AfCAP
Africa Community Access Partnership

UKaid
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Instructor's Manual for the competency based curriculum for training motorcycle and tricycle riders

With emphasis on Motorcycle Taxi Riders

transaid

AMEND

TRL THE FUTURE OF TRANSPORT

Table of Contents

1. INTRODUCTION

The growth in uptake of motorcycle taxis and three-wheelers as a mode of transport in rural and urban areas in recent years, has outpaced most governments' ability to regulate this industry. This means of transport has become vital particularly in terms of rural mobility improving access to essential services for rural communities. However, attempts to regulate this industry are gathering pace in light of the fact that a significant proportion of motorcycle taxi and three-wheeler riders do not possess the relevant licence, lack any kind of formal training and choose not to wear personal protective equipment, factors contributing to concerns for the safety of both riders and passengers.

In 2015, Transaid and the Surface and Marine Transport Regulatory Authority (SUMATRA) in Tanzania, supported by the Research for Community Access Partnership (ReCAP) and with funding from UKAid, developed a comprehensive competency based training curriculum for users of motorcycles and three-wheelers, with a view to it being adopted as the national minimum standard in Tanzania, thereby standardising the quality of training. The curriculum was officially launched by SUMATRA in March 2016 and contributes to ongoing efforts to professionalise this sector.

The following instructor's manual, made possible by ReCAP and UKAid, is intended to complement the competency based curriculum and it provides additional detail and training materials to guide instructors using the curriculum. Whilst this instructors manual was initially developed for use in Tanzania, this version of the instructor's manual has been adapted for wider use in other countries. Throughout this manual reference to 'rider' specifically means the driver and does not refer to passengers.

2. TRAINING AIMS

The aim of the curriculum is to outline training necessary to increase the levels of competency amongst motorcycle riders, particularly motorcycle taxi riders, in order to:

- Improve Road Safety by reducing the number of road crashes involving motorcycles; thereby reducing the number of fatalities and injuries on roads in sub-Saharan Africa
- Enhance the quality of passenger service
- Reduce motorcycle and three-wheeler operating costs

3. TRAINING OUTCOMES

On completion of the training, trainees will be able to:

- Ride the motorcycle safely and responsibly
- Carry passengers safely

- Ensure the motorcycle is in a roadworthy condition
- Comply with transport acts
- Comply with all road signs, signals and markings
- Deliver good customer care

4. TRAINING DURATION

Existing riders

Part One – Theory Training and Testing

Theory training should take 22 hours; based on a maximum of 24 trainees per class.

Part Two – Practical Training and Testing

Practical training should take 34 hours; based on a maximum of 8 trainees per instructor for off road practical training and a maximum of 4 trainees per instructor for on road training.

New riders

The curriculum can also be used to train new riders simply by increasing the time for practical training as appropriate to their skills development.

5. TEACHING METHODS

Teaching methods include:

- Classroom sessions
- Practical demonstration and instruction
- Group discussions

6. TRAINING EVALUATION

Formative assessment

The purpose of formative assessment is to determine on an ongoing basis whether the trainee is meeting the learning outcomes and where to advise on improvement. This will also enable the trainer at the start of the module to assess the existing riders to ascertain if they already meet the required learning outcomes, so they can then progress directly to the next module.

Major areas of assessment:

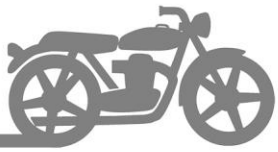
- Curriculum outcomes
- Teaching methodology
- Learning activities
- Learning resource

Assessment Methods:

- Oral tests
- Practical assessments
- Attendance and participation in class

Assessment Instruments:

- Motorcycle
- Quiz and test questions
- Answer sheets
- Attendance register



Summative Assessment

The purpose of summative assessment is to determine whether the curriculum has been implemented as planned and the trainee has reached the required standard of riding.

Major areas of assessment:

- Curriculum outcomes
- Learning resources
- Teaching methodology
- Practical riding skills

Assessment Methods:

- Written examination
- Oral examination
- Practical riding assessment

Assessment Instruments:

- Motorcycle
- Examination question papers
- Examination answer papers
- Training evaluation form

7. TRAINEE ENTRY REQUIREMENTS

Minimum education requirements

- Completed Primary Education (for new riders ONLY)
- Able to read and write in the language of instruction

This may be a challenge for many riders and schools will need to adapt their approach to training to take this into account.

Minimum Driving Licence requirements

- Learner's licence for the necessary category

8. TRAINEE ASSESSMENT CRITERIA

Final Theory Examination

The final theory examination will be of two hours duration and will consist of 60 questions. In the event that the rider is unable to complete a written exam then training schools should consider conducting the exam orally.

Theory Pass Criteria

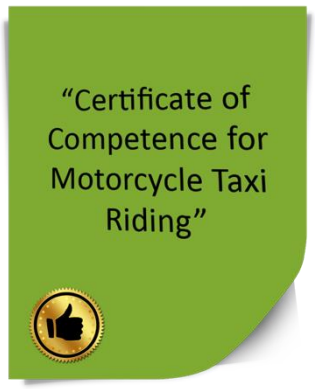
- Minimum score of 70%

Final Practical Riding Test

- A final practical riding test will be carried out by the training institution to meet the requirements established by the responsible authority.

9. CERTIFICATION

Upon successful completion of this training, candidates will be awarded the following certificate:



10. LICENCE ACQUISITION

After successful completion of the training, both theory and practical, and on presentation of the certificate, the candidate is then permitted to sit the official riding test, with the responsible authority, for licence acquisition.

11. TRAINING MODULES

The following eleven modules contain the training materials to be used to teach motorcycle and three-wheeler riders. Each module has been classified as either:

- Theoretical Module – which is entirely classroom based
- Practical Module – which is entirely based outdoors with the vehicle
- Theoretical and Practical Module – which is a combination of classroom and vehicle based

11.1. Transport acts and regulations

Theoretical module

On completion of this module, the trainee will be able to:

- Identify purposes of the Road Traffic Act (or the equivalent legislation);
- Comply with the driving licence requirements;
- Demonstrate the appropriate use of a motorcycle;
- Comply with road traffic controls;
- Identify how traffic regulations are enforced;
- Apply for a motorcycle/tricycle road service licence;
- Comply with conditions of the road service licence;
- Avoid suspension and revocation of a road service licence;
- Identify offences and penalties involved in violation of conditions of the road service licence.

The main objectives of road traffic rules and regulations are to promote road safety and efficiency by providing for the orderly movement of all road users on streets and roads throughout the country and also to regulate user behaviours.

This module uses legislation in Tanzania as an example, and refers to the Road Traffic Act. For use in other countries please refer to the equivalent relevant legislation.

The use of the word 'driver' in this module refers to all drivers of vehicles, including riders of motorcycles and three-wheelers.

The Road Traffic Act, 1973 and Amendments

Section 1: Definition

Motor vehicle - means any self-propelled vehicle intended or adapted for use on the roads;

Motorcycle - means a motor vehicle with less than four wheels, the unladen weight of which does not exceed four hundred kilograms; and includes an engineering plant;

Moped - Means any two-wheeled or three-wheeled vehicle which is fitted with an internal combustion engine having a cylinder capacity not exceeding fifty c.c. and of maximum design speed not exceeding fifty kilometres per hour.

Section 2: Driving without a valid driving licence prohibited

a) No person shall drive any class of motor vehicle on a road unless they are the holder of a valid driving licence or a valid learner driving licence issued to them in respect of such class of motor vehicle.
b) Under the provisions of the Tanzania Road Traffic Act, a person applying for a driving licence of any class is required to attend theoretical and practical training of driving instruction at any registered driving school conducted by a certified driving instructor.
c) After training, the applicant is required to undergo a medical examination to prove that she/he is both physically and mentally fit. Upon being cleared for the driving test, the applicant is supposed to present herself/himself to the vehicle inspector of the Traffic Police Unit to undergo a driving test. Upon passing the driving test, the applicant is issued with a certificate of competence that will enable her/him to acquire the driving licence of the specified class.
d) An application for a driving licence or a learner driving licence, except an application for a renewal thereof, shall be made in person to the Registrar in the prescribed form, accompanied by the prescribed fee and the certificate of competence and the particulars required in the form, and the licence shall be signed by the applicant in the presence of the Registrar.
e) A driving licence shall be valid for three years from the date of issue but may, on the application being made in the prescribed form and on payment of the prescribed fee, be renewed for further periods of three years at a time.
f) Where a driving licence has for any reason not been renewed within a period of five years or more from the date of its issue or renewal (whichever date last occurs) the licence shall lapse and shall not be renewable.
g) Where the applicant for a driving licence is a person suffering from any disability or incapacity, any driving licence issued as aforesaid may be issued conditionally upon observance of the conditions set out therein, including where appropriate, a condition that the driving licence shall relate only to a specified class of motor vehicle specially constructed or adapted for the applicant's use.
h) No person who owns or who has charge of a motor vehicle or trailer of any category shall allow or permit any person to drive such motor vehicle unless such person is the holder of a valid driving licence or a valid learner driving licence issued to him in respect of that class of motor vehicle or trailer.

Section 3: Use of signals

a) Where a driver of a vehicle thinks that it is necessary to prevent or to avoid any danger, that driver shall give a warning using an audible or luminary signal or shall use any other expedient means in order to attract the attention of any other road user.
b) A driver of a vehicle shall not use a warning signal for any purpose other than that specified in subsection (a) of this section or shall not signal or prolong the audible signal for a longer period than it is reasonable in the circumstances.
c) Where a driver of a vehicle intends to move off from the side of a road, make an about turn, change lanes or lateral position of the vehicle which is being driven, the driver shall, for the guidance of other road users, signal with direction indicator lights. If indicator lights are not available on the vehicle, the driver of a vehicle shall signal by stretching out his arm horizontally to the side in which that driver intends to move or manoeuvre.
d) Where a driver of a vehicle intends to stop or to slow down abruptly, that driver of a vehicle shall inform other road users by signalling with stop lights where such lights are prescribed for that vehicle or if such lights are not prescribed that driver of a vehicle shall signal by raising the arm.
e) A driver of a vehicle, who intends to give any sign or signal under this section, shall give that sign or signal enough time before beginning the intended manoeuvre, in a clearly visible and unambiguous manner and such sign or signal shall cease as soon as the manoeuvre is completed.

Section 4: Use of Road

a) Every driver of a vehicle shall use the carriageway correctly:

i) Shall not drive on a pavement or footpath;
ii) Where there are separate carriageways for different types of vehicles, shall use the carriageway prescribed for the type of vehicle the driver is driving;
iii) While driving a vehicle on a public road, shall keep the vehicle near the left edge of the carriageway;
iv) On a two-way carriageway having three lanes, shall use the lane on the far left of the carriageway;
v) On a two-way carriageway with four or more lanes, shall not use the lanes situated entirely on the right-hand half of the carriageway;
vi) On a two-way carriageway with three or more lanes, shall use the left lane, unless overtaking or otherwise indicated by road signs or road markings;
vii) On a motorway and at its entry and exit ramps, shall legally operate a motor vehicle at a speed of more than forty kilometres per hour[1] and a police officer may give access to other [slower] vehicles in particular cases.

Section 5: Overtaking and being overtaken

a) A driver of a vehicle:

i) Shall overtake on the right side of the road;
ii) May overtake on the left side of the road if the driver of a vehicle to be overtaken indicates the intention to turn to the right and where that other driver has moved the vehicle over towards that side in order to turn into another road, to enter a property bordering on the road or to stay on that side of the road.

b) Every driver of a vehicle shall, before overtaking, make sure that:

i) No other driver of the following vehicle has begun to overtake;
ii) The driver of a vehicle ahead in the same lane has not indicated an intention to overtake any other driver of a vehicle;
iii) A lane into which the driver of a vehicle is about to enter is clear far enough ahead; having regard for the difference between the speed of the vehicle while overtaking and that of the other road users to be overtaken, not to endanger or impede oncoming traffic;
iv) Except where using a lane closed to oncoming traffic that driver of a vehicle shall be able, without inconvenience to the other overtaken road-users, to resume the position in the flow without disturbing the traffic.

Section 6: Use of brakes

a) A driver of a vehicle shall not apply brakes suddenly unless it is necessary to do so for safety reasons.
b) A driver of a vehicle intending to slow down or stop shall, except where such slow down or stop is in response to an imminent danger, make sure that she/he stops without danger or undue inconvenience to any other driver of a vehicle and shall give a clear and timely warning of the intention in accordance with Section 3 c).
c) A driver of a vehicle approaching a junction shall exercise extra care as appropriate to local conditions and shall, in particular, drive at such speed as to be able to stop or allow a driver of another vehicle having the right of way, to pass.

[1] This is as per the Road Traffic Act, but consideration for appropriate minimum speed needs to take into consideration prevailing conditions (road, traffic and weather).

Section 7: Use of Junctions and Right of Way

a) A driver of the vehicle on a public road shall give way at junctions (including roundabouts) to vehicles approaching from the right side unless a police officer or a road traffic sign regulates the entry into such junction.
b) A driver of a vehicle emerging from a minor road onto a major road shall give way to drivers of vehicles traveling on the major road.
c) A driver of a vehicle emerging onto a road from property bordering on that road shall give way to vehicles traveling on that road.
d) Notwithstanding the fact that traffic signals authorise a driver of a vehicle to enter a junction, where the density of traffic is such that a driver of a vehicle is likely to stop in the junction and therefore obstruct or prevent the passage of crossing traffic, that driver of a vehicle shall not enter the junction.
e) A driver of a vehicle who enters a junction where traffic is regulated by traffic light signals may enter the junction without waiting for the way to be opened in the direction in which that driver of a vehicle intends to proceed unless that entering impedes the progress of any other road user moving in the open direction.
f) A driver of a vehicle who intends to turn to the left shall keep as close as possible to the edge of the carriageway and shall make as tight a turn as possible.
g) A driver of a vehicle who intends to turn to the right, shall:
    i) Move as close as possible to the centre line of the carriageway if it is a two-way carriageway; or
    ii) Move as close as possible to the right edge if it is a one-way carriageway, and make a turn to enter the carriageway on the left-hand side of the two-way road that the driver of a vehicle intends to enter upon.
h) A driver of a vehicle intending to turn right while entering a junction from the opposite direction shall drive that vehicle to the right of any other vehicle unless this cannot be done without danger or to other road-users.
i) A driver of a vehicle may pass to the left or to the right of a traffic island, post or any other device set up on the carriageway on which that driver of a vehicle is travelling, except:
    i) Where the side on which the traffic island, post or other device has to be passed indicated by a traffic sign;
    ii) Where the traffic island, post or other device is on the centre-line of a two-way carriageway, the driver of a vehicle shall keep to the left of the island.

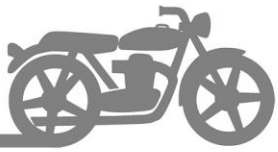
SUMATRA Regulations

In Tanzania the authority responsible for commercial transport regulation is SUMATRA. Their key regulations are set out as follows.

Application for a road service licence

a) No person shall operate for hire or reward a motorcycle or tricycle without a valid road service licence
b) Any person who intends to operate for hire or reward a motorcycle or tricycle shall, prior to such operation, make an application for a road service licence to the local government authority or any other agent appointed by the authority.
c) Any person who fails to comply with the provisions of sub regulation (a) commits an offence and shall, on conviction, be liable to a fine of not less than fifty thousand shillings and not more than one hundred thousand shillings or to imprisonment of not less than one year and not exceeding two years or to both fine and imprisonment.

Procedure for application of a road service licence



An application for a road service licence shall be made together with;

- Original motorcycle or tricycle registration certificate;
- Original valid insurance policy with minimum requirements for third party liability;
- Original and certified copy of a motor vehicle inspection report;
- A copy of membership card and an introduction letter from the registered association;
- In the case of a company, association or cooperation, a copy of certificate of incorporation;
- The proposed area in which the applicant seeks to operate;
- A certified copy of the driving licence and recent photograph
- A copy of the employment contract between the owner and the rider of the motorcycle or tricycle
- The local government authority shall issue a road service licence to the owner of a passenger motorcycle or tricycle which is;
    - New, or mechanically certified to be roadworthy; and
    - Meets the standards stipulated by the Tanzania Bureau of Standards

Conditions for the road service licensee

The licensee shall comply with the following conditions:

a) The motorcycle or tricycle shall be parked and operated in areas designated by the local government authority;

b) The rider of a motorcycle does not carry more than one passenger;

c) A tricycle does not carry more than three passengers and the driver;

d) The rider shall be in a clean and neat uniform with identity card visible to any person;

e) The rider shall when driving observe speed limits as prescribed by road signs and shall not exceed a speed of fifty kilometres per hour;

f) The rider while driving shall wear a crash helmet printed with an area identification mark;

g) A passenger carried on a motorcycle shall wear a crash helmet at all times;

h) The rider while driving shall not use a hand-held mobile telephone or use any equipment with interactive communication features;

i) Where the owner is not the rider, she/he shall enter into an employment contract with a qualified rider to operate the passenger motorcycle or tricycle;

j) A licensed tricycle is fitted with safety belts for each passenger and door barriers on both sides of the passenger's compartment.

Restriction on Children

- A child of the apparent age[2] of nine years of age or under shall not be carried on a motorcycle;
- A child of the apparent age of nine years of age or under shall not be carried on a tricycle as a passenger unless he is accompanied by an adult.

[2] 'Apparent age' is used in the Road Traffic Act as it is unlikely that a child would have a form of identification on them to prove actual age.

Prohibited conduct

A licensee or a rider, while on duty, shall not demonstrate the following behaviour:

- Intentionally blocking or obstructing other service providers;
- Driving above the maximum speed limits in competition for passengers;
- Driving under the influence of alcohol or any narcotic drugs;
- Driving in a careless or reckless manner or in a manner contrary to the provisions of the Road Traffic Act and other laws;
- Mistreating or harassing passengers and other road users.

11.2. Road signs, signals and markings

Theoretical module

On completion of this module, the trainee will be able to:

- Identify and comply with danger warning signs;
- Comply with prohibitory signs;
- Comply with mandatory signs;
- Comply with give way and priority signs;
- Comply with service signs;
- Comply with place and road identification signs;
- Comply with place confirmatory signs;
- Comply with direction signs;
- Comply with additional plates;
- Comply with road markings and traffic lights;
- Comply with background and edge markings.

The main objective of road signs, signals and markings is to promote road safety and efficiency by providing for the orderly movement of all road users. They notify road users of regulations and provide warnings and guidance for the safe and efficient operation of the traffic stream.

Road signs, signals and markings represent a universal language which is easily understood even by those unable to read. This language is represented by three symbolic components:

- **Colours** – red, black, yellow, green, white and blue;
- **Shapes –** circles, triangles, rectangles and octagons;
- **Symbols** – words or pictograms.

For easy identification, road signs, signals and markings are divided into the following groups:

- Danger/warning signs;
- Regulatory signs:
    - Give way and priority signs;
    - Prohibitory signs;
    - Mandatory signs;
- Information signs:
    - Service signs;
    - Signs with information to drivers;
    - Direction signs;
    - Confirmatory signs;
    - Place and road identification signs;
- Additional plates;
- Background marking and edge marking;

- Road markings and traffic lights.

A professional rider and road signs

A professional rider must:

- Read the message given by the road signs and markings while riding at a normal riding speed and under normal traffic conditions;
- Be familiar with the marking or the pictogram on the sign, and understand the instruction or warning being given;
- Respect the message given by the road signs and markings and understand that they will gain nothing and probably will cause crashes by ignoring them.

Danger warning sign

Danger warning signs are used to warn road users of danger or potential danger ahead, and they indicate the type of danger that the road user will have to deal with. They are primarily used when the situation requires extra caution or may require reduced speed due to a danger or hazard ahead which is difficult to foresee and/or when the danger is more serious than the road user will expect from observing the road and the environment.

Danger warning signs are triangular with a red border and a black symbol on white background. The triangle is pointing upwards while a black symbol is normally a pictogram of the hazard.

The example used here warns of children ahead.

Regulatory signs

Regulatory signs are used to regulate the interaction between vehicles and between different types of road users to obtain efficient and safe road traffic.

There are three types of regulatory signs:

- Prohibitory signs
- Mandatory signs
- Give way and priority signs

Prohibitory signs

Prohibitory signs are used where different movements or different types of road users are unwanted. A prohibitory sign is mounted to the nearest junction and valid in the normal riding or walking direction of the road users to whom the sign is displayed unless otherwise stated on an additional plate.

Prohibitory signs are circular with red borders and black symbols on a white background. The sign is normally a pictogram of the prohibition.

The example used here prohibits motorcycles.

Mandatory signs

Mandatory signs are used at junctions where several options for future progress are physically presented to the road users, but where the authorities for different reasons, like efficiency or safety, may want to limit the number of options that the road user can choose to one or a maximum two directions. If more options are possible this is done with other means, like prohibitory signs or “no entry” signs.

Mandatory signs are also used to guide road users at points where one out of several possible routes is made compulsory for these road user groups. They are used to inform road users about obstacles and to help them pass down the correct side of the obstacle and hence avoid any ambiguity or uncertainty.

Mandatory signs are circular with a white strip border and a white symbol or pictogram on a blue background.

The example used here instructs the driver/rider to keep left.

Priority and give way signs

Give way and priority signs regulate conflicts between vehicles. Such signs are normally used where there is heavy traffic and where the general rules of priority may lead to uncertainty, congestion, and accidents. They are also used where it is difficult for the road users to evaluate the situation and the danger created by conflicting vehicles.

The example used here directs a driver/rider to yield (or give way) to other traffic.

Informative signs

Informative signs normally give road users information about the road and about places and facilities of particular interest.

Normally informative signs give information, which is not necessary for the efficiency and the safety of traffic, but they are informing the road user about where they are, where the road is leading and about places of interest along the road.

Informative signs are divided into five groups:

- Service signs;
- Place and road identification;
- Confirmatory signs;
- Other signs with useful information to drivers of vehicles;
- Direction signs.

Additional plates

Additional plates are used to give road users precise or detailed messages and are combined with general road signs to give road users precise or detailed messages. They are mounted parallel to the main sign, i.e. facing oncoming traffic.

Additional plates are rectangular, with black pictograms or black inscriptions on white backgrounds.

Background marking and edge markings

Background marking and edge markings are used to give optical guidance to the drivers, to visualise obstacles on the road or to inform drivers about permanent or temporary obstacles close to the road.

These signs are normally rectangular with black and yellow inscriptions

Road markings

Road markings are used when it is necessary to regulate traffic or to warn or guide road users. Road markings may be used alone or in conjunction with other signs or signals to emphasise or clarify their meaning.

Road markings are classified as follows:

- Longitudinal markings;
- Centre lines and lane lines;
- Edge lines;
- Transverse markings;
- Pedestrian crossings;
- Worded markings;
- Arrows and symbols;
- Marking of islands and refuge.

Traffic light signals

Traffic light signals are used to ensure that road users approaching from a minor road have the possibility to enter or get across a road with heavy traffic. They may be used to give extra capacity to particular roads, for example by giving priority to roads with heavy bus traffic.

Traffic lights consist of three lights, mounted vertically. Red on top, amber in the middle and green at the bottom. They are normally combined with a painted stop-line. The normal traffic light sequence is as follows: Green, Amber, Red, Green and so on.

