wandering - not riding in a straight line - weaving

wheel track - the mark on the road made by other vehicles' tyres

wind chill - same as hypothermia

wobble - continuous shake

Index