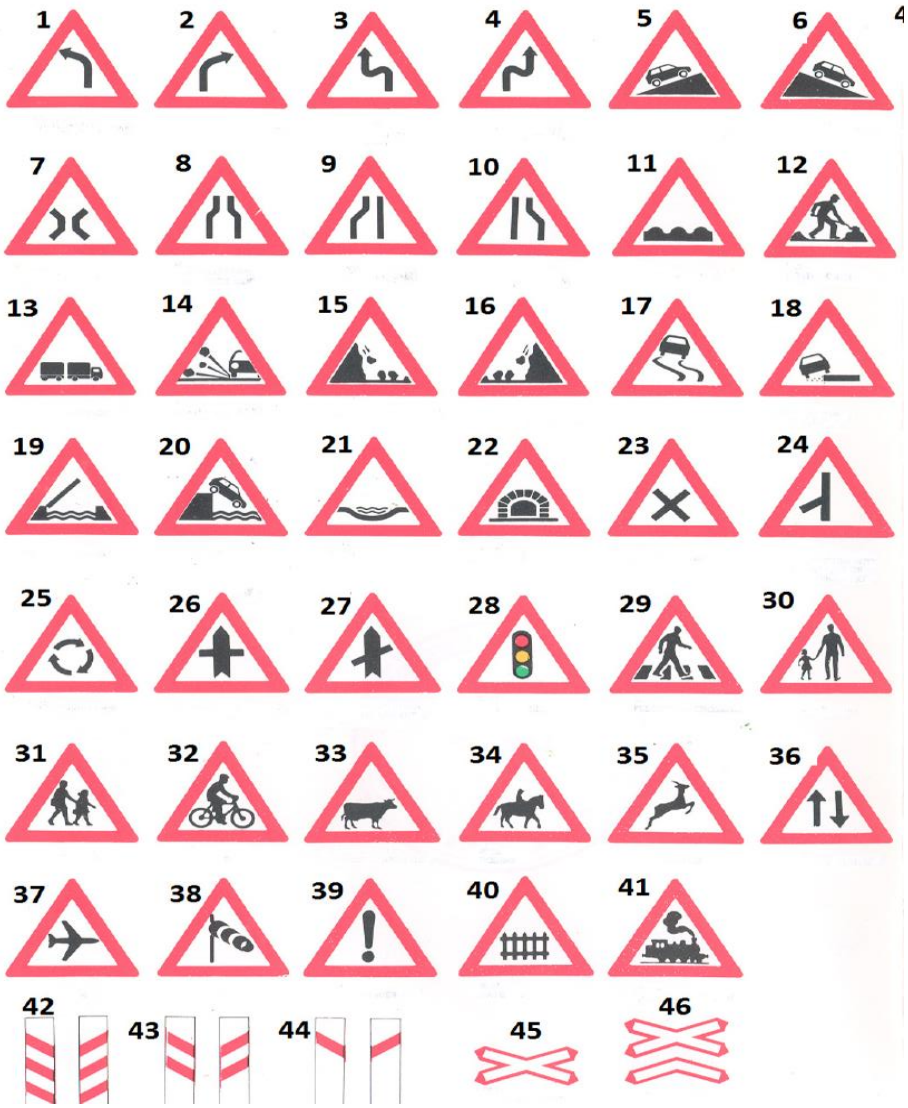
The meaning of each light is as follows:

RED: Stop vehicle behind line and wait for green light before proceeding

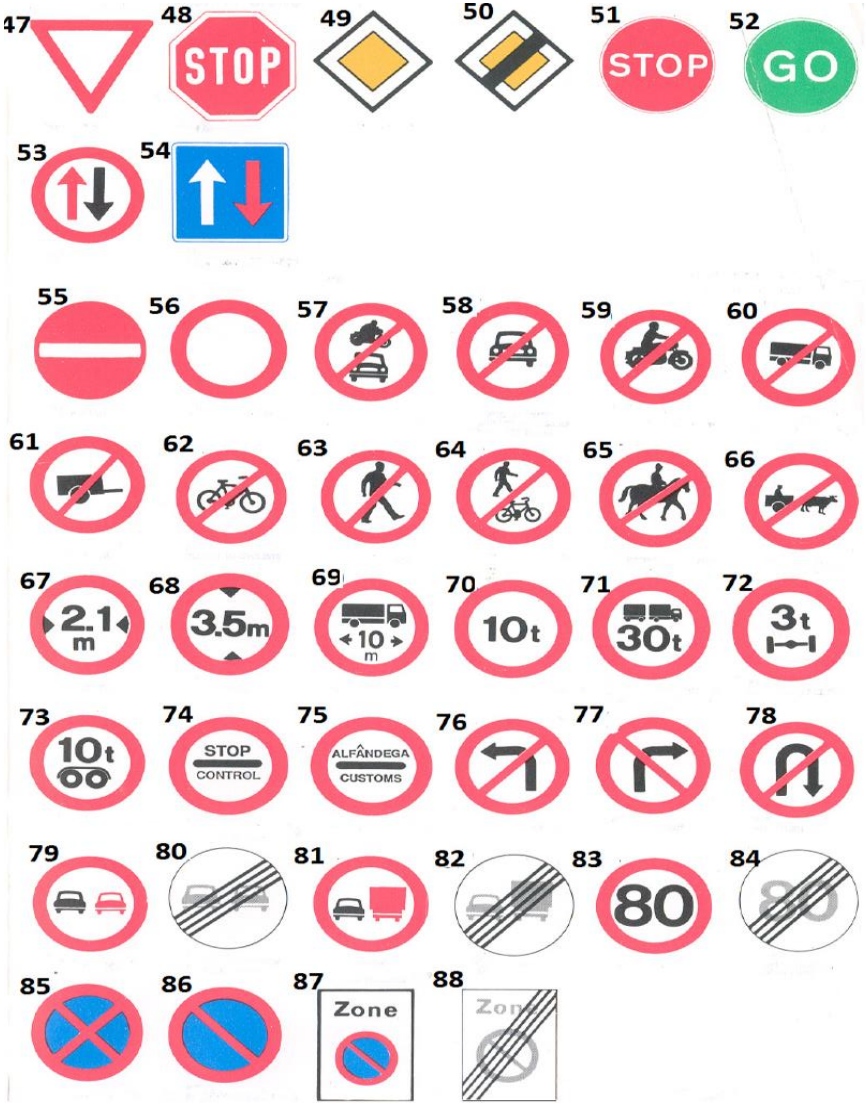
AMBER: Prepare to stop behind line and wait for green light before proceeding

GREEN: Proceed through junction in any direction, subject to restricting road signs and yield right of way where applicable

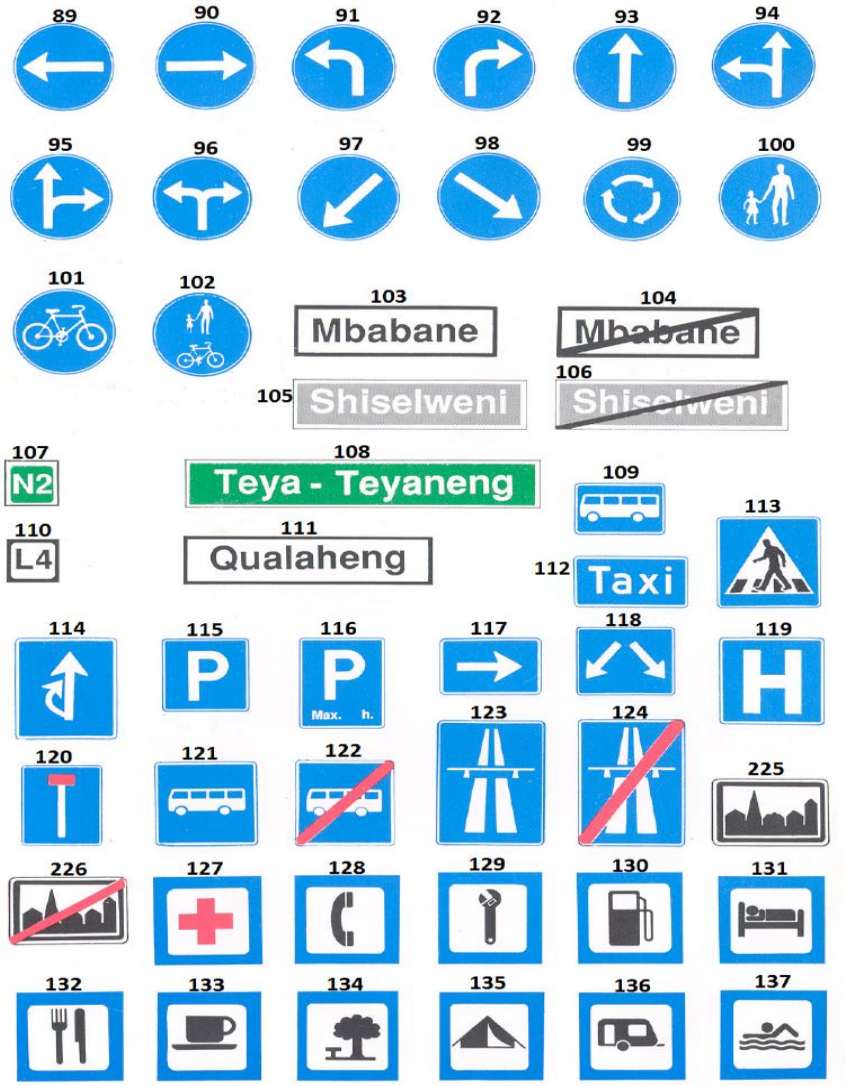
Warning Signs



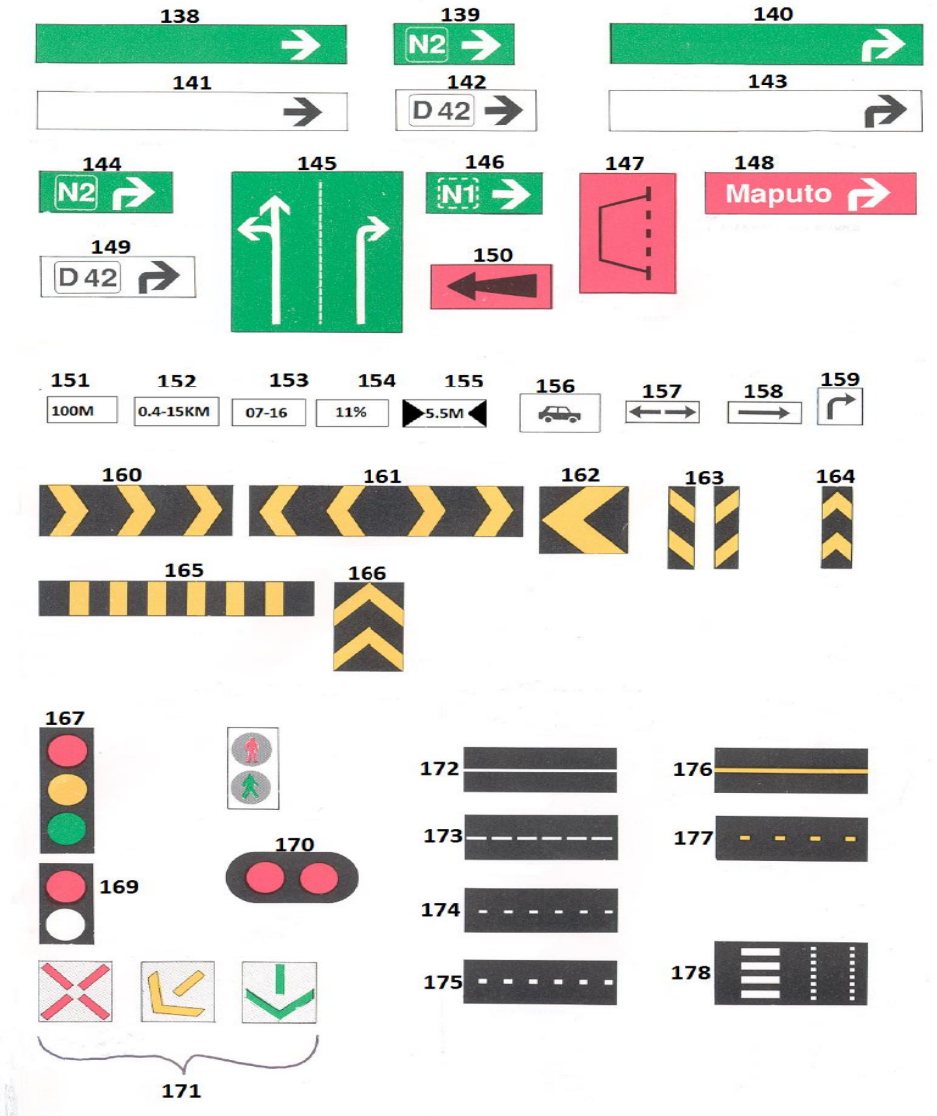
Regulatory Signs



Mandatory and Informative Signs



Informative Signs, Additional plates, background markings, edge markings, traffic light signals and road markings



Danger warning signs			
1	Dangerous bend to the left	24	Dangerous junction with the layout of the junction
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Mandatory signs			
89	Direction to be followed to the left	96	Direction to be followed-turn left or right ahead
90	Direction to be followed to the right	97	Pass this side-to the left
91	Direction to be followed-turn left ahead	98	Pass this side-to the right
92	Direction to be followed-turn right ahead	99	Roundabout
93	Direction to be followed-straight on ahead	100	Compulsory footpath
94	Direction to be followed-straight on or turn left ahead	101	Compulsory cycle track
95	Direction to be followed-straight on or turn right ahead	102	Pedestrians and cyclists compulsory track

Informative signs			
103	Entry to a built-up area	127	First aid station
104	Exit of a built-up area	128	Telephone
105	Place identification-entry	129	Breakdown Service
106	Place identification-exit	130	Filling Station
107	Road identification-National and interstate roads	131	Overnight accommodation
108	Major urban areas	132	Restaurant
109	Bus stop	133	Refreshment or Cafeteria
110	Smaller urban areas	134	Picnic site
111	Road identification-district and local roads	135	Camping Site
112	Taxi stand	136	Caravan site
113	Pedestrian crossing	137	Beach or pool
114	Lay-by	138	Turn right-Main roads
115	Parking	139	Turn right-Main and International road N2
116	Parking with time limit	140	Turn right ahead-main roads
117	One-way road	141	Turn right-minor road

118	Pass on either side	142	Turn right-minor road D42
119	Hospital	143	Turn right ahead-minor road
120	No through road	144	Turn right ahead-Main and International road N2
121	Bus lane	145	Traffic lane sign
122	End of bus lane	146	Pre-Identification, Turn Right-Main and International road N1
123	Highway	147	Detour-Advance warning
124	End of Highway	148	Temporary detour
125	Built-up area	149	Turn right ahead-minor road D42
126	End of built-up area	150	Detour

Additional plates			
151	Distance	156	Passenger vehicle
152	Distance interval	157	Direction applies in both directions
153	Time-period	158	Direction-to the right
154	Gradient	159	Direction-to the left ahead
155	Total width		

Background marking and edge markings			
160	Background marker-one-sided	164	Hazard marker-standard
161	Background marker-two-sided	165	High mounted hazard marker
162	Direction marker	166	Exit marker
163	Hazard marker		

Traffic light signals and road markings			
167	Traffic light	174	Lane dividers
169	Pedestrian signals	175	Bus lanes Divider
170	Red light for level crossings	176	Edge lines
171	Lane access signals	177	Exit line
172	Centre solid lines (prohibitory lines)	178	Pedestrians crossing
173	Centre or hazard lines		

11.3. Ready to Ride

Theoretical and Practical module

On completion of this module, the trainee will be able to:

- Be fit to ride;
- Use safety gear/clothing;
- Familiarise themselves with the motorcycle;
- Carry out basic servicing of the motorcycle;
- Make any necessary repairs/adjustments;
- Identify the benefits of inspecting the motorcycle regularly;
- Inspect the wheels, tyres and brakes;
- Inspect the body of the motorcycle;
- Inspect the propulsion system of the motorcycle;
- Inspect the controls of the motorcycle.

Before taking a trip, a safe and responsible rider ensures that they:

- Are physically and mentally fit to ride;
- Become familiar with their motorcycle;
- Check their motorcycle before riding;
- Wear the right safety gear/clothing.

Be physically and mentally fit to ride

The majority of road crashes are likely to involve human error, ranging from simple mistakes to deliberate dangerous and illegal behaviour. Every year many people are killed in crashes in which a rider was careless, reckless or in a hurry.

Speed is the single biggest contributory factor in motorcycle crashes. Road crashes often occur when a rider 'looked but did not see'.

Motorcycle riding is a very personal thing; a rider's attitude, how they deal with their own mistakes and their reaction to those made by other people, will influence their own safety and wellbeing and that of other road users around them.

Aggressive, selfish or impatient attitudes when riding can develop into a tendency to take irresponsible risks, such as:

- Tailgating (riding too close to the vehicle in front);
- Exceeding speed limits;
- Overtaking dangerously;
- Jumping red lights.

A rider's emotional mood can influence behaviour. Riders commonly express how they feel in the way they ride. Traffic delays and congestion can influence their frame of mind. Life stresses, such as relationship anxieties, financial or employment problems, domestic or workplace arguments, influence our mood and can affect our riding.

As a rider, they must play their part by making sure that they are fit to carry out their riding duties. They should plan their journeys safely and obey occupational health and safety and road traffic laws. They must also understand and follow the riding rules and regulations of their employer or association, if applicable.

Their physical health, psychological and emotional state and their general attitude towards riding play a major part in their fitness to ride.

Research in four countries in sub-Saharan Africa, as part of a ReCAP project, found that in Kenya almost all riders mentioned **health problems** as an occupational hazard of riding motorcycle taxis in rural areas. Common complaints included **lower back pain**, and **numbness in legs and hands** (associated with sitting for a long time and riding on rough roads), and **chest infections** (associated with the cold, wind and dust). Other complaints included **eye problems** (associated with dust and bright sunlight), **headaches** and **hearing problems** (associated with vibrations on rough roads and ill-fitting helmets), and to a lesser extent skin infections (usually associated with sharing helmets). **Fatigue** and **exhaustion** were also cited as issues by many of the riders.

If they are unfit or unwell then they should not ride until they are sufficiently recovered. If they are employed as a rider then they should inform their employer about any health issue or personal circumstances that may affect their riding (their employer may require this).

It is important to remember that their fitness to drive can be negatively affected by:

- Fatigue;
- Alcohol;
- Drugs (over the counter, prescription or illicit);
- Temporary illness;
- A long term medical condition;
- Daily stress events;
- Distractions.

Fatigue

Fatigue is a major contributory cause of vehicle collisions. Thousands of crashes are caused by tired riders. They are usually severe because a sleeping rider cannot brake or take avoidance action; so the impact generally occurs at high speed. Fatigue related collisions often result in very serious injuries or death. The rider is most likely to feel fatigued when riding:

- On long journeys on monotonous roads;
- Between 2am and 6am;
- Between 2pm and 4pm;
- After having less sleep than normal;

- After drinking alcohol;
- After taking medicines which cause drowsiness;
- On journeys after a very long working day.

The rider should not ride or continue riding if they are suffering from fatigue

Alcohol and Drugs

The consumption of alcohol or drugs (including certain prescription and over-the-counter drugs) impairs judgment, makes riders over-confident and more likely to take risks. It slows reactions, increases stopping distances, affects judgment of speed and distance, and reduces the field of vision. Even a small amount of alcohol, well below the legal limit, can seriously affect the rider's ability to ride safely.

Riders under the influence of drink or drugs kill and injure many people every year.

Riders who have consumed alcohol may focus more on tasks such as gear changes and take too long to make vital decisions and may miss hazards such as pedestrians on the roads.

It is almost impossible to be sure how many units have been consumed because the alcoholic strength of drinks varies enormously, as does the size of measures and how the body reacts to alcohol.

It is difficult to know the alcoholic strength of a drink without seeing the bottle. Drinks poured at home are usually larger than ones bought in a pub or restaurant. The only safe option is to avoid drinking any alcohol in the hours before the rider will be riding. There can still be alcohol in the bloodstream in the morning after drinking alcohol the previous evening. A rider should never rely on trying to calculate accurately how much alcohol is in their body, and whether they are above or below the drink ride limit. A zero tolerance approach to drinking alcohol and consuming drugs should be adopted by riders.

Medicines and Riding

A rider should check with their doctor or pharmacist whether any over-the-counter or prescribed medicines they are taking are likely to affect their riding (for example, by causing drowsiness). If so, ask for an alternative that does not affect riding, or avoid riding altogether.

Always check the label on medicines and the patient information leaflet for any warnings.

There are many common drugs that have side effects that may impair riding ability such as:

- Sleeping tablets;
- Anti-depressants;
- Sedatives, tranquillisers or other medicines for anxiety;
- Some pain killers;
- Some allergy or hay-fever medicines;

- Many cough and cold remedies;
- Some medicines for epilepsy;
- Some medicines for diabetes;
- Some medicines for blood pressure or heart conditions;
- Some herbal remedies or supplements.

Some medicines can make the rider feel fatigued

The rider may have impaired cognitive functioning or medicines may affect their confidence and emotional state.

Short- and long-term illnesses/medical conditions

The rider's general health will affect their ability to ride safely. They should refrain from riding if illness or medical conditions reduce their ability to ride safely. This could be through being more fatigued or due to medication.

In the findings of the research carried out in four countries, Kenyan riders described **mitigating** against health issues and injuries, with older riders in particular more willing than younger riders to wear helmets, despite reports that helmets are said to be ill-fitting, to obscure vision and to be expensive. Riders often wear a hat underneath the helmet creating a tighter fit and to reduce vibrations. This is also said to reduce the risk of skin infections when sharing helmets.

Some older riders reported wearing sunglasses to reduce dust and glare, knee pads and multiple layers of clothing to reduce the wind and cold and to minimise the severity of injury in the event of a crash. Limiting the number of hours worked to reduce fatigue was also practised by older riders.

Daily Stress Events

Stressors are generated by day-to-day events, e.g. work related issues, relationship difficulties, financial matters and family matters. It is important for the rider to manage these stress events in order to minimise their impact on their riding.

Distractions

Riding requires the rider's full concentration all of the time. Trying to do something else while riding will distract them, slow their reactions and make a crash more likely. Examples of distractions are: eating, drinking, talking to passengers, adjusting clothing etc.

Mobile phones

Using a mobile phone while riding is a significant distraction, and greatly increases the risk of collision. This not only includes conducting a phone call while riding, but also reading/writing SMS messages and using the internet.

Depending upon the circumstances, riders could be charged with riding without reasonable consideration, careless or even dangerous riding if an incident occurs whilst they are distracted because they are using a hands-free phone.

Using a hands-free phone while riding does not significantly reduce the risks because the problems are caused mainly by the mental distraction and divided attention of taking part in a phone conversation at the same time as riding.

The best advice is to switch the phone off whilst riding. If the rider must deal with that call, they should find a safe place to pull over and do so.

Riders' associations and unions

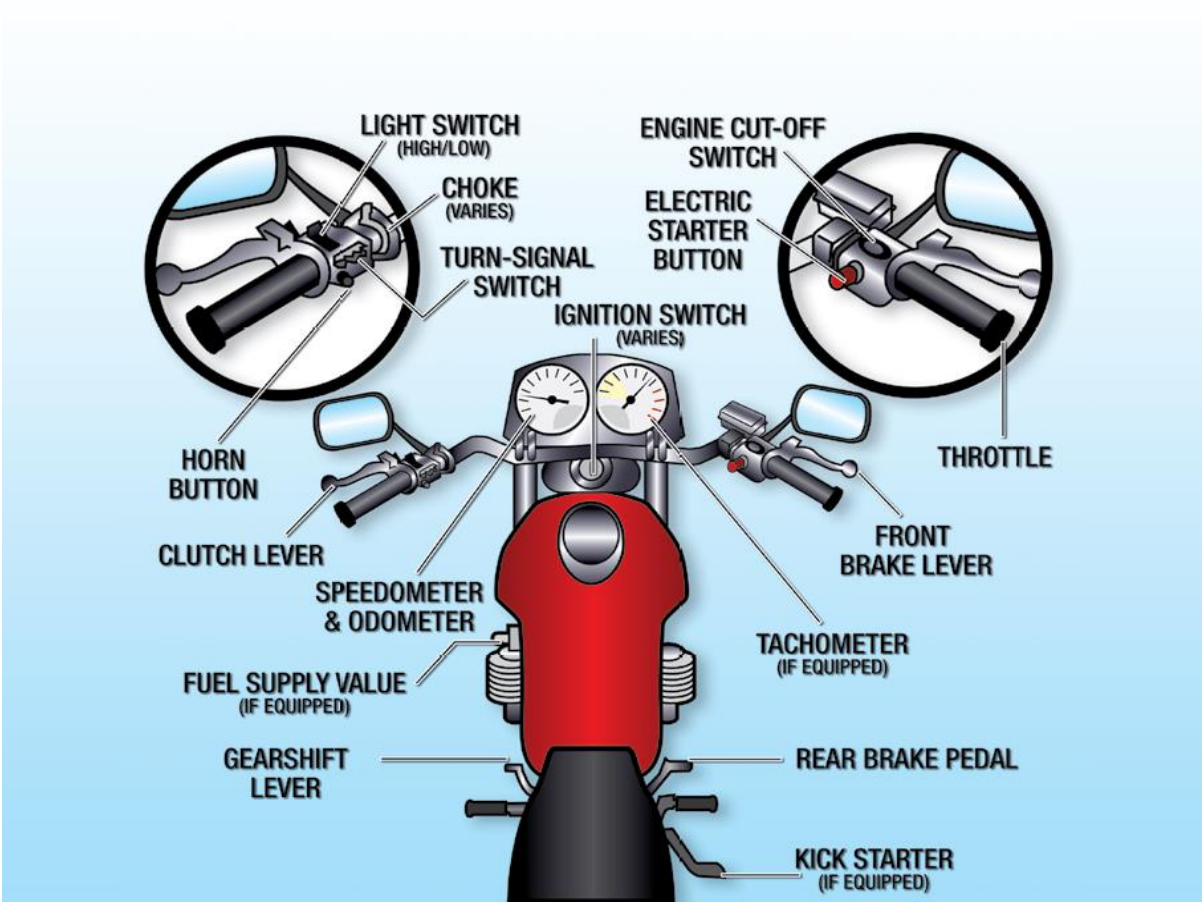
Riders' associations, workers' unions or employers (if applicable) can, in many cases, provide support and advice to help deal with issues affecting riders' wellbeing. Riders should see what is offered by the associations or unions open to them and choose whether membership is of value.

Become familiar with the motorcycle

The rider should make sure that they are completely familiar with the motorcycle prior to riding. This is particularly important if they are using an unfamiliar motorcycle:

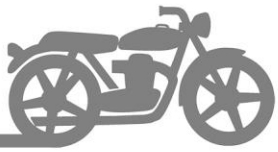
- Make all the safety checks they would routinely perform on their own motorcycle;
- Thoroughly inspect the equipment, particularly the turn signals, horn, lighting switches, fuel control valve, and engine cut-off switch. They should be able to find and operate the equipment without having to look for it;
- Check the controls. Know the gear pattern. Work the throttle, clutch, and brakes a few times prior to riding. All controls react a little differently;
- Ride very cautiously until they become familiar with the manner in which the motorcycle handles. For instance, accelerate gently, take turns more slowly, and leave themselves additional room for either manoeuvring or stopping.


MIRRORS
LEFT - CLUTCH LEVER
RIGHT - THROTTLE AND FRONT BRAKE LEVER
IGNITION SWITCH
PARCEL SHELF
FUEL TANK CAP
INSTRUMENT CLUSTER
TAIL/BRAKE LIGHT
FRONT HEADLIGHT
REAR INDICATORS
FRONT INDICATORS
REAR SUSPENSION ARM
PASSENGER FOOT REST
KICK START LEVER
REAR BRAKE PEDAL


LIGHT SWITCH (HIGH/LOW)
CHOKE (VARIES)
TURN-SIGNAL SWITCH
ENGINE CUT-OFF SWITCH
ELECTRIC STARTER BUTTON
IGNITION SWITCH (VARIES)
HORN BUTTON
THROTTLE
CLUTCH LEVER
FRONT BRAKE LEVER
SPEEDOMETER & ODOMETER
TACHOMETER (IF EQUIPPED)
FUEL SUPPLY VALVE (IF EQUIPPED)
GEARSHIFT LEVER
REAR BRAKE PEDAL
KICK STARTER (IF EQUIPPED)

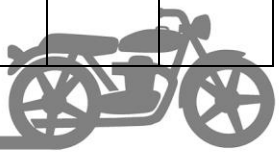
Inspect the motorcycle to ensure it is in a roadworthy condition

Pre-ride inspections help ensure a trouble-free ride and provide confidence that the motorcycle will respond properly. A motorcycle will continue to ride like new and safe if it is properly maintained and routine inspections become part of its maintenance cycle.



Before riding the motorcycle, perform the following checks:

PRE-RIDE INSPECTION CHECKLIST				
S/N	Area of Inspection		Safe to operate	
			YES	NO
1	Fuel	• Enough fuel level for planned distance of journey		
		• Fuel leakage in fuel lines		
2	Tyres and Wheels	• Foreign material, tyre tread, side wall and tyres condition		
		• Air pressure		
		• Axle nut in place and secured, cotter pin in place		
		• Wheels, spokes tight		
3	Cables and Controls	• Adjustment and operation		
		• Throttle cable play of 3 to 4 mm. operation		
		• Gear shift level operation		
4	Lights and Mirrors	• Working condition and adjustment		
5	Indicators	• Flashing		
6	Engine oil	• Engine oil level		
		• Leakages and cleanness		
7	Suspension	• Suspension movement, adjustment and leaks		
8	Stands	• Retracts firmly damage, cut-out switch operates, spring intact		
9	Brakes	• Wheel movement when a lever is fully pulled in or depressed		
		• Brake fluids level		
		• Wear lining Indicator		
		• Brake Pedal Play 15 to 20 mm.		
		• Brake dragging		
10	Drive Chain	• Drive Chain slack of 25 to 30 mm., and lubrication		
11	Battery	• Terminals cleanness and tightness, security, vent tube		
12	Clutch	• Clutch lever play - 2 to 3 mm.		
		• Clutch fluids level		
13	Steering	• Steering Lock lever fouling		



11.4. Basics of Motorcycle Riding

Practical module

On completion of this module, the trainee will be able to:

- Position their body on a motorcycle for maximum control;
- Adjust mirrors to maximise visibility to the rear;
- Balance for safe riding;
- Start and stop the engine safely;
- Perform basic moving off;
- Perform basic stopping;
- Park the motorcycle;
- Conduct effective observation;
- Anticipate possible hazards;
- Plan for anticipated hazards;
- Apply Hazard Drill for safe manoeuvring;
- Identify the principles of changing gears;
- Change up through the gears;
- Change down through the gears.

Riding a motorcycle involves some risks not encountered when driving cars and trucks. Motorcycles do not have the stability of cars because they must be balanced, and motorcycles leave the rider more vulnerable in a crash because there is less protection. Motorcycles are not as readily seen as cars, trucks, or other motor vehicles because of their size. Other motorists, particularly those who don't ride a motorcycle, may not be looking for motorcycles in traffic. This places the motorcyclist at risk, particularly at junctions.

Personal Protective Equipment

Personal Protective Equipment (PPE) is equipment that protects the rider against safety risks whilst riding. It includes items such as helmets, gloves, eye protection, high-visibility clothing, appropriate footwear and other safety clothing.

Ideally, PPE should fulfil all of the following requirements, thereby reducing the risk of serious injury or death to the rider and their passengers:

PROTECTION against abrasion and impact

COMFORT to assist the rider in maintaining focus on the road

VISIBILITY to assist other road users to see the rider

Properly fitting PPE helps a rider stay comfortable and visible regardless of riding conditions. In the event of a crash, PPE will also reduce the severity of injuries.

The benefits of wearing PPE[3]

Part of Body	PPE	Relative Reduction in Risk of	
		Any Injury	Open Wound Injury
Feet & Ankles	Non-motorcycle boots	53%	76%
Hand & Wrist	Motorcycle gloves	45%	73%
Feet & Ankles	Motorcycle boots (armoured)	45%	90%
Legs only	Motorcycle trousers (including body armour)	39%	59%
Upper body	Motorcycle jacket (including body armour)	23%	63%

The benefits of wearing any type of boot are evident from this table, and on average result in a 53% reduction in risk of any foot or ankle injury when compared to not wearing boots at all. However, armoured motorcycle boots offer a more effective solution to reducing the risk of injury to riders of motorcycles or three-wheelers particularly with regards to the risk of open wound injuries.

Helmets

Considerable research has established that helmets save lives by reducing the occurrence of head injuries, and wearing a helmet does not reduce essential vision or hearing.

The World Health Organization has found that; 'Helmets do not affect peripheral vision or contribute to crashes. Helmets may reduce the loudness of noises, but do not affect the ability of a rider to distinguish between sounds. Some studies have indicated that properly fitted helmets can actually improve the ability to hear by reducing the noise of the wind.'[4]

When purchasing a helmet, there is both shape and size to consider. The rider's helmet should fit their head tightly, but also provide all-day comfort. There should be no pinches or pressure points. To see if a helmet is the correct size, the rider should put it on and try to move it around their head with their hands while holding the head still. If the helmet doesn't rotate, it is the right size. The rider's head shape and size varies so it may be necessary to try on a number of different helmets to find the correct size. Do not wear other headgear, such as woolly hats, underneath a helmet.

For a helmet to be effective it needs to be of sufficient quality to provide maximum protection to the head. Helmet standards are used as a regulatory measure to ensure a uniformly recognised safety level for helmets available on the market and used by riders. Use ONLY helmets that meet national standards.

It is also essential that a helmet is securely fastened, so as to prevent it falling off during a crash, and therefore not then protecting the head from injury.

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[3]deRome, L.,et al. Motorcycle protective clothing: Protection from injury or just the weather? Accid. Anal. Prev. (2011),doi:10.1016/j.aap.2011.04.027

[4]Helmets: a road safety manual for decision-makers and practitioners. Geneva, World Health Organization, 2006.

Particularly for passengers who would wear a shared helmet, concern about fungus or other infections are an issue. The rider should ensure that the helmet is regularly cleaned and disinfected.

Helmet types

Full Face | Open Face | Half Head | Tropical

A summary of the effectiveness of motorcycle helmets[5]

NOT WEARING A HELMET	WEARING A HELMET
Increased risk of sustaining a head injury	Decreases the risk and severity of injuries by on average 72%
Increased severity of head injuries	Decreases the likelihood of death by up to 39% (key dependent = the speed at which the motorcycle is travelling
Increased time spent in hospital	Decreases the costs of health care associated with crashes
Increased likelihood of dying from a head injury	Decreases the risk of death

The World Health Organization's report *Helmets: a road safety manual for decision-makers and practitioners* (2006), states the following important facts that highlight the importance of wearing helmets whilst operating a motorcycle or three-wheeler:

- **Injuries to the head and neck** are the main causes of death, severe injury and disability among users of motorcycles and bicycles. In some countries head injuries are estimated to account for up to **88%** of such fatalities
- **Helmets reduce the risk of serious head and brain injuries** by reducing the impact of a force or collision to the head
- The correct use of a helmet considerably **decreases** the risk and severity of head injuries (this includes the proper fastening of the helmet)

[5]Helmets: a road safety manual for decision-makers and practitioners. Geneva, World Health Organization, 2006.

In research carried out in rural settlements under the ReCAP project in 2018, **19%** of commercial motorcycle riders in Tanzania admitted to **NOT** always wearing a helmet; citing cost, lack of availability and discomfort amongst the reasons. In Kenya this figure was **24%** and in Uganda it was **25%**. Riders cited discomfort, cost and restriction to vision and hearing as amongst the reasons for not wearing helmets.

For passengers, **45%** in Tanzania claim to always wear a helmet, **10%** in Kenya and just **1%** in Uganda. The main reason given for not wearing a helmet was that the rider did not have a helmet for them to wear.

Face Shields

Face shields come in a variety of designs to fit almost any helmet. Some flip up for convenience and some helmets have fixed types, such as the flat shield, that attaches directly to the helmet. If the rider selects a curved face shield (either a flip-up or a fixed style) ensure that it does not distort the rider's vision. When using a face shield, be sure that it is securely fastened to the helmet.

The shield should be impact-resistant and free from scratches. Scratches can refract light and blur the rider's vision. Face shields may be cleaned with a mild solution of soap and warm water or a good quality plastic cleaner. Tinted shields help avoid eye fatigue during daylight hours, but always use a clear shield at night.

Make sure the shield is designed for the helmet and does not prevent the rider wearing eyeglasses if needed.

Goggles

Goggles provide protection for the eyes, but not for other parts of the face. Goggles should be securely fastened over the helmet so they do not blow off. Most frames have a rubber/cotton-fibre strap that resists tearing and stretching. It should be noted that full-face helmets and face shields provide better protection for the entire face and would be preferable.

Gloves

Full-fingered motorcycle gloves protect hands from blisters, the sun and cold and will help prevent cuts, bruises and abrasions in day to day riding as well as in a crash. Seamless gloves or gloves with external seams will help prevent blisters.

Gloves that fit properly will improve grip on the handlebars. If the gloves are too loose or bulky, the rider may have problems operating the controls of the motorcycle. Gauntlets (gloves with long cuffs) will prevent cold air from going up the sleeves.

Motorcycle gloves are available in many styles. Lightweight gloves may be more comfortable in warmer weather while heavier, lined and/or insulated gloves provide additional protection and warmth.

Footwear

Sturdy, over-the-ankle boots can protect the rider from a variety of riding hazards. In case of a crash, boots help provide valuable protection against foot and ankle injury. Appropriate boots will also protect against burns from hot exhaust pipes and against any injury to the foot or ankle from flying road debris. Boots with oil-resistant, rubber-based composite soles will give the rider a strong grip

on the pavement and help them keep their feet on the pegs. If the boots have heels, they should be low and wide.

Waterproof Riding Suit

For riders, a waterproof riding suit is essential during the rainy season. A dry motorcyclist is more comfortable and alert than a rider who is wet and cold. One or two piece waterproof riding suits are available in a variety of different materials; the most common being polyvinyl chloride (PVC) and nylon.

Orange or yellow coloured suits increase the rider's visibility to other road users. The trousers should be elasticated at the waist and have stirrups to go under the foot or tie-strings on the legs to wrap around the rider's boots. The jacket should have a high collar that can be fastened tight below the chin. The front should zip up and there should be a wide flap which fastens across the zip opening to prevent water entering. The wrist openings should be elasticated and fit snugly.

The rider should also consider purchasing glove and boot covers. Most glove covers are large enough to fit over gauntlet type gloves without interfering with hand flexibility. The boot covers have tie-strings on top and should be worn under the trousers.

Hearing Protection

Long-term exposure to engine and wind noise can cause permanent hearing damage, even if the rider has a quiet motorcycle and wears a full-face helmet. Whether riders choose disposable foam plugs or reusable custom-moulded devices, properly worn hearing protection reduces noise, while allowing the rider to maintain the ability to hear important sounds like car horns and sirens.

Pre-ride inspections

Pre-ride inspections help ensure a trouble-free ride and provide confidence that the motorcycle will respond properly. A motorcycle will continue to ride like new and safe if it is properly maintained and routine inspections become part of its maintenance cycle.

Before riding the motorcycle, perform the following checks:

- **Tyres** – Check the air pressure, general wear, and tread depth;
- **Fluids –** Check oil and fluid levels. Also inspect the underside of the motorcycle for signs of oil and fuel leaks;
- **Lighting –** Check motorcycle switches to ensure that all lighting is working properly;
- **Indicators –** Check both right and left indicators to ensure that signals are working properly;
- **Clutch and Throttle –** The clutch should feel tight and smooth. The throttle should snap back when released;
- **Mirrors –** Clean and adjust both mirrors prior to riding;
- **Brakes –** Try the front and rear brake one at a time. Make sure each one feels firm and holds the motorcycle when the brake is fully applied;
- **Horn –** Make sure the horn is working properly.

Position your body on a motorcycle for maximum control

To properly control the motorcycle, the rider's body must be in the proper position. Their body should be relaxed but fairly erect. This allows them to use their arms to steer the motorcycle rather than to hold themselves up.

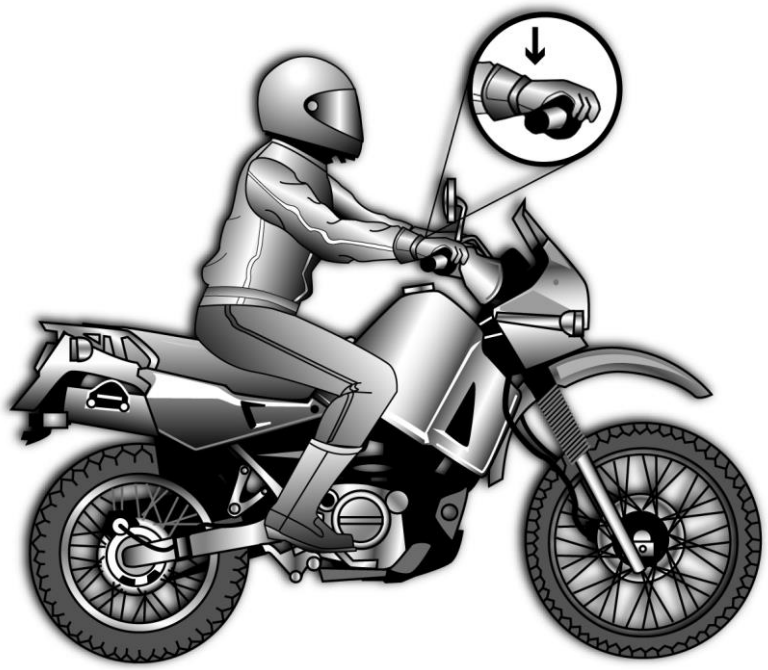
Seat

Sit close enough to the handlebars to reach them with relaxed and slightly bent arms. The rider bending their arms permits them to turn the handlebars without having to stretch.

Hands

Hold the handgrips firmly to help keep a grip over rough surfaces. Start with wrists flat. This will help keep the rider from accidentally using too much throttle, particularly if they need to reach for the brake suddenly.

Adjust the handlebars so their hands are even with or below their elbows.



Knees

Hold knees firmly against the fuel tank. This will help their balance as the motorcycle turns.

Feet

Keep feet firmly on the foot pegs to maintain balance. Do not drag feet along the ground. If a foot catches on something, the rider could be injured and it could affect their control of the motorcycle. Keep feet near the controls so the rider can use them quickly if needed. Do not point toes downward, as they may get caught between the road and the foot peg.

Adjusting mirrors

Make sure the mirrors themselves move freely, but are not so loose that they will move with the wind. Sit on the motorcycle, bring it to an upright position, and point the front wheel straight ahead. It is generally recommended that the rider *adjusts* the mirrors so that just the very tops of their shoulders and elbows are shown, this way the mirrors should be able to cover half the lane behind them, giving them whole lane visibility. They also then need to be able to see as much of the adjacent lanes as possible so they can keep an eye on traffic. Remember that they will still have blind spots and will need to look over their shoulder before changing lanes.

Starting the engine

A procedure called **FINE-C** is used to start the engine. It stands for **F**uel, **I**gnition, **N**eutral, **E**ngine cut–off switch, and **C**hoke/**C**lutch.

Fuel Supply Valve: Turn the fuel valve **ON** ("vacuum" valves do not have an "off" position).

Ignition: Turn the ignition switch to the **ON** position. The indicator lights should come on.

Neutral: Shift the transmission to **NEUTRAL**; check to be sure by rolling the motorcycle with the clutch lever released and front brake released (don't rely on the green light in the instrument cluster).

Engine Cut-Off Switch: Put the switch in the **RUN/ON** position.

Choke/Clutch: Set the choke as needed (ON for a cold engine). Some motorcycles require that the clutch be squeezed before the starter will operate. Even if this is not required, it is a good habit to squeeze the clutch lever as a precaution against starting in gear, just in case Neutral has not been selected prior to starting.

To start the engine with an electric starter, press the starter button. Note: When using the choke to start a cold engine, avoid using the throttle. Even a slight amount of throttle may prevent the engine from starting. Some motorcycles have a safety mechanism that prevents the motorcycle from starting if the clutch is not squeezed. Some won't start if the side stand is down, while others allow the engine to start, but stall if the side stand is down and the gearshift lever is used.

To stop the engine, move the engine cut-off switch to OFF. Do this every time so the rider can reach the switch quickly if they need to. Turn the ignition switch to **OFF**. Turn the fuel valve to OFF if the motorcycle has a manual valve.

Perform basic moving off

- Disengaging the clutch (using the left hand to pull the lever towards the rider);
- Selecting a first gear using the shift lever (with the left foot);
- Return left foot to the ground to maintain balance;
- Balance throttle with clutch to get bite point;
- Place both feet on footrests once motorcycle is moving.

The bite point is that area in the travel of the clutch lever that begins where the clutch starts to transmit power to the rear wheel and ends just before the clutch becomes fully engaged. It is a region of partial engagement in which the clutch 'slips' to permit the rider to precisely control engine power to the rear wheel. Proper use of the friction zone is one of the most important skills they must develop as it is how motorcyclists get moving smoothly from a stop.

Performing a basic stop

- Use clutch and both the hand and foot brakes to stop the motorcycle;
- Place left foot on the ground first then release footbrake and place right foot on the ground;
- Engage neutral and return left foot to the ground.

Stopping the engine

- Move the engine cut-off switch to OFF;
- Turn the ignition switch to OFF;
- Turn the fuel valve to OFF if the motorcycle has a manual valve.

Parking the motorcycle

- Manoeuvre the motorcycle into a safe parking position;
- Use the side stand safely;
- Use the main stand safely.

Gear Shifting

a) To up-shift:

- Roll off the throttle;
- Squeeze the clutch lever;
- Place foot under the gear lever and lift to shift up;
- Slowly release the clutch and ease into the throttle;
- Release the gear lever.

b) To downshift:

- Come off the throttle;
- Squeeze the clutch lever;
- Place foot on top of the gear lever and press down;
- Release the clutch slowly and roll on the throttle;
- Take foot away from the gear lever.

Braking

- Use both the front and back brakes to slow down and stop;
- Try to reduce speed before entering a corner;
- Braking traction will be reduced the more the rider leans the bike;
- When braking in a corner, do so slowly and gradually;
- Do not use as much force as normally used when braking in a straight line.

Turning

Apply the hazard Drill, MSM-PSL (Mirror, Signal, Manoeuvre, Position, Speed, Look) – see the Defensive Driving module for full details of the Hazard Drill.

As the rider heads into a turn, they should make sure that they:

- Slow down first;
- Look through the turn toward the exit;
- Lean the bike slightly by pressing the handgrips;
- As they begin to exit the turn, roll the throttle. This will help them increase their speed, gain balance, and return the bike to its upright position.

11.5. Motorcycle Manoeuvring Exercises

Practical module

On completion of this module, the trainee will be able to safely:

- Perform emergency stops;
- Ride at very low speed under full control;
- Manoeuvre the motorcycle through a slalom/zig zag;
- Manoeuvre the motorcycle through a 'figure-manoeuvre';
- Perform a 'U-turn'.
- Master left and right bends and turns.

Riding a motorcycle is not just about being able to ride at speed while under control; it also requires the rider to be able to control the motorcycle at low speeds while carrying out manoeuvres such as performing a U-turn or manoeuvring between stationary queuing vehicles.

Performing an emergency stop

There may be a need to stop in an emergency to avoid something. This could be a child running across the road; an animal straying into the rider's path; a car pulling out of a side junction or turning across in front of them having not seen them; or the vehicle in front of them performing an emergency stop.

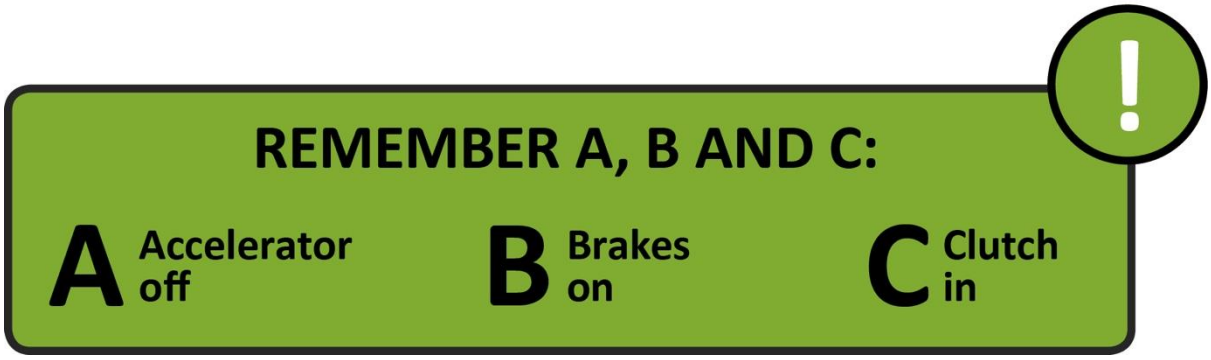
Every motorcycle is different and the performance will vary depending on how well maintained it is and how well adjusted the brakes are. It is therefore important to practice emergency stopping regularly and especially when riding a new or unfamiliar motorcycle.

A motorcycle has independently operable brakes on the front and rear wheels and it is the rider's responsibility to use them to the best effect. Excessive front braking can cause a front wheel skid resulting in the rider falling off the motorcycle and possibly injuring themselves. Under braking the weight of the motorcycle pivots forward onto the front wheel, so 70% of effective braking needs to be to the front wheel. The rider should practice braking to gain a feel and understanding of the effectiveness of the brakes and necessary braking force required. If the wheel locks up then the pressure on the brakes needs to be eased off and then reapplied once the tyre regains grip.

While the rider is applying heavier pressure to the front brakes, they should not forget the rear. It will not take so much force as the tyre is starting to unload with the weight transfer under braking to the front, but steady pressure will keep it in check without a skid developing.

The front brake is the most powerful, so apply the front brake first, followed by the rear brake, followed again by the front brake. The rider will need around 75% pressure to the front brake with around 25% to the rear. They should not grab harshly at the brakes, but use progressive pressure. Remember, the need to stop quickly, so if this is not happening, they should apply more pressure to the brakes.

Braking technique is of course essential during this exercise.



The emergency stop exercise should be conducted on a suitably select area of ground with a firm even surface.

If the surface is tarmac then the rider should get up to a speed of approx. 50km/h and then upon being given an agreed hand-signal by the instructor/examiner should bring the motorcycle to a stop. The key elements of the emergency stop is to stop as quickly as possible, but to retain full control of the motorcycle.

Depending on the size of the area available the rider may not have the distance to be able to build up the necessary speed in a straight line. If this is the case then the rider could ride around the boundary of the area at a reasonable speed (such as 20-30km/h) and then build up the speed after exiting the bend onto the straight.

THINGS TO REMEMBER ON THE EMERGENCY STOP

- Always perform observational safety checks before moving off;
- Reach the required minimum speed of 50 km/h;
- Upon seeing the emergency brake signal, react swiftly – throttle off but use the brakes progressively, not aggressively;
- Use the front brake first followed by the rear brakes and continue to apply front brake without locking wheels (around 75% front, 25% rear);
- Use all four fingers to apply front brake;
- Remember A, B and C;
- If wheels begin to lock, release brake to unlock wheels and progressively apply pressure again;
- Apply clutch lever to avoid stalling just before stopping.

EMERGENCY STOP IN THE WET

When conducting this exercise in heavy rain conditions, the motorcycle is unlikely to stop in the same distance as if the conditions were dry, and the rider cannot use the same braking technique. Using the same braking technique for the dry will possibly see the front tyre lose traction, lock the wheel and skid. Instead of a 75% and 25% brake distribution, apply a more even pressure to the brakes of around 50% front and 50% rear.

EMERGENCY STOP IN THE REAL-WORLD

Braking techniques as outlined above should also be adopted in real-world riding on public roads should the rider need to. The most effective stopping procedure in an emergency is to try and prevent it happening in the first instance by forward planning and anticipating the road ahead.

Control of a motorcycle at low speeds

Being able to control a motorcycle at low speeds while maintaining full control is a necessary skill for all motorcycle riders; whether it is in a straight line as they follow slow moving traffic or while manoeuvring around stationary vehicles.

In order to ride slowly under full control the rider must learn to coordinate the careful and delicate use of gears, clutch, brakes and steering to safely maintain a low speed.

The following exercises enable a rider to practice and perfect these skills.

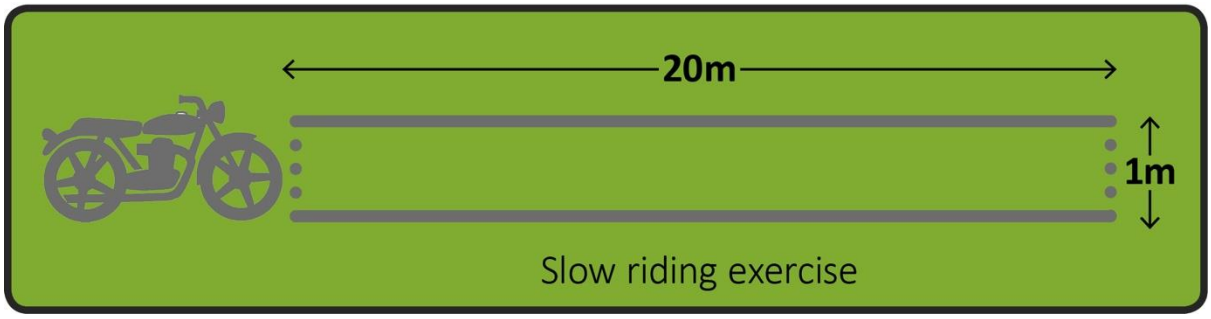
Slow riding

Slow riding is a skill that may be necessary while manoeuvring between vehicles in slow or stationary traffic. It may also be necessary when riding off-road or on very poor roads or tracks.

Slow riding is very different from riding at speed and needs to be practiced.

To practice slow riding a course should be laid out as follows:

- Two straight parallel lines 20 metres long and one metre apart should be marked out using cones, bricks, rope or other suitable material;



The rider should ride as slow as possible along the 20 metre length of the course without setting a foot down or riding over the lines.

Competition between participants should be encouraged and a target of at least 30 seconds should be aimed for.

Slalom/Zig-Zag manoeuvring exercise

The slalom or zig-zag manoeuvre builds skills to control the motorcycle and maintain balance when steering around objects or obstructions.

Six cones should be placed in a straight line 4 metres apart. The rider should manoeuvre through the slalom in a zig-zag fashion, complete a full circuit of the final cone and return to the start zig-zagging once again through the cones.

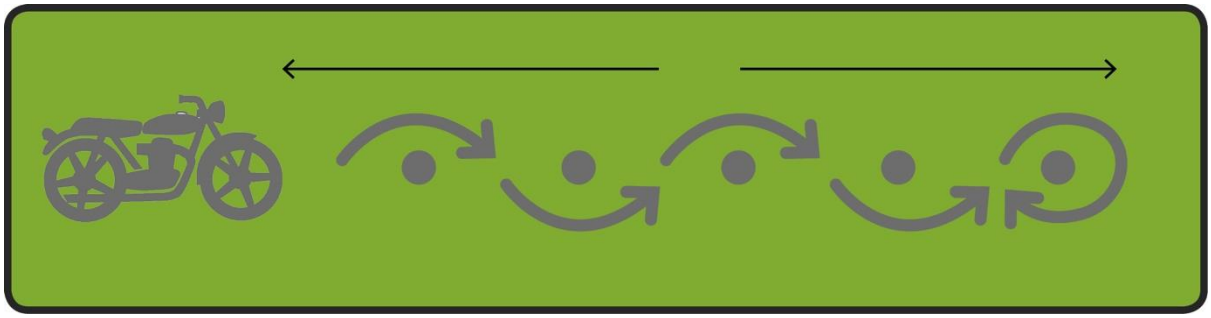
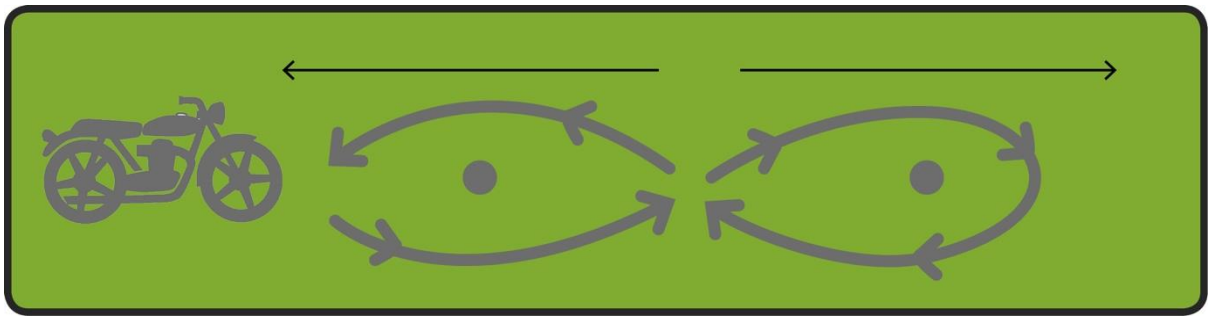


Figure-8 manoeuvre exercise

The figure-8 manoeuvre is similar to the slalom/zig-zag, but it entails completing full circles around the cones.

Two cones should be placed 6 metres apart. The rider should manoeuvre around the cones in a figure-8 pattern. This should be continued for at least three full repetitions.



11.6. Negotiating the Road Safely

Practical module

On completion of this module, the trainee will be able to safely:

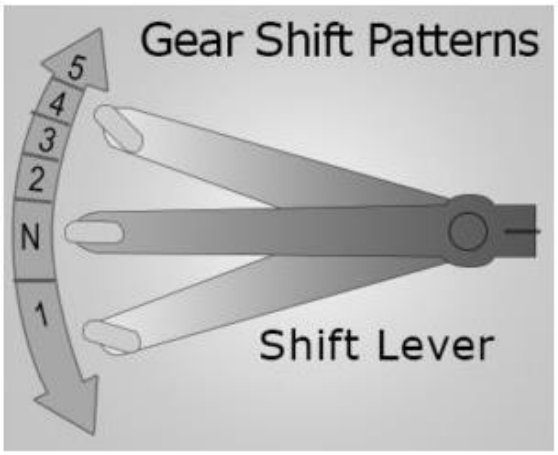
- Use the right gear at the right speed;
- Accelerate;
- Slow down;
- Use safe and systematic procedures to negotiate all types of junction;
- Negotiate an uncontrolled junction;
- Negotiate a junction with signs or markings;
- Negotiate a junction with traffic lights;
- Negotiate a roundabout;
- Negotiate a railway crossing;
- Negotiate a pedestrian crossing;
- Approach all turns with caution;
- Make a turn;
- Divide the lanes into 'thirds'; nearside, central and offside;
- Demonstrate the use of appropriate lane positioning;
- Negotiate various road surfaces;
- Adapt riding to changing conditions;
- Identify hazards to consider before attempting to overtake;
- Demonstrate overtaking in different traffic and road conditions;
- Demonstrate motorcycle riding when being overtaken;
- Overtake on single and dual carriageways;
- Practice filtering when traffic is stationary or moving slowly in queues;
- See, be seen and be heard on the road;
- Demonstrate appropriate interaction with other road users.

In order to prevent collisions on the road it is imperative for riders to apply basic principles of negotiating the road safely, these will involve: changing speed, negotiating junctions, lane positioning, managing various road surfaces and conditions, overtake and being overtaken.

Change speed safely

The purpose of the gearbox in a motorcycle is to increase the engine turning force, provide permanent neutral position and change the vehicle's speed. Low gears provide more turning force, but lower speed; while higher gears provide less turning force, but higher speed. Road condition and engine speed are the main input for gear shift. Motorcycle gearboxes are generally built with a one down and four or five up shift pattern for two major reasons:

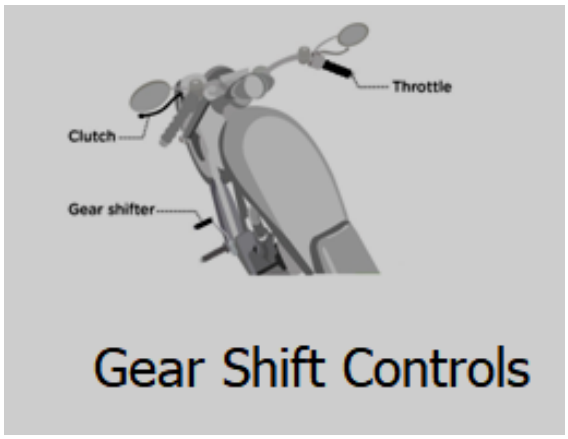
- When waiting at a red light with the bike in neutral, this shift pattern makes it impossible for the rider to accidentally engage second gear by pressing the shifter twice. In an all down or all up pattern, the rider can make the mistake of pressing the shifter twice and trying to pull away in second gear;
- When downshifting from high gears, this shift pattern will make sure that the rider never hits neutral and loses crucial engine braking. When braking in a hurry, shifting down repeatedly will take them to first gear, whereas in an all down or all up system, they will end up in neutral.



Gear Shift Pattern

Gear shifting

Shifting up or down gears at the right time is crucial for road safety and smooth riding. Smooth gear shift is facilitated by three motorcycle controls: the clutch lever, gear shift lever, and the throttle.



The gear shift lever is located on the lower left side of the motorcycle. We use our left foot to change gears. The gear pattern is laid out with first gear at the very bottom, followed by neutral, first, second, third, fourth, fifth, and sometimes sixth gear.

Shifting to a higher gear

Gears are shifted **higher,** for the purpose of increasing the motorcycle speed. This is done as speed increases to a point where shifting is desired to match engine speed to road speed.

Shift up soon enough to avoid over revving the engine, but not so soon as to cause the engine to stall. For smooth gear shifting, the rider should use a 5-step process as follow:

- Roll off the throttle as they squeeze the clutch lever;
- Select the appropriate gear to suit the speed and conditions by lifting up the shift lever firmly as far as it will go with the left foot;
- Slightly revving the engine (twisting the throttle with the right hand);
- Gradually releasing the clutch and roll on the throttle;
- Revving the engine for acceleration until another shift is needed.

Shifting to a lower gear

Gears are shifted down for the purpose of reducing the motorcycle speed (e.g. stopping) or for multiplying the engine turning force (e.g. riding up-hill). To do this, the rider should:

- Roll off the throttle as they squeeze the clutch lever;
- Select the appropriate gear to suit the speed and conditions by pressing the shift lever down firmly;
- Slightly revving the engine (twisting the throttle with the right hand);
- Gradually releasing the clutch and roll on the throttle;
- For multiplying the engine turning force, gently revving the engine or for reducing the motorcycle speed, ease off throttle to slow down and gently apply both hand and foot for effective braking.

Never ride in neutral or with clutch disengaged (coasting). When the engine is disengaged whilst in motion, the rider has less control of the motorcycle. Often the rider may need power and to accelerate at short notice to avoid a hazard. Coasting will delay this, especially if there are problems selecting a gear.

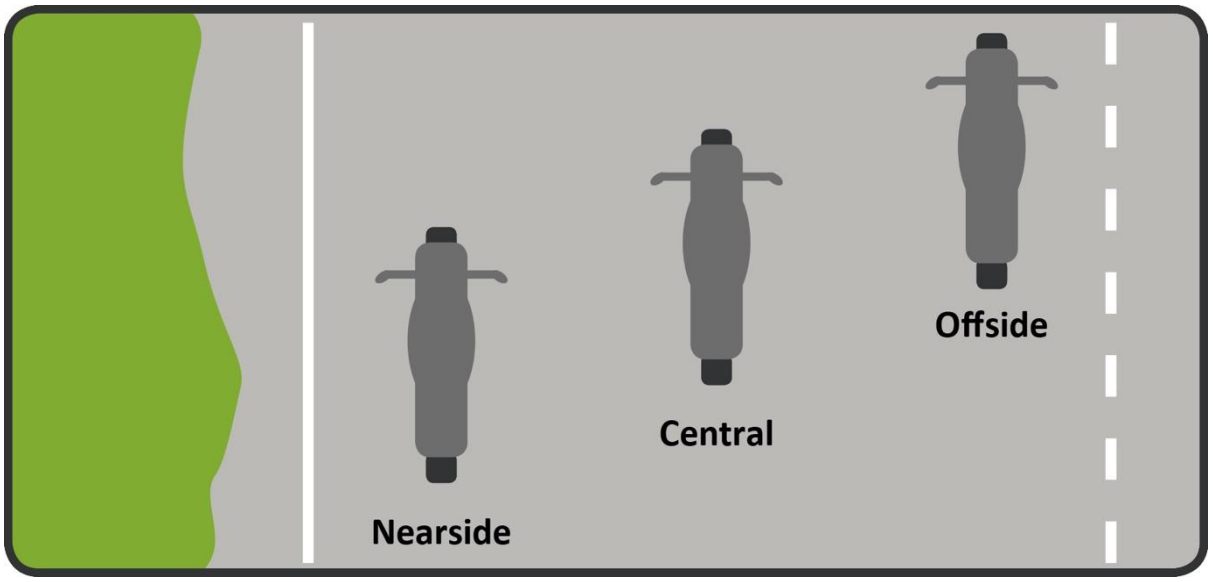
Another potential danger associated with coasting is downhill gradients. A motorcycle whilst coasting is highly likely to gain speed. Excessive use of the brake may be required where they may then overheat and become less effective. Engine braking is an effective technique used alongside the vehicle brakes. Engine braking would not be utilised when coasting.

Road Positioning

Please note that the following illustrations apply to countries where vehicle operators drive on the **left** hand side of the road.

When choosing a road position, never sacrifice safety for any other advantage. The best road position to take should be based on the rider's safety, visibility (to see and be seen), observation, road and traffic conditions, road layout, manoeuvrability, assisting traffic flow and making their intentions clear. Good road positioning is typically the result of lane discipline.

Divide the lane into 'thirds': nearside position, central position and offside position; and use the appropriate position for the circumstance.



The Nearside Position

Benefits:

- Provides a clear view through right hand bends
- Provides a clearer nearside view past goods vehicles
- Generally the best position for left-hand turns as long as there are no nearside hazards

Risks:

- Vehicles emerging from junctions
- Conflicting with pedestrians and pedal cyclists
- Parked cars (doors opening)
- Danger posed by road debris and drains

The Central Position (Approximate central position or any position from which the rider can exert control over invitation space either side)

Benefits:

- Provides good margins of safety left and right;
- Allows the rider to change position to left or right;
- Provides clearance to nearside hazards.

Risks:

- Be aware of the dangers posed by accumulation of oil and diesel, especially in wet weather near junctions and on approach to bends.

The Offside Position

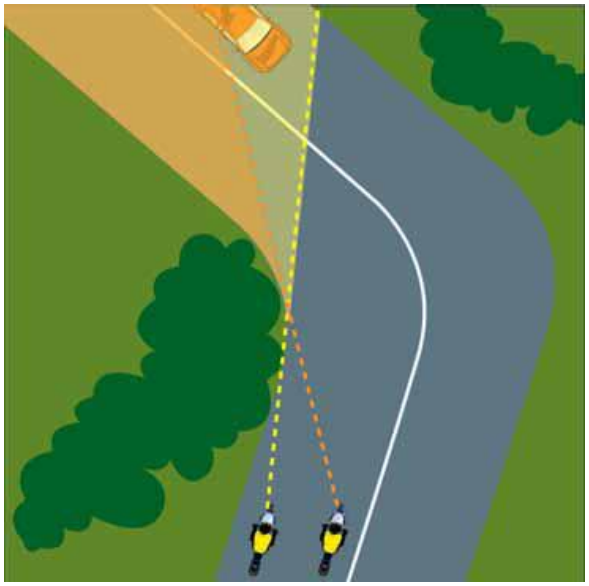
Benefits:

- Provides a clearer view on the approach to left-hand bends;
- Provides added clearance to nearside hazards;
- Generally a good position to take on the approach to junctions in rural areas as vision is improved into the mouth or opening of minor roads left and right;
- Generally the best position for right-hand turns.

Risks:

- Conflicting with oncoming traffic and vehicles crossing from the offside.

Approaching a bend

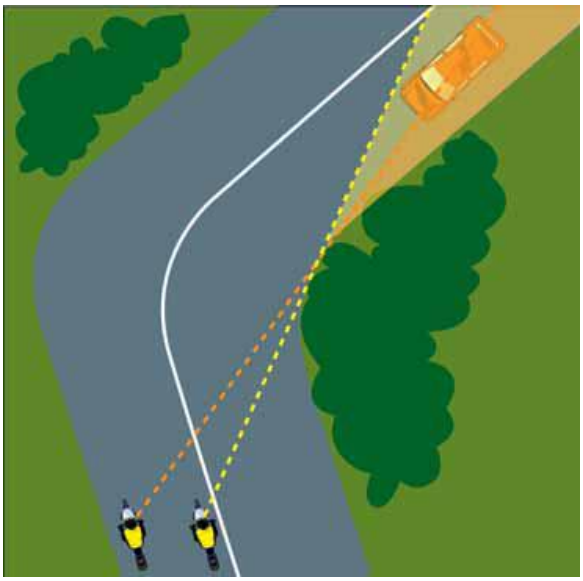


Left bend

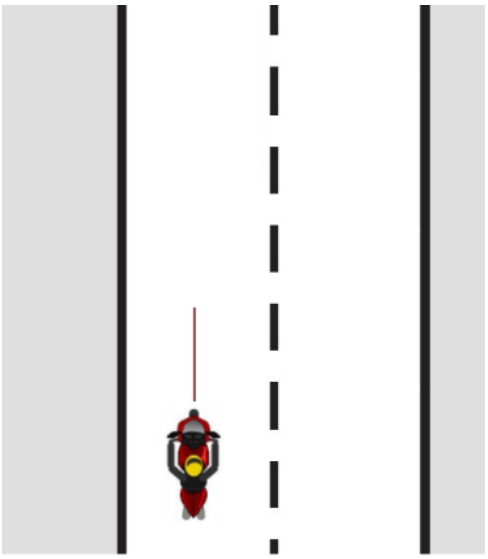
For left hand bends the offside position generally provides a clearer view.

Right Bend

For right hand bends a position towards the nearside (left) of the road provides a clearer view.



Straight ahead



Whilst following the road straight ahead, a generally safe road position is in the centre of the lane; as this keeps a safe distance from oncoming vehicles (right-side of the lane) and keeps the rider out of the gutter (left-side of the lane) where debris and potholes may be present. Anticipate and plan ahead as the rider may need to alter their road position due to obstacles in the road such as parked cars, roadworks, manhole covers or oil spills.

Negotiating junctions safely

The greatest potential for conflict between the rider and other traffic is at junctions. A junction can be controlled or uncontrolled, in the middle of an urban area or at a road on a residential street — anywhere traffic may cross their path of travel. Over one-half of motorcycle/car crashes are caused by drivers entering a rider's 'right-of-way'. Use of Hazard Drill at junctions is critical. The rider, when approaching an intersection where a vehicle is preparing to cross their path, should:

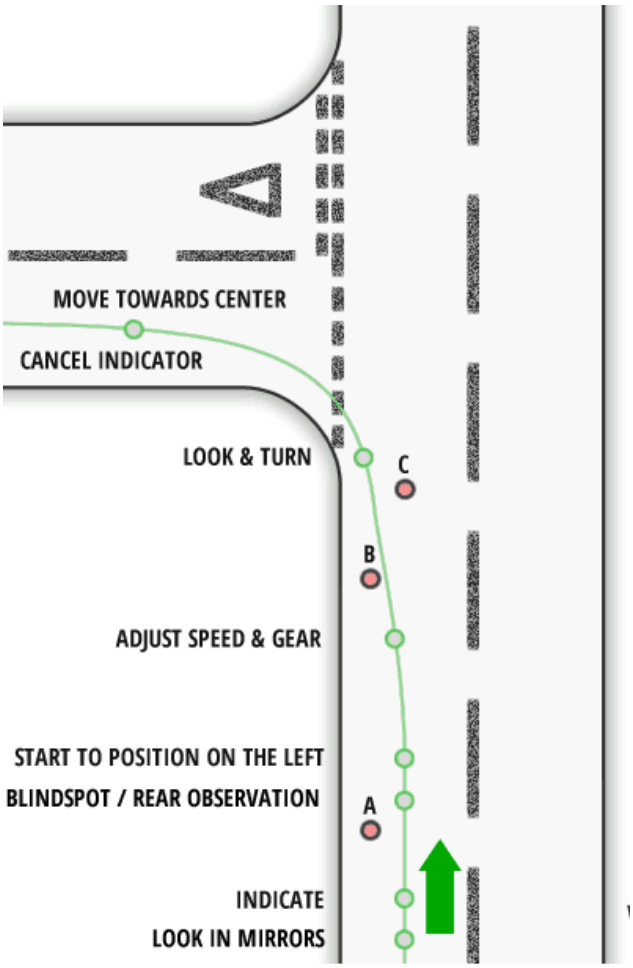
- Slow down;
- Select a lane position to increase their visibility to that driver;
- Cover the controls to reduce the time they need to react;
- As they enter the intersection, move away from the vehicle;
- Do not make radical movements, as drivers might think they are preparing to turn;
- Be prepared to take action.

Turning left from a major to a minor road

Riders should consider hazards such as:

- Cyclists or other motorcycles on their left undertaking or in their blind spot;
- Parked cars may affect their ability to position toward the left hand side of the road;
- Cars could brake suddenly and turn without indicating.

Procedure for major to minor road, turning left



As with all manoeuvres, perform the Hazard Drill (MSM-PSL) – for full details see the Defensive Driving module.

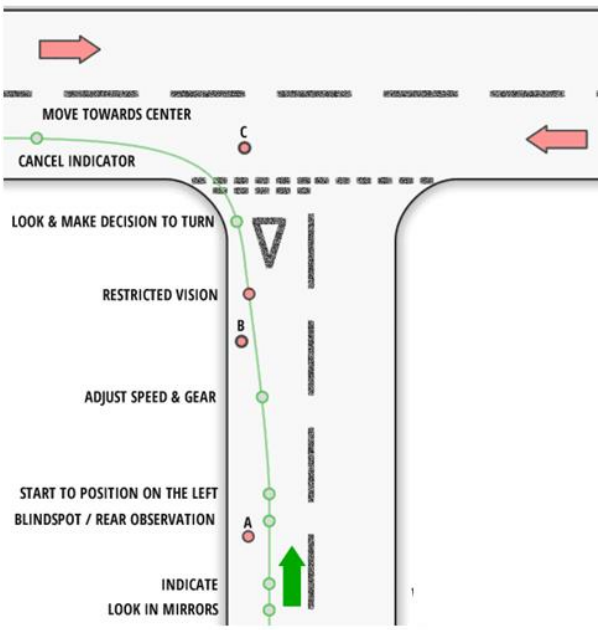
The rider should check the mirrors first, and indicate their intentions. Before they change their position, it is sensible to do a 'lifesaver' over the shoulder check to watch for cyclists or other motorcycles which may be undertaking. As they move towards the left they will probably need to reduce their speed and select a gear which will take them through the corner. As left hand turns are usually sharper than right hand turns they may need a lower gear. They should look through the corner as soon as they can see, decide to take the bend, and then start to move towards the centre of the road and then cancel their indicator.

Turning left from a minor to a major road

Main potential hazards

- Fast moving traffic approaching from the right on the major road
- Restricted vision approaching the junction

Procedure for minor to major road, turning left



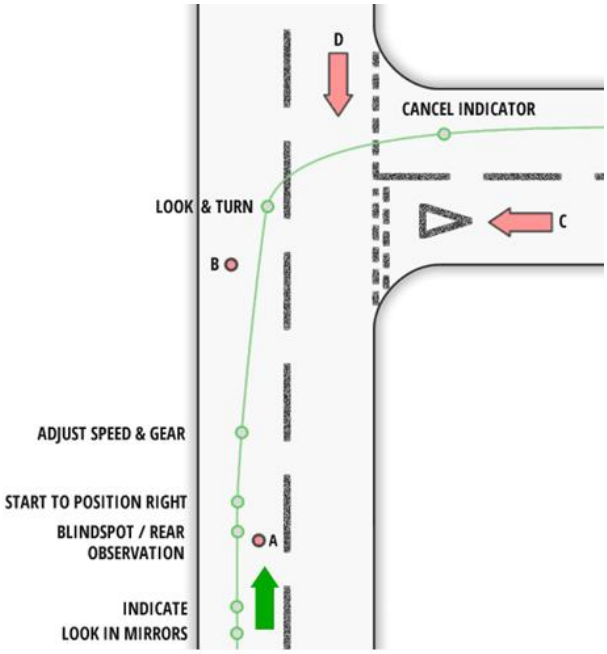
Follow the approach procedures of a left turn from a major to minor road, however when turning onto a major road, the chances of having to stop are greater due to fast moving traffic which does not need to give way to vehicles entering the road. Because of this, The rider will need to look at the speed and distance of approaching traffic and make a judgment about whether they need to stop or whether they can continue without having to put a foot down. If their vision is restricted it is sensible to stop until they are confident of a safe turn. If there is a stop sign, they must stop.

Turning right from a major to a minor road

The main potential hazards to riders in this scenario is:

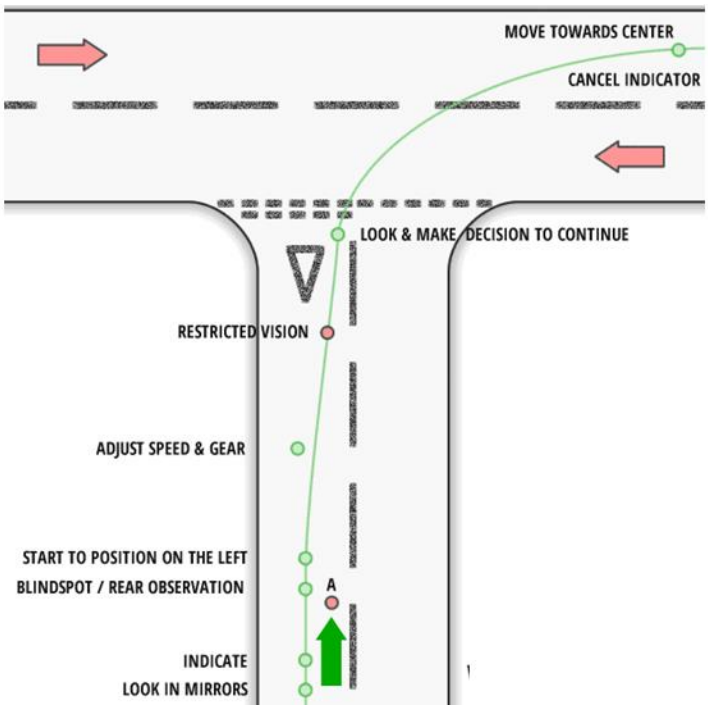
- Other vehicles attempting to overtake before the junction;
- Vehicles trying to sneak past them on the left as they wait to turn right;
- People emerging from the junction;
- Fast traffic approaching on the other side of the road

Procedure for major to minor road, turning right



When turning into a minor road on the right, the rider will need to cross the lane with potentially fast oncoming traffic and in addition they may be holding up impatient drivers behind them. Riders should follow the MSM-PSL procedure, use their mirrors, indicate to the right and perform a lifesaver over their right hand shoulder before moving over to the centre of the road. Be aware of oncoming traffic, traffic behind them and road users emerging from the junction. Stop if necessary until a break in the traffic, and turn right being careful not to cut the corner which may inconvenience cars waiting to emerge.

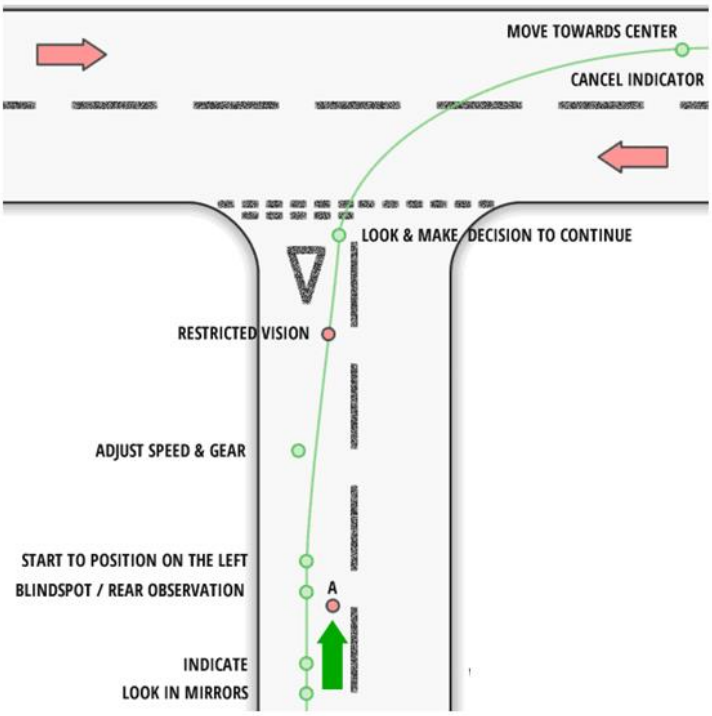
Turning right from a minor to a major road



The main potential hazards to riders here are:

- Other vehicles attempting to overtake before the junction;
- Vehicles trying to sneak past them on the left as they wait to turn right;
- People emerging from the junction;
- Fast traffic approaching on the other side of the road.

Procedure for major to minor road, turning right



As with the other junctions, use the MSM-PSL procedure. Look in the mirrors, indicate and perform a right shoulder life saver check before moving to the centre of the road. The rider might have restricted vision of traffic before they get close to the junction which means they may need to stop. If there is a stop sign they must stop. Look both ways and be careful of fast moving traffic. Emerge from the junction when safe, accelerate up to the speed of oncoming traffic and cancel their indicators.

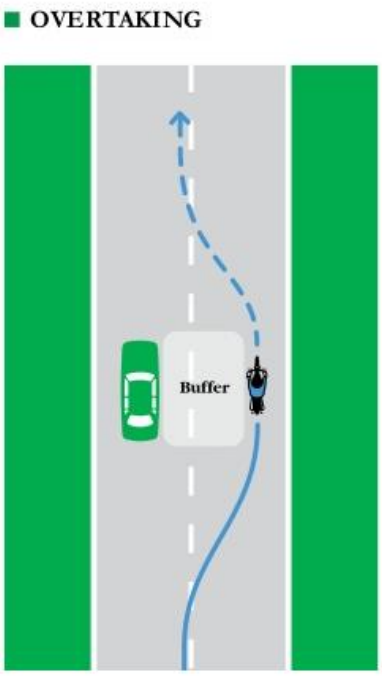
Overtake and be overtaken

Overtaking and being overtaken are dangerous, but there may be times when it is necessary to overtake a vehicle in order to continue to make good progress. Overtaking will normally take place on dual carriageways (or two lane roads) but is not restricted to this type of road.

If the rider chooses to overtake on a single carriageway, much more care is needed and they should never attempt to overtake anyone if they are not 100% confident that it is safe to do so.

Overtaking is fairly straight forward and is the same as the MSM-PSL procedure:

- First, find a safe gap to overtake;
- They should also identify the area they wish to return to their lane;
- Check their right hand mirror;
- If clear, signal their intention to move out (right hand indicator);
- Before moving out give a right hand lifesaver. At this point they should still have a two second gap (buffer) between them and the vehicle they wish to overtake;
- Move out to an overtaking position, accelerate and cancel their signal;
- Move past the vehicle they are overtaking and when they can see the front of the vehicle in their left mirror give a left hand lifesaver and move back to the normal riding position.



When overtaking, create a buffer from the vehicle you overtake


Before overtaking a slow vehicle check for side roads

Always remember that the rider can only plan for the distance that they can see to be clear.

Do not take chances.

Turning and balancing principles

Approach turns and curves with caution. Acquiring the skills necessary takes practice. New riders often have more difficulty negotiating turns and curves than more experienced riders. Limiting motorcycle speed will aid riders in successfully negotiating the turns and helps to prevent crossing into oncoming traffic, leaving the roadway, excessive braking, and skidding out of control.

It is recommended that riders use these four steps for better control:

- **Slow -** Reduce speed before the turn by closing the throttle and, if necessary, applying both brakes;
- **Look -** Look through the turn to where they want to go. Turn just their head, not their shoulders, and keep their eyes level with the horizon;
- **Lean -** To turn, the motorcycle must lean. To lean the motorcycle, press on the handgrip in the direction of the turn. Press left—lean left—go left. Press right—lean right—go right. Higher speeds and tighter turns require the motorcycle to lean more;
- **Roll -** Roll on the throttle through the turn. Maintain steady speed or accelerate gradually.

Avoid deceleration through the turn. In normal turns, the rider and the motorcycle should lean together at the same angle. In slow tight turns, lean only the motorcycle and keep the body upright.

Manage various road surfaces and conditions safely

A motorcycle is delicately balanced on two wheels. To stay upright, the two wheels must have good traction. Any surface that affects the motorcycle's traction will affect its balance. Any slippery surface increases the chance of a rider falling.

Dangerous surfaces include:

- Slippery surfaces – due to:
    - Liquids;
    - Sand/gravel;
    - Mud;
- Uneven surfaces;
- Grooves (ruts) and gratings;
- Sloping surfaces.

There are a number of precautions to take to operate safely on slippery surfaces:

Reduce speed

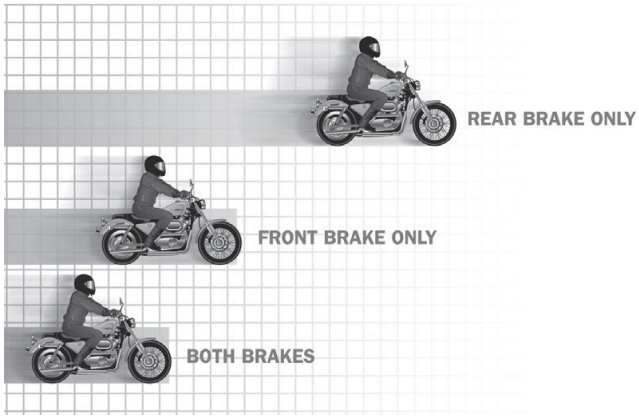
It takes longer to stop on slippery surfaces. Make up for this by travelling at a slower speed. It is particularly important to reduce speed on curves.

Remember, speed limits posted on curves apply to good surface conditions.

Use both brakes

The front brake is still more effective than the back brake – even on extremely slippery surfaces. Using both brakes together is even more effective.

Comparative stopping distances



Avoid sudden moves

Any sudden change in speed or direction can cause a skid on slippery surfaces. Therefore, turn, brake, accelerate and change gears as little and as gradually as possible. On a very slippery surface, such as on a patch of ice, do not make changes until after passing it.

Avoid slippery areas

It is important to find the best pavement. Riders should be aware that oil from vehicles tends to build up in the centre of the lane; particularly near junctions where vehicles slow down or stop. On wet pavements, therefore, it is better to operate in the grooves (ruts) created by the wheels of moving vehicles.

- Oil spots when stopping or parking can cause riders to fall.
- 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 making sharp turns at intersections or entering and leaving roads at high speed.
- Certain sections of the road dry faster after rain or melt faster after snow. Try at all times to stay in the best part of the lane.

It is almost impossible to maintain balance on wet slippery surfaces. Avoid them if possible.

Uneven Surfaces

Watch for uneven surfaces, such as bumps, broken pavement, potholes or railroad tracks, while riding. If the condition is bad enough, it could affect control of the motorcycle. Follow these guidelines to handle uneven surfaces:

- Slow down to reduce impact;
- Straighten out so that the motorcycle is upright;
- Rise slightly on the foot pegs to absorb the shock.

Crossing railroad tracks

Cross railroad tracks at an angle. When turning to cross the tracks head on, it may be more dangerous than crossing at a slight angle. Turn slightly to cross something running

parallel, such as trolley tracks, ruts in the middle of the road or a pavement seam. To cross something running next to the motorcycle, move away far enough to be able to cross it at an angle. Then, just make a quick sharp turn. Do not try to edge across it. It could catch the tires and upset balance.

Grooves and Gratings

When riding over rain grooves (ruts) or a metal bridge grating the motorcycle will tend to wander back and forth. While this may be uneasy, it is not generally dangerous. Therefore, the best thing to do is ride relaxed and avoid abrupt manoeuvres.

Sloping Surfaces

A road surface that slopes from one side to the other is not difficult to handle when riding straight ahead. However, in a curve, a slope can make the turn harder if it goes the wrong way. A turn to the left on a high crowned road is like a turn on a curve that is banked the wrong way. The crown makes the turn harder by:

- Cutting down on the clearance between the left foot peg and the surface;
- Adding the force of the down slope to the outward force of the turn, increasing the chance of a skid;
- Making it necessary to turn uphill.

The only way to handle the wrong-way banking is to slow down. This will straighten the motorcycle and reduce the outward force.

Starting on a hill

It is more difficult to start the motorcycle moving on an upgrade than on flat ground. There is always the danger for the rider of rolling backwards into a vehicle behind them.

Here are some important tips for the rider to remember when starting on a hill:

- Use the front brake to hold the motorcycle while they start the engine and shift into first gear;
- Change to the foot brake to hold the motorcycle while they operate the throttle with their right hand;
- Open the throttle a little bit for more power;
- Gradually ease out the clutch;
- Release the foot brake when the engine begins to slow down. This means the engine is taking hold;
- Continue to release the clutch gradually. If they release it too quickly, the front wheel may come off the ground, the engine may stop, or both.

ROUNDABOUTS

We use the same system to turn at a roundabout as we do for turning at junctions (MSM-PSL). There are a few things that the rider needs to consider when negotiating a roundabout.

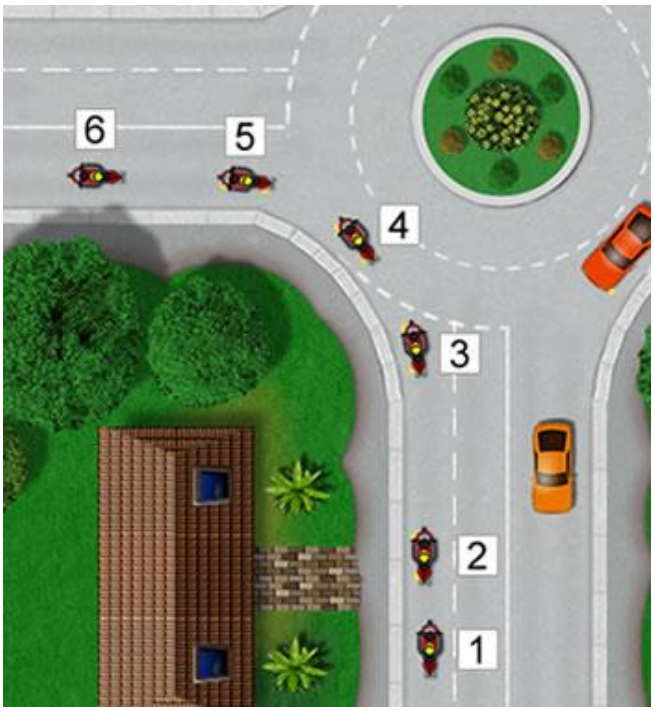
Firstly, when entering a roundabout, a rider normally gives way to traffic approaching from the right. Occasionally, traffic on the roundabout has to give way to traffic entering the roundabout, so look out for Give Way signs or traffic lights which determine priority.

The rider needs to imagine a roundabout as a clock face and they come to the roundabout from the 6 o'clock position. The first exit is generally described as the left turn. Every exit between the first and 12 o'clock is classed as straight on, and every exit after 12 o'clock is normally classed as a right turn.

Generally, if on approach to a roundabout there are two lanes, the left lane should be used to take the rider up to and including 12 o'clock, the right lane should be used to take them to all exits after 12 o'clock. There are exceptions to this rule, so the rider needs to look for road markings and traffic signs that tell them which lane to be in (any signs supersede the general rules).

Making a left turn

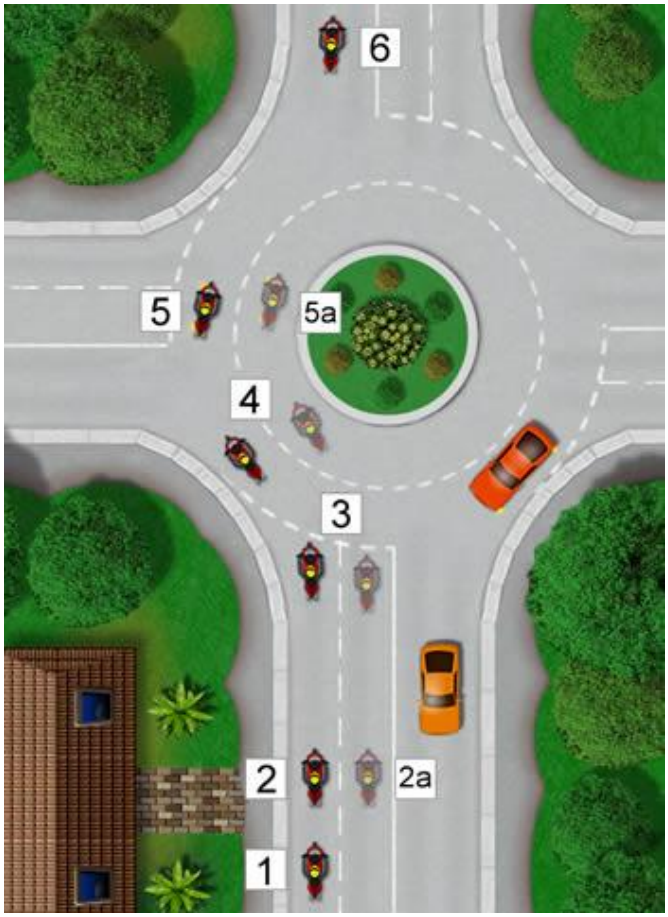
The rider should:



1. Apply the MSM-PSL routine. Ensuring they take effective rear observation.
2. Signal to the left, approach and keep to the left lane. As they approach the roundabout, use an appropriate speed based on what they can, or cannot see and how busy the situation is. Quickly and continuously alternate observations between their direction of travel and traffic that is on or approaching the roundabout to their right. As they approach, always check to ensure the exit is clear.
3. Continuously observe and prepare to stop if necessary. Avoid stopping if the roundabout is clear as this may result in a rear collision.
4. The rider should keep to the left lane and keep their signal on. Just before they enter the new road, take a look into the right-side blind spot (lifesaver) for other vehicles that may also be entering the lane.
5. They should take the new road and check in their rear mirrors so that they know the situation all-round.
6. Ensure their signals have cancelled or cancel them.

Going straight ahead

The rider should:



1. Apply the MSM-PSL routine. Ensure they take effective rear observation. Not signal on the approach to the roundabout.
2. Approach using the left lane unless signs or road markings tell them otherwise. Use an appropriate speed and alternate observations from where they are going to traffic on the roundabout.

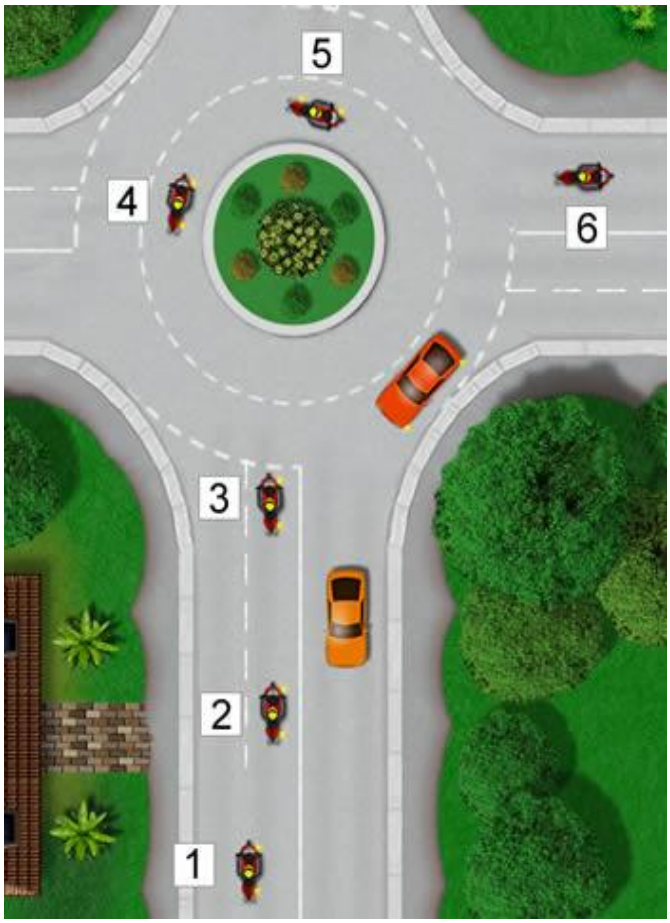
   2a. If the left lane is blocked (for example road works or a broken down vehicle), use the lane next to it. Use an appropriate speed and alternate observations (as covered in making a left turn). Check exit road is clear if possible.
3. Continuously observe, prepare to stop if necessary. Avoid stopping if clear.
4. Keep to the selected lane on the roundabout.
5. Signal to the left just as they pass the exit before the one they intend on taking and observe the right (offside) blind spot to ensure all is clear from other vehicle that may be merging alongside them.

   5a. Signal to the left just passed the exit before the one they intend on taking and observe the left (nearside) blind spot to ensure all is clear before crossing the lane.
6. Check to ensure their indicators have cancelled or cancel them.

Making a right turn

The rider should apply the MSM-PSL routine and if they are moving over into a lane, make a 'lifesaver' blind spot check before changing direction.

1. Signal to the right and then move into the right-hand lane;
2. As they head towards the roundabout, use appropriate speed based on traffic conditions and what they can see. Alternate observations between direction of travel, traffic on the roundabout and if possible, check their exit road to see if it is clear;
3. Prepare to stop if necessary, but avoid stopping if no traffic is approaching from the right;
4. Keep in their lane and maintain the signal on the roundabout;
5. Just as they pass the exit before the one they intend on taking, take a look over their left shoulder (nearside) and check all is clear. Signal to the left;
6. Enter the new road and ensure their signal has cancelled or cancel it.



When using the right lane either to go ahead at the roundabout or to take a right-turn, always check traffic in the left lane before crossing into it.

T-junctions

A T-junction is formed where a minor road ends to join a major road. T-junctions vary considerably by how they should be dealt with.

Road Markings

Where the minor road joins the major road, the minor road will have either:

- **Traffic lights** – Priority is dictated by the traffic lights. These are called 'controlled' junctions;
- **A 'stop' sign along with road markings** – Often located at hazardous junctions, the regulatory 'stop' sign orders motorists to stop at the line before proceeding into the major road. These are called 'marked' junctions;
- **A 'give way' sign along with road markings** – Prepare to give way to traffic on the major road. Also called 'marked' junctions;

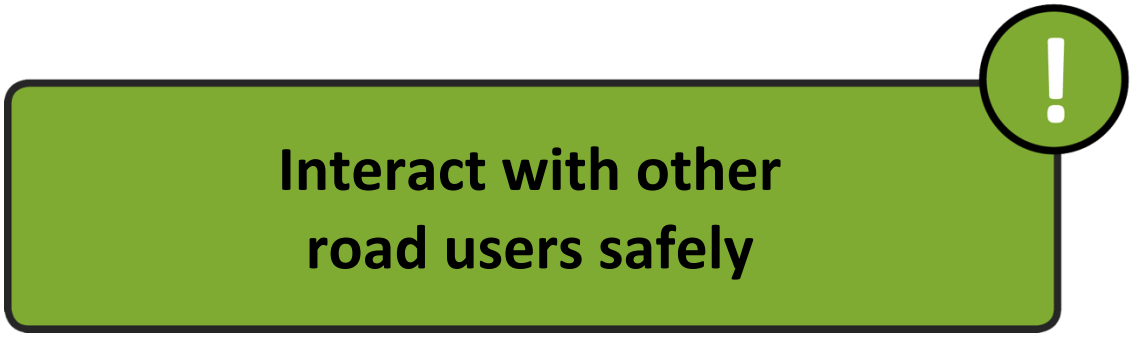
- **'Give way' road markings only** – At junctions that are not too busy, give way road markings may only be used. Also called 'marked' junctions;
- **No signs or road markings** – At quiet junctions typically located in residential or rural areas, often no signs or road markings are used. At unmarked junctions, no one has priority. It is essential the rider approaches with caution and prepare to stop. These are called 'unmarked' junctions.

On the Major Road

Statistically, most motorcycle crashes occur at or close to a junction. If the rider is riding on the major road, they should read the road well ahead and observe road signs and be cautious of vehicles emerging from side roads who may not have seen them. Avoid overtaking on the approach to junctions.

On the Minor Road

Look well ahead for give way or stop signs and junction road markings. In quieter areas, unmarked junctions may be difficult to see. On the approach to a junction, slow down in good time and be cautious of slippery surfaces and loose debris on the road surface.



Riders must understand that a motorcycle or three-wheeler will handle and perform very differently when loaded:

- Braking distance will increase;
- Acceleration will be limited depending on the amount of weight;
- Carrying a heavy cargo will raise the centre of gravity and so the vehicle will become more unstable and more at risk of overturning.

11.7. Defensive Riding

Theoretical and Practical module

On completion of this module, the trainee will be able to safely:

- Identify major road crash causation factors;
- Identify the consequences of road crashes;
- Recognise road hazards;
- Select the defence;
- Apply the Accident Prevention Formula;
- Put the Highway Code into practice and be sensitive to road crashes;
- Exercise patience and ride with care;
- Adapt their speed according to the road traffic condition;
- Reduce wear and tear and maintain a roadworthy motorcycle;
- Get a clear view of a junction;
- Apply proper signals before and during crossing a junction;
- Control the speed;
- Use the information gained by observation to form a riding plan;
- Signal their intention;
- Carry out safe manoeuvres;
- Apply appropriate behaviour while riding;
- Manage night riding and fatigue;
- Avoid distraction for safe riding.

Causes of road crashes and their consequences

In addition to loss of human life and personal suffering, road crashes can cause extensive damage to motorcycles which results in increasing repair costs and sometimes the cost of acquisition of new motorcycles to substitute for those damaged beyond repair.

Road crash causation factors

Using Tanzania as an example, according to the Crime and Traffic Incidents Statistics Report from the Tanzania Police Force for January to December 2016, the biggest cause of road crashes was human error. The report states that 81.1% of road crashes were attributed to driver error. In contrast, only 8.9% were due to vehicle defects and 10% were caused by environmental factors.

Human errors are results of:

a) Lack of proper road safety education such as:
   - Knowledge of safety rules and regulations;
   - Riding skills.

b) Inappropriate behaviour and attitudes, such as:
   - Non-compliance/violation with rules and regulations;

- Reckless riding;
- Failure to adjust to conditions, such as weather, fatigue, and drug/alcohol impairment;
- Distractions, like using a mobile phone when riding.

It is important that riders reduce these errors by undergoing proper training and adjusting to appropriate riding behaviour and attitudes. Defensive driving is a combination of proper riding knowledge, skills and appropriate behaviour. When riding defensively, the rider must be aware and ready for whatever happens; they are cautious, yet ready to take appropriate action and not put their fate in the hands of other road users.

In general, defensive riding is the prevention of road crashes in spite of incorrect action of other road users or adverse conditions. The following are a few attitudes that characterise a defensive rider:

- Always alert to what other road users are doing and is ready to take appropriate action to prevent a hazardous situation caused by other road users from turning into a crash;
- Never rides in a way that contributes to the creation of hazardous situations;
- Mentally prepared and ready for the journey;
- Stays focused, keeping both hands on the handlebars;
- Prepared to yield to other road users the right of way to avoid a crash;
- Always concentrates on the road and avoids all distractions;
- Controls his emotions and is not easily affected by other drivers who may exhibit bad riding/driving behaviour;
- Always sensitive to the special hazards presented by adverse driving conditions (abnormal, unusual or changing conditions in the weather, visibility, traffic situations, the mechanical operation of the vehicle, the road surface, physical fitness and state of mind) and adjust driving style accordingly.

Standard Crash Prevention Formula

The Standard Crash Prevention Formula incorporates three main components; hazard recognition, understanding various defences and acting appropriately on time.

Hazards recognition

A hazard is anything which is potentially dangerous or a possible source of danger that could lead to a crash or anything that may require the rider to have to change speed, position or direction. A hazard can be immediate and obvious (actual), such as a car approaching the rider on the wrong side of the road, or it may be less obvious (potential) but just as potentially dangerous, such as a blind bend which conceals a lorry reversing into the riders path.

Also, some hazards are fixed or permanent. Junctions, bends in the roads, traffic lights etc. are permanent fixtures and local knowledge can assist with planning for these hazards. Some hazards are temporary, such as parked cars, cyclists, road works, and no amount of local knowledge can prepare the rider for what is around a blind corner. Only by having a planned approach can the rider safely deal with these situations.

One of the main causes of crashes is the failure to recognise hazardous situations, if the rider fails to see the potential danger the rider cannot take actions to avoid it. On the roads the rider will meet three main types of hazard:

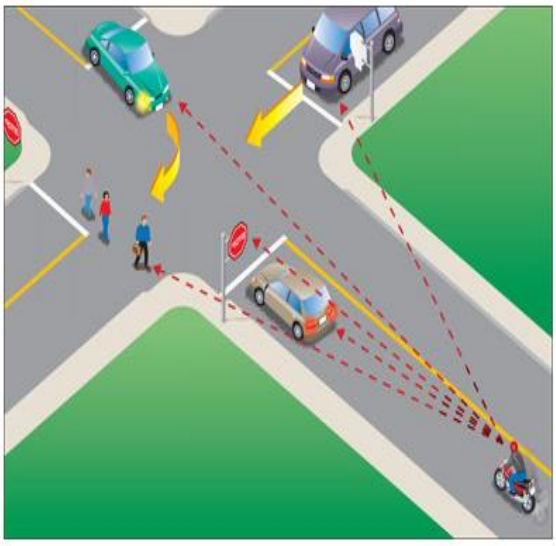
- The rider's own physical and mental condition (alcohol, drugs, medication, drowsiness, distraction, illness, strong emotions including fear/panic, depression, anger or rage and risk addiction);
- Risks arising from the position or movement of other road users;
- Adverse conditions:
    - Physical features such as junctions, roundabouts, bends or hill crests, blind spots etc.;
    - Problems arising from the road surface, weather conditions and visibility;
    - Problems arising from the vehicle's technical condition (defective brakes, wheel or tyres etc.)

Hazard recognition is the art of being able to pick out the important details to enable the rider to anticipate what is likely to happen next from all the information provided by their senses. A defensive rider must look for clues and build up a mental picture of what they think may happen next.

Expect the unexpected

Scanning for Hazards

The best way to avoid trouble is to see it coming. Defensive riders should have very few surprises on the road because they see and understand possible problems before getting to them. Scanning means taking in the whole scene 360 degrees around the vehicle. The rider should not stay focused on an object for more than 2 seconds otherwise they will miss looking at other things on the road.

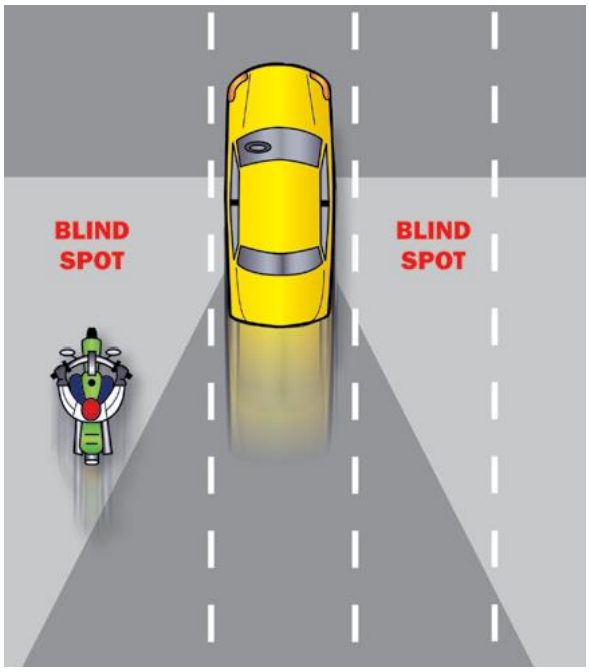


Learn to look far ahead when riding. In the city, look one-half to one full block ahead. On the highway, look as far ahead as can be seen. Looking well ahead gives the rider time to adjust to problems. It also helps them to avoid panic stops or sudden swerves that can cause even more trouble.

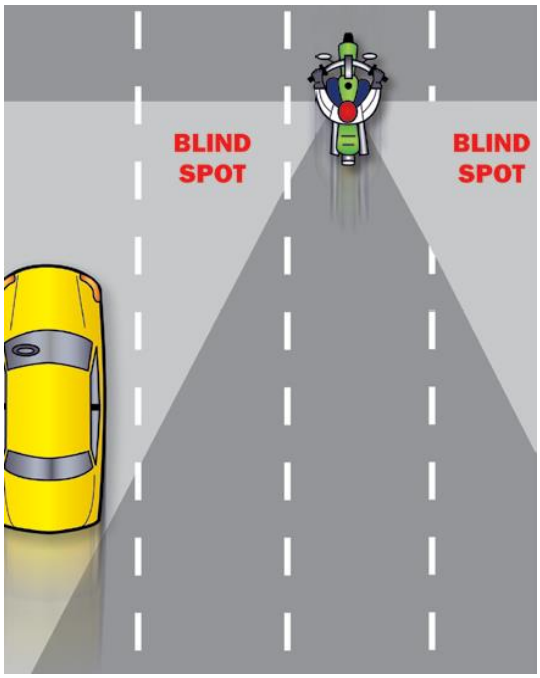
To scan effectively the rider needs to get a good view of what is going on right around them, this means that they see what is shaping up ahead and to the sides by keeping a safe distance from other vehicles, controlling their speed and listening for hazards.

They also need to use the mirrors to see what is behind them. However, their mirrors cannot cover all of the view behind. Motorcycles have 'blind spots' just like cars. Before they change lanes, they must turn their head, and look to the side for other vehicles.

Looking far ahead of where you are riding



Driver's Blind Spot



Rider's Blind Spot

Check the mirrors every five to seven seconds to keep track of traffic behind and beside and to the sides. The rider should have a good picture in their mind of what is around them, so someone passing them will not surprise them. The rider also needs to know, in order to stop quickly or swerve if necessary. It is especially important to check the mirrors in the following situations:

- Before they have to slow down or stop suddenly or when they are stopped at a junction;
- Before they make a turn;
- Before they change lanes;
- Before overtaking.

Predicting hazards

Predicting the action of other road users is important for the rider's own and others' safety. It is unsafe to assume that other road users have either seen the rider or will react correctly in any given situation. Observing someone's general progress and road behaviour will give the rider some idea of what sort of driver they are, but even the most conscientious drivers can make mistakes.

The more time the rider has to react to a hazard, the more likely they are to deal with it safely. They should start with what they have recognised and then use their general riding experience to predict how the situation is likely to unfold.

For example, the rider is riding into a blind curve (where they cannot see all the way around), yet they know from experience that hazards may be present in the unseen areas.

Carefully observing other drivers' eye, hand and head movements will give them a better idea of their intentions, but they should always give themselves a safety margin of extra time and space to allow for others' mistakes.

Identifying significant hazards and ordering them in levels of importance

Among the many recognised or predicted hazards that a rider identifies, they must decide which are significant, and which is the most important. Grade the risks, and deal with them in order of importance. The importance of a hazard may change rapidly, and they must be ready to change their priorities accordingly.

The intensity of danger associated with hazards varies with:

- The hazard itself;
- How close it is to the rider;
- Road layout and road surface conditions;
- Whether the hazard is stationary or moving;
- Direction;
- How fast they are approaching it.

The greater the element of danger, the higher the priority that the rider should give it

When the rider has ranked the observed and anticipated hazards in order of importance, they are in a position to decide on their course of action. The aim of their plan is to ensure the safety of themselves and other road users at all times. The appropriate course of action takes into account:

- What can be seen;
- What cannot be seen;
- What might reasonably be expected to happen;
- Which hazards represent the greatest threat;
- What to do if things turn out differently from expected (contingency plans).

Understanding the defence

Safe and effective riding depends on using the information gained during hazard recognition to plan riding actions.

Use the information gained to form a riding plan:

- Predict hazards;
- Prioritise hazards in order of importance;
- Decide what action to take.

The purpose of the plan is to put the rider in the right position, at the right speed, in the right gear, at the right time to negotiate hazards safely and efficiently. As soon as conditions change, a new riding plan is required. Effective planning is a continual process of forming and re-forming plans.

Acting on time

Once the rider has seen the hazard and they understand the defence against it, act! Never take a 'wait and see attitude'.

By planning their riding they should be able to make decisions in a methodical way at any moment and without hesitation. While they are riding they should be continuously scanning for hazards, predicting what will happen, ranking hazards in importance, deciding what to do and acting on time. At first they might find it difficult to consciously work through these three stages all the time, but with practice this will become second nature and prove a quick and reliable guide to action.

Hazard Drill

The Hazard Drill is an amplification of the Standard Crash Prevention Formula. It is a basic routine, or system of actions, that the rider will use each time they approach a hazard, such as turning left, right, emerge out of a road or are presented with a potential or actual hazard on the road (i.e. anything that may require them to change speed, position or direction) they will go through the following hazard drill one or more times. While each step of the drill needs to be considered in order, not all of the drill has to be applied i.e. when overtaking a parked car the rider may not need to signal. The basic routine for riding is: Mirrors-Signal-Manoeuvre, abbreviated to MSM.

The full routine, known as the Hazard Drill, has more abbreviations, which are MSMPSLADA:

- Mirrors
- Signal
- Manoeuvre
- Position
- Speed
- Look
- Assess
- Decide
- Act

Example of application of the Hazard Drill

Junctions

The greatest potential for conflict between the rider and other traffic is at junctions. A junction can be in the middle of an urban area or a rural area — anywhere traffic may cross their path of travel. Over one-half of motorcycle/car crashes are caused by drivers entering a rider's right-of-way. Cars that turn across in front of the rider, including cars turning left from the lane to the rider's right, and cars on side streets that pull into their lane, are the biggest dangers.

Use of the ***Hazard drill*** at junctions is critical.

As the rider sees a side road on the right or left that they want to turn into, they should follow this procedure:

Mirror(s)

- Use the side mirror (in the direction they are turning);
- Glance into their blind spots as appropriate.

Signal

- Give signals using indicators in good time, ensuring it's necessary and correctly timed;
- Using a signal helps warn other road users (including pedestrians) of their intention;
- Be careful not to give misleading signals.

Position

- When turning left be just over a drain's width (50 cm) from the kerb;
- When turning right be close to the centre line as is safe;
- Determine the best position/course to negotiate stationary hazards;
- Think before they change position, be careful not to mislead others.

Speed

- Adjust their speed so that they can negotiate the junction;
- Slow down to 15 km/h or even slower if it is a sharper corner or if they need to stop if it is too dangerous to carry on.

Gear

- Select the gear to match their speed and the power they need;
- Making sure that the gear is selected before the hazard is negotiated.

Look

- Look into the mirrors to ensure they know what is behind and beside them;
- Look into the new road and give way to oncoming vehicles.
- Also look into the road they are entering to scan for pedestrians, parked cars or vehicles coming towards them.

Assess

Assess the hazard. Although this step is at the final stages of the routine the rider should actually be looking and assessing the situation at all times.

Decide

Make a decision whether it is safe to move or not, stop if it is too dangerous to carry on and await a suitable opportunity to continue the manoeuvre.

Act

Once it is safe, complete the turn carefully, and make sure they turn into the proper lane.

Note, it is not always possible to carry out the routine in the exact order shown (for instance, when going downhill it may make more sense to adjust speed before giving a signal), but the mirrors should always be checked first.

11.8. Customer Care

Theoretical module

On completion of this module, the trainee will be able to:

- Define good customer care;
- Communicate effectively with customers;
- Meet the needs of customers;
- Support customers in using the rider's service;
- Act politely and appropriately;
- Ride considerately;
- Load and position passenger's cargo on a motorcycle safely.

THE RIDERS' PASSENGERS ARE THEIR CUSTOMERS

A customer can be described as an individual or business that purchases goods or services supplied by a business. The customer is often considered as the most important aspect of a business as they pay for the services provided.

For motorcycle riders the main customers will consist of individual passengers and freight owners requiring the movement of goods.

The Benefits of Good Customer Care

Good customer care can be described as meeting the needs and desires of any customer.

It is the act of taking care of the customer's needs by providing and delivering professional, helpful, high quality service and assistance before, during, and after the customer's requirements are met.

PROMPTNESS: Delivery of the requested service must be on time. Delays and cancellations of services should be avoided.

POLITENESS: Saying 'hello,' 'good afternoon,' 'sir/madam', and 'thank you very much' are a part of good customer service. The use of good manners is appropriate at all times.

PROFESSIONALISM: All customers should be treated professionally. Professionalism shows the customer they're cared for.

Providing good customer care is vital, if a customer is treated well it increases the likelihood that they will use the service again. It can also have added effects that individuals who have had positive experiences are more likely to recommend the service to others and increase the demand for the service.

Other benefits of good customer care include:

- Continual business success
- Increased profits
- Job satisfaction
- High overall organisational morale
- Positive team working
- Organisational growth

First Impressions

There is a famous saying that you never get a second chance for a first impression. In business it is important the first impression that the customer has is positive, if they have a negative first impression they will probably look at alternative providers for the service the rider is offering.

Some ways to provide a positive first impression are:

- Personal Appearance
- Professionalism
- Punctuality (reliability)
- Positive Body Language (Smile, Eye Contact – where culturally appropriate)
- Positive and Polite Attitude
- Good Manners
- Attentiveness and Good Active Listening Skills
- Knowledge of the service provided;
- Passionate about the job and the service provided
- Firm Handshake (if appropriate).

If a negative first impression is provided it could be very difficult to regain the custom in the future.

Cultural Differences: Different cultures have different expectations of what is considered polite and appropriate.

The rider must consider this in all actions they take with customers, particularly those of the opposite sex.

Clear Communication

When communicating with a customer the seven C's should be used to ensure that the rider is successful with the message they want to convey to the customer.

BE CLEAR: Information should be communicated in a simple way, where the meaning is key message is strong and understandable. The rider should ensure that the purpose of their communication is clearly identifiable. Where possible the communication should take place in the preferred language of the customer.

BE CONCISE: Do not use unnecessary long words or sentences if the context of the communication can be achieved in a much simpler form.

BE CONSISTENT: Ensure that the information provided is reliably accurate based on facts, this will build trust and demonstrate good knowledge of the specific subject.

BE CORRECT: Speak the truth and the customer will respect the credibility of the information that the rider has to offer. Providing correct information helps to boost credibility and builds trust with the customer.

BE COHERENT: The information should be communicated in a logical and understandable manner. Where possible the communication should take place in the preferred language of the customer.

BE CONFIDENT: The rider should be confident of the information that they are communicating, rely on the facts. If they demonstrate confidence the customer will be more likely to have the same confidence in them.

BE COURTEOUS/COMPASSIONATE: Use positive language and always remember to be polite and focused on using the best manners. Understand the needs of the customer and emphasise where possible.

When a message is clearly, accurately and politely communicated to a customer they will feel valued and it will increase the possibility of them using the service again in the future.

Meeting Additional Customer Needs

When transporting passengers specific groups of people may require additional assistance to ensure they receive an appropriate level of service, these passengers include:

- Elderly passengers;
- Passengers with physical disabilities;
- Passengers with communication problems;
- Passengers with hearing impairments;
- Passenger with visual impairments;
- Passengers carrying large items / lots of luggage.

The groups of people above may require additional assistance compared to the average passenger it is important to ensure that patience and consideration is demonstrated when needed. It may also be applicable for the rider to perform some of the following:

- Assistance to board the vehicle;
- Assistance to carry luggage / big items;
- Adaptation of communication style to ensure the passenger understands
    - Speak slow and clear, increase the volume of their voice if needed
    - Use appropriate language.

Additionally; patience and consideration when moving off and stopping when carrying any of the listed groups of passengers may be needed to ensure that they have a pleasant journey.

Furthermore, when encountering passengers who have any cultural or gender specific needs, take into consideration any adaptations that may be needed from the usual service offered.

Customer Engagement

Customer engagement is an important aspect of customer care, it ensures that they customer feels valued and has a positive experience throughout the service that is being provided.

The actions outlined below can change customer perceptions and ultimately affect the success of the efforts that are made, the rider should adhere to the following guidance when in contact with customers:

SMILING: Positive facial expressions can set the tone of a customer conversation, it can lead to the interaction being more relaxed and pleasant.

EYE CONTACT: Directly address customers when appropriate. (Cultural customs may prevent this from being applicable in all situations).

HAND SHAKE: When appropriate.

APPEARANCE: Personal appearance is important. Things such as personal hygiene, appropriate, clean clothing and a professional manner will provide respect from the start of a customer interaction.

POSTURE: The rider's pose or posture should express attention, friendliness, and openness. Lean forward, face the customer and nod to let them know they are interested.

ATTENTIVENESS: Always be attentive to the customer, actively listen to them when they speak – this may include indications such as head nodding to ensure them that the rider is listening and paying attention to any needs that they may have.

TONE OF VOICE: Always convey friendliness and amicability. Do not raise their voice in frustration or anger no matter how difficult or tiresome a customer may behave.

PERSONAL SPACE: Leave adequate distance between them and their customer. Adequate space is important to making customers feel secure and unthreatened.

OBSERVATION: Observe the reactions of the customers in different scenarios and evaluate how to positively influence situation to provide the best customer care.

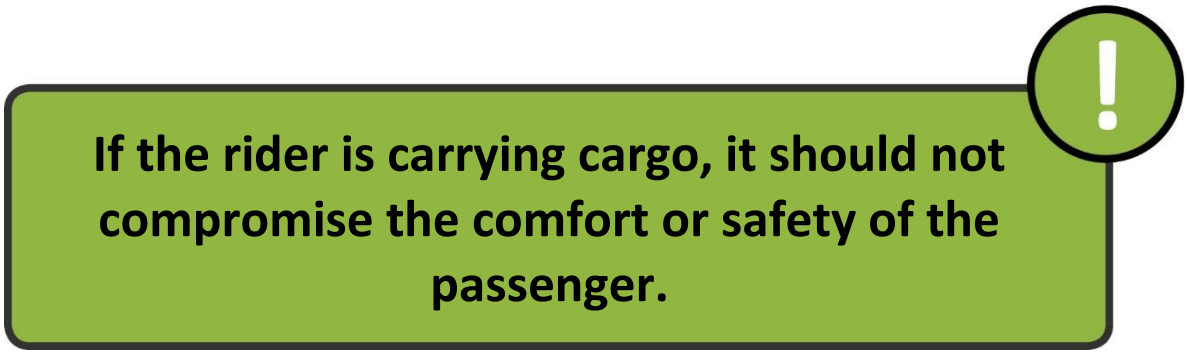
Appropriate Riding

To provide good customer care the service that is delivered needs to be provided at a high level. To ensure that the service is appropriate the following factors should be considered:

SPEED: What speed is appropriate for the journey that is being undertaken and is the passenger happy with travelling at this speed?

SAFE & COMFORTABLE: Is the rider being safety conscious and is the passenger comfortable?

ADDITIONAL NEEDS: Have all of the needs of passengers been taken into consideration e.g. if the passenger is elderly or has a disability?



11.9. HIV & AIDS Awareness

Theoretical module

On completion of this module, the trainee will be able to:

- Identify what is HIV;
- Identify the link between HIV and AIDS;
- Identify how to know if they have HIV;
- Identify how HIV is transmitted;
- Identify how HIV is treated;
- Identify how to act safely and responsibly when living with HIV.

Information in this module is provided courtesy of NAM Publications. Further information can be found at their website www.aidsmap.com

Readers should be advised that national protocols on HIV & AIDS can be updated at any time.

HIV and mobile workers

Mobile workers such as motorcycle taxi riders, truck drivers, the military and police are at a higher risk of contracting a sexually transmitted infection (STI). High HIV/AIDS prevalence rates amongst mobile workers in Sub-Saharan African has been well documented and deliberate, targeted strategies have been used to reverse this trend. It is now good practice for vocational training courses to mainstream modules on HIV/AIDS awareness, prevention and lifestyle so that new drivers or riders are taught key messages at the start of their professional careers.

What is HIV?

HIV stands for **h**uman **i**mmunodeficiency **v**irus.

This particular virus was identified in the 1980s and belongs to a group of viruses called 'retroviruses'.

HIV attacks the immune system, and gradually causes damage. This can mean that, without treatment and care, a person with HIV is at risk of developing serious infections and cancers that a healthy immune system would fight off.

Current treatment for HIV works by reducing the amount of HIV in the body so the immune system can work normally. This doesn't get rid of HIV completely, but with the right treatment and care, someone with HIV can expect to live a long and healthy life.

HIV is present in blood, genital fluids (semen, vaginal fluids and moisture in the rectum) and breast milk.

Can HIV be cured?

There has been, and continues to be, lots of research into possible cures.

Current treatment means that many people with HIV are living long and healthy lives, but it does not cure HIV.

What is the link between HIV and AIDS?

AIDS stands for **A**cquired **I**mmune **D**eficiency **S**yndrome.

AIDS is the name used to describe a combination of potentially life-threatening infections and cancers, which can develop when someone's immune system has been damaged by HIV.

You cannot catch AIDS and there is no AIDS test. HIV causes AIDS and it is HIV that can be passed on.

Being diagnosed with AIDS means different things for different people. Just because someone has AIDS does not mean they will die – but it is important to have medical care and treatment.

Treatment with combinations of anti-HIV drugs can keep the immune system strong, and because of this the number of people who are diagnosed with AIDS has fallen. Thanks to effective HIV treatment, many people who developed AIDS are now very well and can look forward to a long and healthy life.

How do I know if I have HIV?

Having an HIV test is the only way to know for sure whether you have HIV.

If you have HIV, it's very important that it's diagnosed. This will give you the best chance of getting the treatment and care you need to stay well.

Usually, when you go for an HIV test, you will have an opportunity to talk to someone first, so you can ask any questions you might have. The person doing the test will explain how the test works and how you will get the results.

Then, depending on the type of test, you have a small sample of blood taken from your arm, or a drop of blood taken from your finger. Some tests are performed using fluid from around your gums.

If the test says you are HIV positive, this means you have HIV. If the test says you are HIV negative, this means you do not have HIV. With some tests, you will need to have a follow-up test if you have a positive result.

In many countries HIV testing is free and confidential.

What is the life expectancy of someone with HIV?

With modern HIV treatment, many people with HIV are living long and healthy lives. In fact, doctors are hopeful that many people with HIV will live as long as their HIV-negative peers.

A lot of effort is going into making effective HIV treatment available to everyone who needs it. However, this is not always possible in some parts of the world. Without treatment, people with HIV will almost always eventually become ill, and their lives may be shortened.

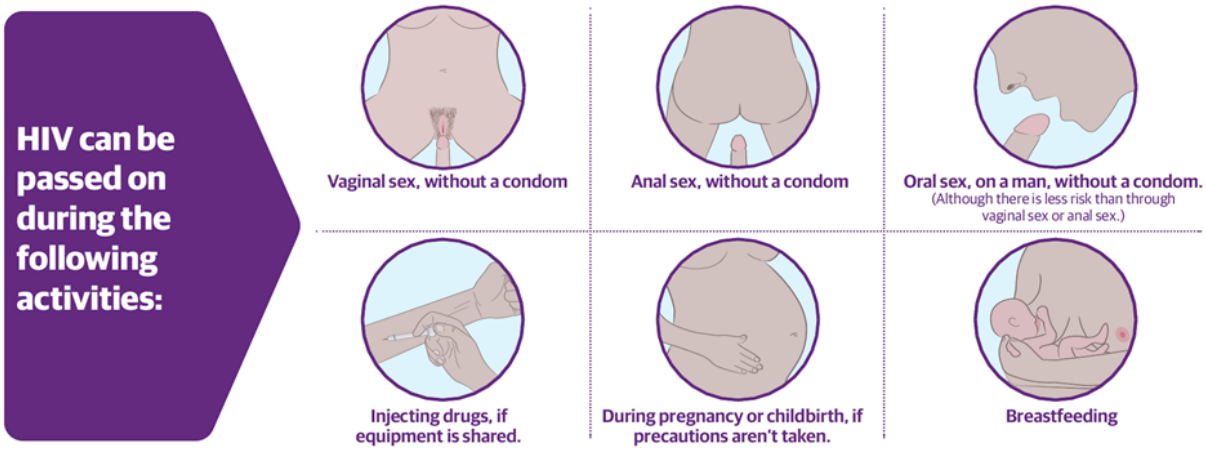
Your best chance of staying well is to start treatment before HIV has done too much damage to your immune system. To do this you need to know you have HIV. Many of the people who die from HIV-related illnesses in countries where treatment is easily available were diagnosed very late, often not until they were already very ill.

How is HIV transmitted?

HIV is found in body fluids. It has been found to be present in infectious quantities in genital fluids (vaginal fluids, semen and moisture in the rectum), blood and breast milk.

The main ways in which HIV is passed on are:

- Through unprotected anal, vaginal and oral sex,
- By sharing injecting equipment, and
- From a mother to her baby during pregnancy, birth or breastfeeding.



Condoms provide excellent protection against HIV transmission during sex.

If you inject drugs, you can reduce the risk of HIV and other infections by not sharing needles or other injecting equipment.

With the right treatment and care during pregnancy and birth, and by not breastfeeding, it's nearly always possible to prevent mother-to-child transmission of HIV.

Effective HIV treatment, which reduces viral load, has been shown to reduce the risk of transmission. When someone is taking HIV treatment and has an undetectable viral load, the risk of sexual transmission of HIV is negligible.

What can I do that is safe?

HIV is not passed on by kissing, hugging, massage or mutual masturbation.

Condoms provide excellent protection against HIV and other sexually transmitted infections when used properly for anal, vaginal or oral sex.

The risk of HIV transmission from oral sex is much lower than for anal or vaginal sex. Some people choose to use condoms or dental dams for oral sex to reduce this risk even further.

Effective HIV treatment, which reduces viral load, has been shown to reduce the risk of transmission. When someone is taking HIV treatment and has an undetectable viral load, the risk of sexual transmission of HIV is negligible.

If you inject drugs, you can reduce the risk of HIV and other infections by not sharing needles or other injecting equipment.

Condoms provide excellent protection against HIV and other sexually transmitted infections when used properly for anal, vaginal or oral sex.

I'm starting a relationship with someone who has HIV, what do I need to know?

Many people who don't have HIV are in successful, loving, and intimate relationships with a partner who has HIV. This is sometimes referred to as a 'serodiscordant' relationship.

Modern HIV treatment and care can significantly improve your partner's health and life expectancy. Many people with HIV can expect to have a near-normal lifespan.

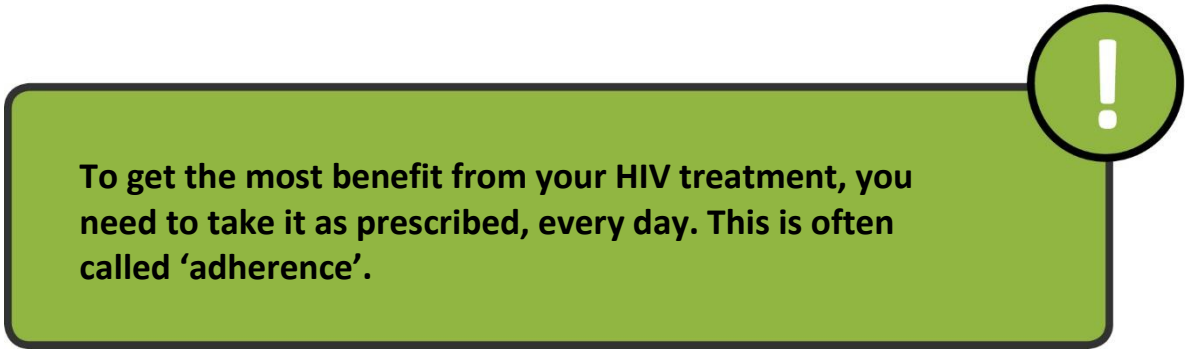
It may be reassuring to know that you can have a long-term relationship and a fulfilling sex life with your partner, and stay HIV negative. It's completely safe to kiss and hug your partner. Using condoms is a very effective way of preventing HIV transmission during sex. If your partner is taking HIV treatment and has an undetectable viral load, this also reduces the risk of transmission to a negligible level.

If you have questions about transmission, or other aspects of being in a relationship with someone who has HIV, such as having a family, or their life expectancy, you could think about making an appointment with your partner, or on your own, to see someone at your partner's HIV clinic. Alternatively, you could talk to someone at a local HIV organisation. You can find contact details of over 900 organisations in 189 countries at www.aidsmap.com/e-atlas.

How is HIV treated?

Treatment for HIV involves taking a combination of anti-HIV (antiretroviral) drugs. This treatment has a very powerful anti-HIV effect and stops the virus from reproducing.

This allows the immune system to strengthen and fight infections effectively.



What does HIV treatment involve?

HIV treatment involves taking anti-HIV drugs every day. These drugs do not cure HIV, but they can stop HIV from reproducing. This allows the immune system to stay strong.

There are now more than 20 of these drugs, although they are not all available everywhere in the world. HIV is normally treated with a combination of three different drugs, some of which might be combined into one pill. Most HIV treatment combinations are taken once or twice daily. This treatment has a very powerful anti-HIV effect. Thanks to HIV treatment, many people with the virus can live a long and healthy life.

Important points

- HIV can only be passed on when one person's body fluids get inside another person.
- The only body fluids which contain enough HIV for the infection to be passed on are semen, fluids from the vagina, moisture in the rectum, blood and breast milk.
- Condoms and HIV treatment both lower the risk of transmission.

If you are prescribed HIV treatment, you should aim to take all the doses. Missing just a few doses a month can mean that your treatment doesn't work properly, and your HIV may become resistant to the drugs that you are taking.

Anti-HIV drugs can interact with some other prescribed drugs, medications you can buy from a pharmacy, herbal remedies and illegal or recreational drugs. To reduce the risk of interactions, it's important to tell your HIV doctor or pharmacist about any other medicines or drugs you are taking.

You should be monitored regularly to see if your treatment is working. If you do encounter a problem with your treatment, it should be possible to do something about it.

What can I do to help myself?

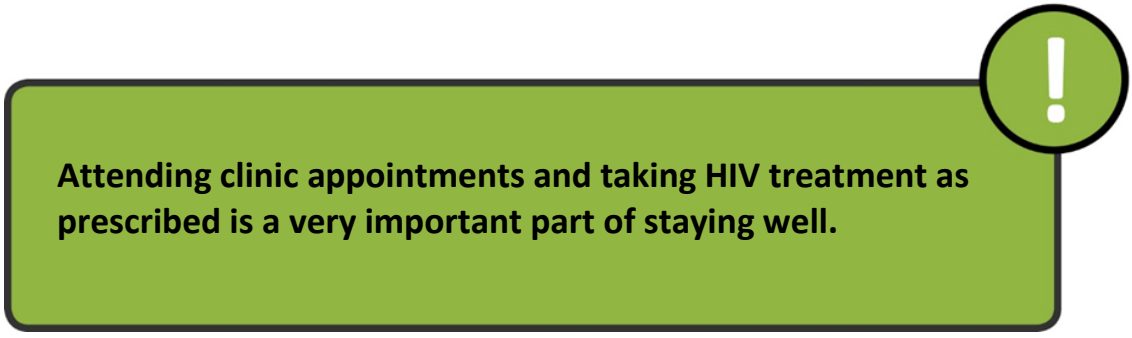
There's a lot you can do to look after your physical and mental health and general wellbeing.

Leading a healthy lifestyle is a good start. This includes getting enough sleep, eating a healthy diet, exercising, not smoking, only drinking sensible amounts of alcohol, and avoiding or moderating drug use.

Attending your clinic appointments and taking your HIV treatment as prescribed is a very important part of staying well.

It's also important to look after your mental health and emotional wellbeing. Depression and anxiety are common issues, and acknowledging how you feel and finding support to deal with concerns or mental health issues should not be overlooked.

Living with HIV can be hard at times, and most people need the help of others from time to time. Don't be frightened or embarrassed to ask for help.



Using anti-HIV drugs to prevent HIV

Undetectable viral load and infectiousness

The goal of HIV treatment is an undetectable viral load. An undetectable viral load means that your blood has a level of HIV below the level which can be measured by viral load tests. This does not mean that you have been cured of HIV, but that the combination of drugs you are taking has reduced HIV's ability to reproduce so much that it can only be detected in very low levels in your blood.

HIV treatment also lowers the amount of virus in other body fluids, including semen and vaginal fluids.

Large research studies in recent years have shown that the risk of HIV transmission is greatly reduced when people are taking HIV treatment and have an undetectable viral load. (This is sometimes referred to as HIV 'treatment as prevention', or TasP.) Doctors now advise that, in the right circumstances, taking HIV treatment is as effective in preventing HIV as when condoms are used properly.

These circumstances are that:

- Neither you nor your partner has any sexually transmitted infections (you would both need to have sexual health check-ups)
- You have had an undetectable viral load for more than six months and you take your HIV treatment as advised by your healthcare team
- You have your viral load tested regularly.
- If this is the case for you and your partner, being on HIV treatment may be an effective way of preventing HIV transmission.

If you and your partner want to stop using condoms, it is important to discuss the level of safety you are both comfortable with before you stop using condoms. You may need to explain or discuss what an undetectable viral load means with HIV-negative partners. You may both need some time to understand the situation clearly before you come to a decision.

It is worth remembering that HIV treatment does not reduce the risk of the transmission of other sexually transmitted infections (STIs). Condoms remain the most effective way to prevent most other STIs.

When you first meet a new partner, it's usually impossible to know whether the other person has an STI or not (there may be no symptoms). The only reliable way to know whether or not you or your partner has an STI is for both of you to have a comprehensive sexual health check-up. If either of you has had sex with a third person since the check-up, it needs to be repeated.

If you are not yet taking HIV treatment for your own health, but you decide you would like to start treatment to reduce the risk of passing on HIV to partners, talk to your HIV doctor. They should respect this decision and prescribe HIV treatment. If they question your need for treatment, explain that you wish to protect partners from your HIV.

You can find out more about HIV treatment as prevention on NAM's website, including the research studies showing its effectiveness and more detailed advice to help you make any decisions.

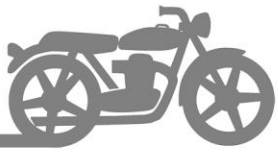
PEP

If someone has been exposed to HIV during sex, they can take a short course of anti-HIV drugs to try to prevent infection. This is called post-exposure prophylaxis, or PEP for short. This course of drugs can be prescribed by sexual health, genitourinary medicine (GUM) and HIV clinics, or hospital accident and emergency departments out of hours, if there has been significant risk. There needs to be a significant risk of HIV infection. Whether or not the risk is 'significant' will depend on the type of sex you have had, and other circumstances. It is important to get and take PEP as soon as possible after potential exposure to HIV – ideally within 24 hours, and certainly within 72 hours. PEP isn't 100% effective. However, there have been very few reports of HIV infection after the use of PEP. PEP is considered to be an emergency treatment. It should be free of charge regardless of immigration status.

If you are taking HIV treatment and have sex without a condom with a person who is HIV negative or whose HIV status you do not know, or if there is a condom accident during sex, you may be tempted to offer them some of your anti-HIV drugs in an attempt to reduce the risk of them acquiring HIV. This is not a good idea.

The thought that you may have exposed somebody to the risk of HIV infection may be worrying. If you do think that PEP might be appropriate, encourage them to go to their local sexual health clinic as soon as possible. If it is closed, they should go to the accident and emergency department of their local hospital and ask for PEP. Staff there should contact the on-call HIV doctor.

You can read more about PEP on NAM's website.



PrEP

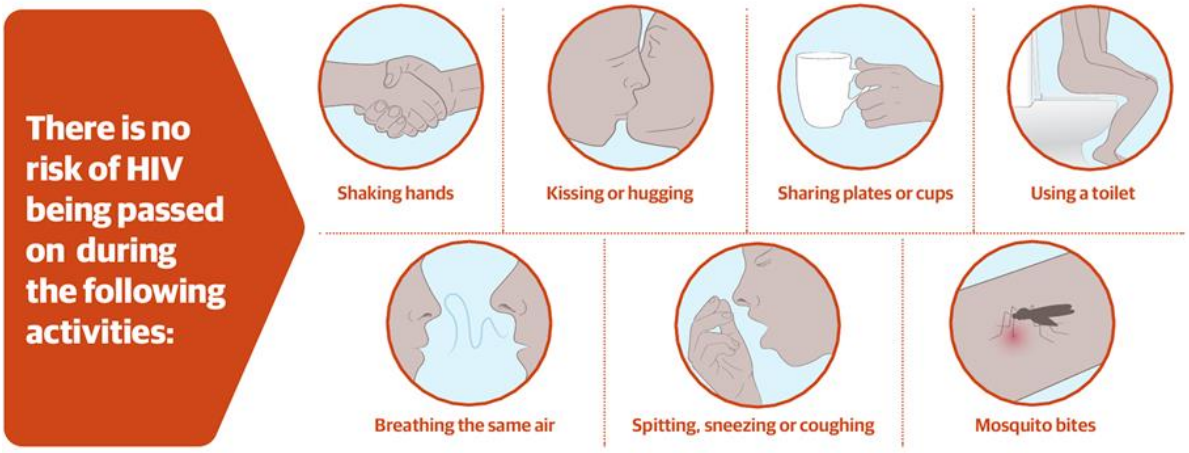
Pre-exposure prophylaxis (PrEP) is another way of preventing HIV infection. HIV-negative people can take some doses of anti-HIV drugs when they are at risk of exposure to HIV. Recent research has shown this is very effective in lowering the risk of infection, as long as the drugs are taken regularly and exactly as prescribed. Evidence of PrEP's effectiveness is particularly strong for men who have sex with men.

However, PrEP does not protect people from other sexually transmitted infections or pregnancy.

The anti-HIV drug currently used as PrEP is Truvada, a pill containing two drugs, tenofovir and emtricitabine. Truvada was chosen because these two drugs have few side-effects and are less likely to cause problems with drug resistance if you have already become infected with HIV by the time you start taking PrEP, or if it fails to prevent infection.

Although there are other effective ways of preventing HIV transmission, PrEP may provide a useful option for some people, at some points in their life. For example, studies have shown that it can be a good prevention method for gay men at times when their sexual activity puts them at high risk of HIV, rather than being a long-term option.

PrEP has been shown to be highly effective at preventing HIV in people at high risk (such as men who have sex without a condom with other men). The availability of PrEP is currently being debated by many Governments. Some clinics are offering PrEP with a private prescription. Talk to staff at a sexual health clinic if you think PrEP would be a good option for you.



11.10. Crash Management and First Aid

Theoretical module

On completion of this module, the trainee will be able to:

- Identify actions to take in the event of a crash;
- Interact appropriately with the authorities and other parties involved in the crash;
- Perform basic First Aid;
- Identify the risks of and steps to avoid cross infection of HIV/AIDS.

The following are examples of incidents that riders may encounter:

Crashes

Human error is consistently found to be the most common cause of crashes. When a crash occurs those involved may be distressed, confused or angry. This turmoil may create additional danger and may lead to further crashes.

Professional riders spend much more time on the road than normal motorists and are thus more likely to come upon the scene of, or be involved in, a crash.

The rider should be prepared and able to provide help. Being calm and able to offer the appropriate assistance could save a life, or at least minimise the danger and inconvenience to those directly involved and other road users.

The rider should know and understand the correct crash procedures. The essential procedures to be followed by a rider in any crash are:

- Stop immediately and turn off the engine;
- Switch on their hazard warning lights;
- Provide urgent assistance to the injured;
- Place warning devices (if available) at appropriate locations to prevent another crash;
- Seek medical help (use a mobile phone, ask passing motorists, or ask nearby residents);
- Continue to assist the injured until help comes and if required after emergency services arrive;
- Take details of the crash including:
    - Names and addresses of any drivers, passengers, pedestrians, etc.;
    - Names and addresses of any witnesses;
    - Driving licence information and the registration numbers of other drivers and vehicles involved;
    - Any information which could help identify the owner of those vehicles names and identification numbers of police at the scene or to whom the crash has been reported;
    - Time, place, weather conditions, speeds, damage etc.

The rider should also be prepared to give the other drivers or riders similar information about their own vehicle and driving licence.

Remember:

- If the police do not attend, the rider should report the crash to them as soon as practicable and in any case, within 24 hours;
- The rider should report the crash to their employer (if applicable) and their insurance company;
- Report all crashes to the police that involve injury and damage to street furniture, road infrastructure (e.g. bridge barrier), public utilities (e.g. power poles), other vehicles etc.;
- Insurance should pay for the damage caused.

Remember motorcycles taxi riders are on the road far more than most other drivers and as a result are likely to witness or be involved in more crashes. The rider's assistance could save lives.

As a professional rider, riders are bound to face an emergency at some stage in their riding career. This could be a problem with a heavy load shifting, skidding, brake failure, tyre failure or even a fire.

They can drastically reduce the likelihood of such emergencies by:

- Riding defensively so that they are always in control of their vehicle;
- Making certain, before every journey, that their vehicle is well maintained and in a safe condition;
- Knowing what freight they are carrying and what to do with it if there is a problem (for instance if it is flammable or toxic).

Even if the rider take precautions, they may still be required to deal with any of the following situations during their riding:

- Skidding;
- Tyre failure;
- Tyre wobble;
- Brake failure;
- Brake failure on hills;
- Missed gear shift;
- Leaving the road.

Skidding

The rider should slow down before they get to a slippery surface to lessen the risk of skidding. Making sure to avoid any sudden changes in speed or direction and keep the motorcycle upright while proceeding as slowly as possible.

Brake Failure

On motorcycles, the rear brake system is completely separate from the front brake system. Even if the motorcycle has linked brakes, the systems are completely separate. Therefore, the chances that both of the completely separate braking systems on the motorcycles, will fail at the same time are almost zero. Therefore, if the front brakes fail, use the rear brakes to stop. If the rear brake fails, use the front brakes to stop.

If, by chance, the riser neglects maintenance to the point that both of the braking systems fail, then roll off the throttle and downshift as much as possible to reduce speed.

Tyre Failure

If either tyre goes flat while riding, the rider should:

- **Hold handgrips** firmly, ease off the throttle, and keep a straight course;
- **If braking is required,** gradually apply the brake of the tyre that is not flat, if they are sure which one it is;
- **When the motorcycle slows**, edge to the side of the road, squeeze the clutch and stop.

Tyre Wobble

Trying to accelerate out of a wobble will only make the motorcycle more unstable. Instead the rider should:

- Grip the handlebars firmly, but do not fight the wobble;
- Close the throttle gradually to slow down. Do not apply the brakes; braking could make the wobble worse;
- Move their weight as far forward and downward as possible;
- Pull off the road as soon as they can to fix the problem.

A ‘wobble’ occurs when the front wheel and handlebars suddenly start to shake from side to side at any speed.

Most wobbles can be traced to improper loading, unsuitable accessories, or incorrect tyre pressure. If the rider is carrying a heavy load, lighten it. If they can’t, shift it. Centre the weight lower and farther forward on the motorcycle. Make sure tyre pressure, spring pre-load, air shocks, and dampers are at the settings recommended for that much weight. Make sure windshields and fairings are mounted properly.

Check for poorly adjusted steering; worn steering parts; a front wheel that is bent, misaligned, or out of balance; loose wheel bearings or spokes; and swing arm bearings. If none of these is determined to be the cause, have the motorcycle checked out thoroughly by a qualified professional.

First Aid

First Aid can be defined as the emergency treatment of illness or injury in order to maintain life, to ease pain and to prevent deterioration of the patient's condition until professional medical help can be obtained.

The significance of First Aid

Motorcycle taxi riders spend a lot of time on the roads and, as such, can often be the first at the scene of road traffic crashes. It is very likely that a professional rider will witness at least one crash during his career. Because of this, it is important that taxi riders have a basic knowledge of First Aid in order to be able to assist at the scene of a crash where they can. This is a set of guidelines setting out what taxi riders should do when dealing with injured people as a result of a crash.

A motorcycle should carry basic First Aid kit for use to treat injuries until such time as professional medical help is on hand. This First Aid kit should contain as a minimum:

- 5 x sterile adhesive plasters;
- 2 x eye pads;
- 1 x conforming bandage 75mm;
- 1 x small dressings 30mmx30mm;
- 1 x non-woven triangular bandages;
- 5 safety pins;
- 1 x individually wrapped wipe;
- 1 x pair disposable gloves.

Roles and responsibilities

In the event of a crash, a rider should have the basic skills to provide emergency first aid to those in need until more experienced help can be obtained:

- Protect the scene – to prevent further crashes and minimise the risk to those rendering assistance;
- Park safely – where possible, ensure the motorcycle is parked in a safe position so as not to endanger others;
- Make vehicles safe – switch off the engine (and where possible the electrics);
- Report the crash to the emergency services - give relevant information:
    - What has happened;
    - The location of the incident;
    - Site conditions and dangers;
    - The quantity of people injured and the severity of injuries;
- Assess the physical state of the casualty (check vital functions - consciousness, circulation, breathing) as well as the physiological needs of those affected;
- Primary survey: **ABC** Check
    - **A**irway: Is the casualty's airway open and clear? Conscious: Possible cause of obstruction? Unconscious subject: Head Tilt and Chin lift;
    - **B**reathing: Is the casualty breathing normally? Look, Listen and Feel for Breaths for 5 seconds. Conscious: Possible other causes. Unconscious: Chest compression and rescue breaths (Need CPR training and appropriate conduct, for example, the use of pocket mask, gloves etc.). Perform Hands-only CPR (Cardiopulmonary Resuscitation). Will this work or must it be standard CPR with the breaths?

- **C**irculation: Are there any signs of severe bleeding? Controlling bleeding: Remove or cut clothing if necessary to expose the wound. Apply direct pressure to the wound. Maintain this pressure on the wound and help the casualty to lie down. Secure the dressing with a bandage, supporting the dressing/apply a second dressing if bleeding goes through the first bandage;
- This could be extended to be **DR ABC** – which extends the ABC check to the initial checks for '**D**anger' for the first aider and continuing danger for the patient followed by '**R**esponse'. The response is to check if the patient is conscious and responsive on arrival.

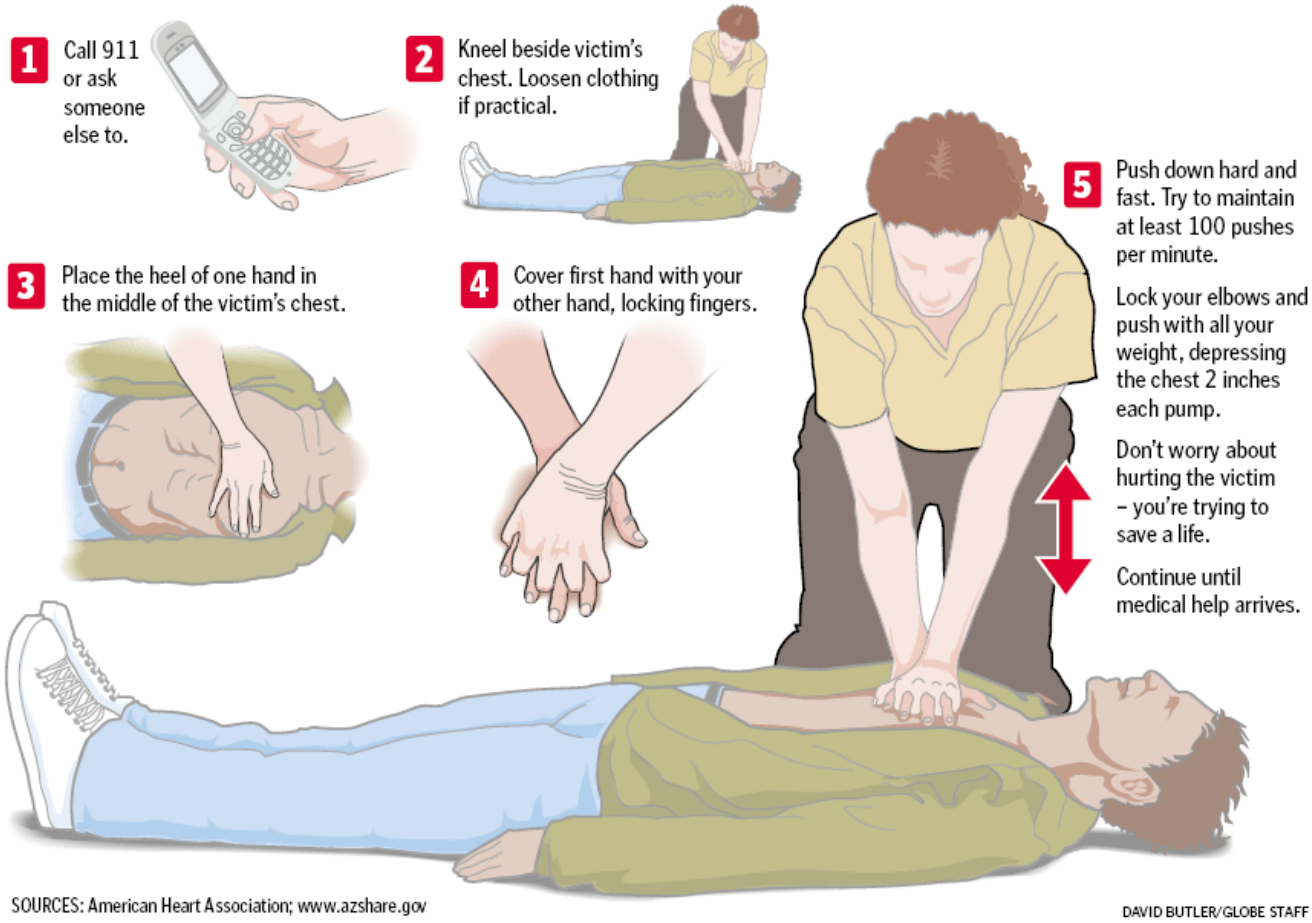
Hands-only CPR – Cardiopulmonary Resuscitation, commonly known as CPR, is an emergency procedure performed in an effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest. It is indicated in those who are unresponsive with no breathing or abnormal breathing. Standard CPR requires a process of chest compressions and mouth-to-mouth resuscitation but is difficult for someone untrained to conduct. A simpler 'hand-only' CPR can be done by untrained people.

The steps for hand-only CPR are as follows:

- Call the emergency services or ask someone else to;
- Kneel beside the casualty's chest and loosen clothing if practical;
- Place the heel of one hand in the middle of the casualty's chest;
- Cover the first hand with their other hand, locking fingers;
- Push down hard and fast. Try to maintain at least 100 pushes per minute. Lock their elbows and push with all their weight, depressing the chest 2 inches (5cm) each pump. They should not worry about hurting the casualty – they are trying to save a life. Continue until medical help arrives.

Hands-only CPR

The latest research shows that chest compressions alone are the most effective way for an untrained bystander to save a life after an adult collapses from cardiac arrest. The technique shown here should not be performed on infants, children, drowning victims, or in cases involving a drug overdose. Otherwise, here's what to do.



SOURCES: American Heart Association; www.azshare.gov

DAVID BUTLER/GLOBE STAFF

Note that the number to dial for emergency services (police, ambulance, fire) varies according to the country, as does the level of support that they can offer.

Never practice CPR on a real person in a training environment – all CPR demonstrations must be performed on a CPR training mannequin.

Managing a shocked casualty:

- Treat obvious causes such as bleeding;
- Help the casualty to lie down;
- Loosen tight clothing on the neck, chest and wrist;
- Keep the casualty warm by covering his body and legs with coats and blankets;
- If life-threatening conditions are managed or there are none present, move on to the secondary survey to check on further injuries or illness.

Cuts and Wounds:

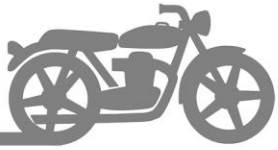
- First check for anything that may be in the wound, such as glass. Then, taking care not to press on the object, build up padding on either side of the object. If there is nothing embedded, apply firm pressure over the wound to stem the flow of blood;
- As soon as practical, fasten a pad to the wound with a bandage or length of cloth;
- Use the cleanest material available;
- If a limb is bleeding but not broken, raise it above the level of the heart to reduce the flow of blood. Any restriction of blood circulation for more than a short time could cause long-term injuries;
- It is vital to obtain skilled medical help as soon as possible. Make sure that someone dials emergency services where these services are available.

Secondary survey (This is for more advanced First Aiders):

- Respond to visible bleeding, unconsciousness, breathing problems, and shock, and offer psychological support, to enable the injured person to survive whilst awaiting the arrival of the emergency services.

Burns:

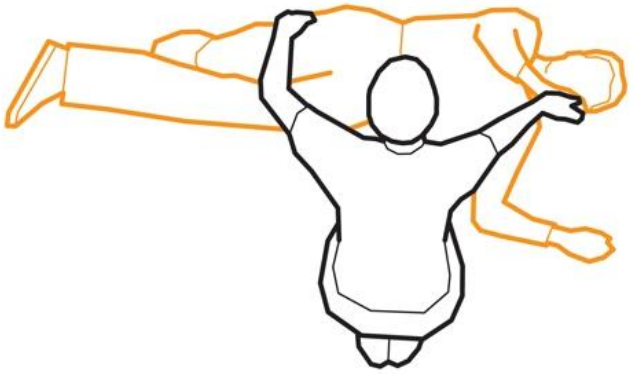
- Check the casualty for shock, and if possible, try to cool the burn. Try to find a liquid that is clean, cold and non-toxic with which to use;
- It is vital to obtain skilled medical help as soon as possible. Make sure that someone dials emergency services where these services are available.



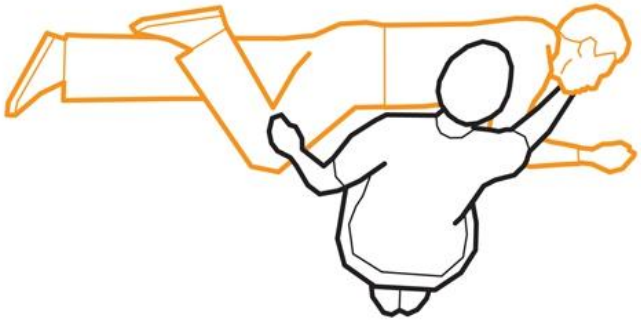
Recovery Position Guide

By placing someone in the recovery position, you're making sure that they are still breathing and can breathe easily, as it's not unusual for someone who has become unconscious to swallow their tongue. You're also making sure that if they vomit that it won't block their airway and choke them.

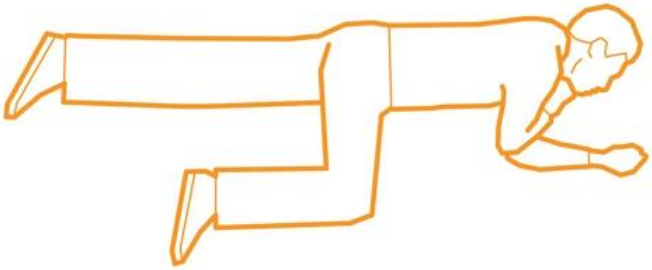
1. Open their airway by tilting the head and lifting their chin. Lie them on their side and straighten their legs.
2. Place the arm nearest to you at right angles to the body. Get hold of the far leg just above the knee and pull it up, keeping the foot flat on the ground. Place their other hand against their cheek.



3. Keep their hand pressed against their cheek and pull on the upper leg to roll them towards you and onto their side.



4. Tilt the head back so they can breathe easily.
5. Make sure that both the hip and the knee of the upper leg are bent at right angles.



11.11. Miscellaneous

Theoretical and Practical module

Manage safety and security risks

Many motorcycles are stolen each year, therefore motorcycle security should be a priority for any rider.

Motorcycles are stolen by joyriders, stolen to order, or stolen to be broken down as parts, and can often be out of the country before you know they are gone. But despite this, less than half of all motorcycles are protected by motorcycle locks or any other security devices.

An unsecured motorcycle is an easy target for thieves as it can be wheeled away, lifted or bundled into a van. The more security measures a rider makes, the less attractive the motorcycle will be to thieves. By doing this the rider will greatly reduce their risk of becoming a victim.

Motorcycle Alarms and Immobilisers

Does the motorcycle have either of these? By having an insurance approved combined alarm and immobiliser this will deter most thieves.

Motorcycle Locks

Perhaps the simplest and most visible deterrent, are large motorcycle chain locks or motorcycle cable locks. These should always be secured to an immovable object, such as a ground anchor, a lamppost, or another motorcycle. Always try to thread the chain or cable through the motorcycle frame if possible, as many motorcycles are stolen for parts and one wheel, either way, will not stop some thieves from taking the motorcycle.

Motorcycle disc locks can be a deterrent to the casual thief, but they will only slow down a professional by a few seconds. Professional thieves will often simply lift the motorcycle into a van and drive away, unhindered by any lock attached to the motorcycle itself. So the rider should never rely on these alone.

For safety, the rider should never ride with their motorcycle chain locks around their shoulders or with the motorcycle disc locks in their pocket. These can cause serious injury if they are involved in an accident.

Mark the Motorcycle

Try to mark parts of the motorcycle with its VIN (vehicle identification number), vehicle registration and postcode/address. As few as one-in-five stolen motorcycles find their way home again because their origin cannot be traced. The rest get broken down for parts and sold on the black market. By marking all parts of the motorcycle it makes it more difficult to sell them.

That is why it is worth marking as much of the motorcycle as possible to identify the owner. This can be done with a simple UV pen from a local DIY store and it will help identify the owner of the motorcycle or three-wheeler if it is recovered after being stolen.

Remove Equipment

A simple way to prevent thieves from stealing a motorcycle is to remove the spark plug or HT (High Tension) cap. Do not rely on just this method to secure a motorcycle.

Sensible steps to motorcycle security

Even the strongest motorcycle locks and the most sophisticated motorcycle alarms will do little good if the motorcycle is parked out of sight and give thieves time to steal them. Always park a motorcycle where it can be seen, day or night, by passers-by. Vary the places it is parked so that thieves don't learn the rider's habits.

Theft of motorcycle while in use

Motorcycles are often stolen at gun or knife point while the motorcycle is in use. It can often be the passenger or associates of the passenger who conduct the theft. The rider should consider carefully who they carry and to the location they want them to take them. If in doubt decline the journey.

REMEMBER – The rider's life is worth more than their motorcycle, so they should not offer any resistance!

Income & Expenditure

Operating costs and determining a minimum chargeable fare

It is essential that all motorcycle and three-wheeler taxi riders have some idea of the expenditure (or costs) associated with operating their vehicle in order to determine a pricing structure for each journey travelled. This section offers guidance to riders and/or owners of motorcycles and three-wheelers, in what should be taken into account when determining operational costs.

The following costs should be taken into account when calculating the operating costs:

- Fixed costs – such as licence renewal, taxes and insurance;
- Variable costs:
    - Running costs – which include fuel utilisation and maintenance;
    - Indirect costs – for example fines, repairs needed as a result of a crash;
- Human resources – salaries where this is applicable;
- Depreciation – the cost of replacing the vehicle at the end of its viable life span.

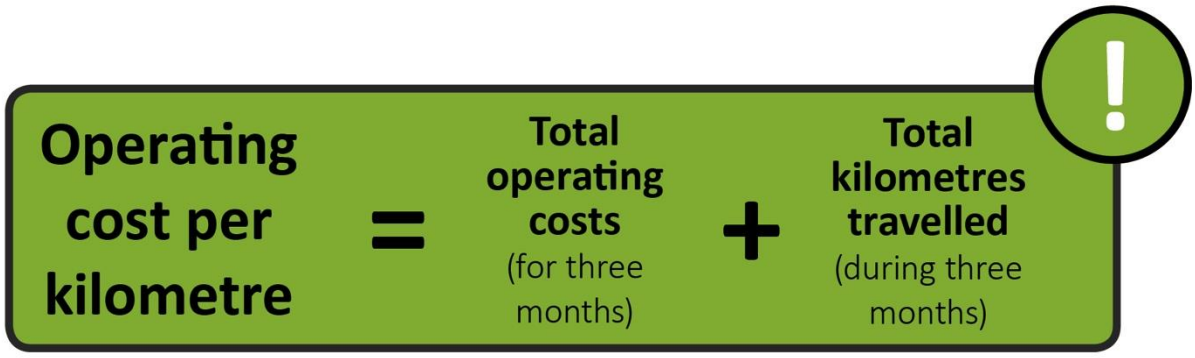
The table at the end of this section can be printed and used as a means of monitoring ongoing operational costs or the information in the table can be recorded in a notebook to serve the same purpose.

Calculating Operating Costs for Motorcycles and Three-Wheelers

So that the rider of a motorcycle or three-wheeler taxi can determine what fare she or he should charge the passenger, the operating cost per kilometre must be calculated.

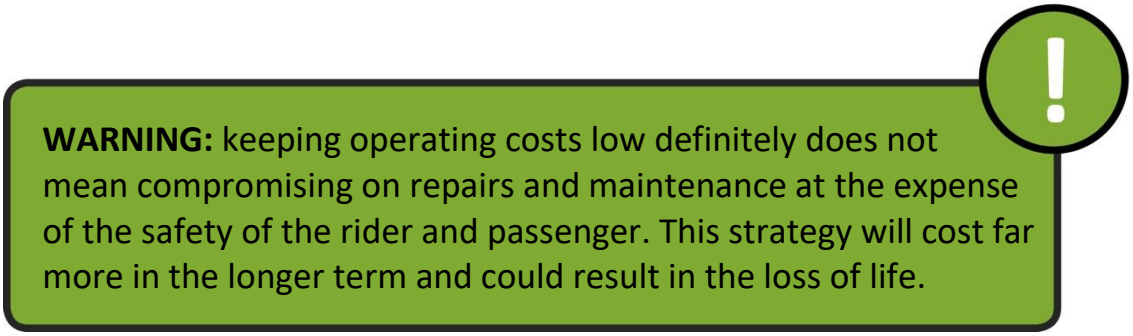
The rider should first calculate the cost of operating his or her vehicle over a given period e.g. three months. As already mentioned, operating costs should include all fixed and variable costs as well as salaries (if applicable) and vehicle depreciation (see the table for guidance).

For the same three month period, the total number of kilometres travelled should be recorded.

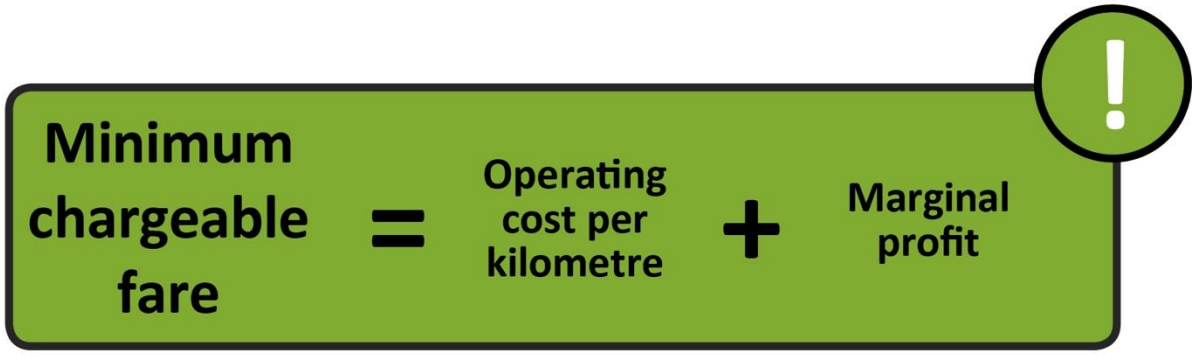


Calculating the Minimum Chargeable Fare

Keeping the operating costs low allows the rider to maximise his or her profit, and the best way to do this is to ensure efficient riding techniques are employed and that planned preventative maintenance takes place so that potential problems are spotted and rectified early.



The rider must consider what level of profit to make and should bear in mind that it should be fair to the passenger (customer). Excessive profits are likely to reduce the rider's customer base.



Optimising Motorcycle and Three-Wheeler Operating Costs

Fuel Utilisation

Optimising fuel utilisation avoids unnecessary waste and contributes significantly over time, to reducing operating costs. This can be done through improving riding efficiency and through regular servicing of the vehicle. Efficient riding also promotes the use of safer behaviour which in the long term reduces the risk of death or injury on the road.

Safe & Fuel Efficient Riding

Safe & fuel efficient riders should adhere to the following principles:

- Ride smoothly and steadily at an optimum riding speed of 40 to 50 km/h or slower as conditions and safety dictate;
- Change gear judiciously according to the speed and load requirement;
- Use the accelerator cautiously;
- Ensure choke lever is in 'OFF' position after engine gets warm;
- Switch off the engine if they intend to stop for more than two minutes;
- Avoid harsh braking;
- Don't overload the vehicle or exceed the specified payload;
- Avoid riding with partial disengaging of clutch (half clutch);
- Avoid over/under inflation of tyres.

Proper Maintenance

Riders should remember that, a defective motorcycle or three-wheeler consumes excessive fuel which will increase operating costs. To optimise fuel consumption riders should allow for planned preventive maintenance in line with the manufacturer's recommendations.

Spare Parts and Maintenance Costs

The following principles should be adhered to in order to minimise the cost of maintenance and the need to purchase spare parts, thereby contributing to reduced operating costs:

- Apply good riding habits;
- Carry out a daily vehicle check (see the table below);
- Follow the manufacturer's recommendations.

Daily Motorcycle / Three-Wheeler Kilometres Covered		
Registration Number: _____	**A.** Odometer Reading (Start of day): _____km	**C.** Kilometres travelled: (B – A = C)
Date: _____	**B.** Odometer Reading (End of day) _____km	 _____km

Daily Motorcycle / Three-Wheeler Operating Costs			
S/N	Cost Component	Cost	Guidance
1	Licence renewal		Licence renewal is likely to be annual or bi-annual therefore to calculate daily cost: Cost of licence ÷ Number of days between renewal
2	Tax		Tax is general paid annually: Total annual tax ÷ Total number of working days per year
3	Insurance		Insurance is similarly an annual payment: Total paid for annual insurance ÷ Total number of working days per year
4	Fuel		Cost of fuel each day

5	Maintenance		A running total of maintenance (labour and parts) should be kept, however when integrating this into the daily operational costs it might be best to draw on historical maintenance costs: Historical maintenance costs for a given period ÷ number of days in that given period
6	Traffic fines		Also best to look at historical data and include traffic fines such as speeding penalties, parking infringements etc. for a given period for example: Cost of fines for previous year ÷ Total number of working days in a year
7	Replacement spare parts		Historical cost of spare parts for a given period ÷ number of days in that given period
8	Salaries		The daily cost of each employee including any contributions to pensions etc.
9	Depreciation		Vehicle replacement cost ÷ economically viable life (km travelled) = depreciation cost (per km) Taking into account the increased running costs as the vehicle gets older (increased maintenance needs, decreased fuel efficiency) it is possible to calculate when the vehicle should be replaced

12. Conclusion

By fully utilising this manual to train motorcycle riders and in particular motorcycle taxi riders safer, more confident and more knowledgeable riders will be created. This will help reduce death and injury on the road.

Total familiarisation of this manual by the instructor should be seen as providing them with the basic minimum knowledge to pass on to riders. Instructors are encouraged to seek out further material in order to become better instructors. The internet is a huge resource bank and instructors are urged to seek out new and further information to expand their skills