

Important Information for the new Motorcyclist



ADA has a long-standing relationship with Honda SA and has been presenting the Honda Rider Academies across South Africa since April 2005

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TABLE OF CONTENTS

Description	Page
CONTEXT	1
OBJECTIVES	1
OUTCOMES	1
CHAPTER 1: MOTORCYCLING IN GENERAL	2
PURPOSE OF THE CHAPTER	2
OUTCOMES OF THE CHAPTER	2
INTRODUCTION	2
TYPES OF MOTORCYCLES	2
GENERAL USES OF MOTORCYCLES.....	3
SELECTING THE RIGHT MOTORCYCLE	4
SUMMARY	4
CHAPTER 2: KNOWING YOUR MOTORCYCLE	5
PURPOSE OF THE CHAPTER	5
OUTCOMES OF THE CHAPTER	5
INTRODUCTION	5
MOTORCYCLE SIDE VIEWS	5
COMPONENTS OF A MOTORCYCLE	6
PRIMARY MOTORCYCLE CONTROLS	7
SECONDARY MOTORCYCLE CONTROLS	8
SUMMARY	9
CHAPTER 3: PREPARING TO RIDE	10
PURPOSE OF THE CHAPTER	10
OUTCOMES OF THE CHAPTER	10
INTRODUCTION	10
DRESS TO RIDE	11
<i>The basics</i>	11
<i>Helmet</i>	12
<i>Face and eye protection</i>	13
<i>Jackets and pants</i>	14
<i>Gloves</i>	16
<i>Boots</i>	16
<i>The relevance of personal protective gear</i>	17
PRE-RIDE INSPECTION	18
POST-RIDE INSPECTION	20
SUMMARY	20
CHAPTER 4: BASIC RIDING SKILLS	21
PURPOSE OF THE CHAPTER	21
OUTCOMES OF THE CHAPTER	21
INTRODUCTION	21
RIDING POSITION	21
<i>General sitting position</i>	21
<i>Hand positions</i>	23
<i>Feet position</i>	25

GENERAL ASPECTS A PRACTICAL COURSE WILL COVER	26
CHAPTER 5: STREET SURVIVAL SKILLS.....	27
PURPOSE OF THE CHAPTER	27
OUTCOMES OF THE CHAPTER	27
INTRODUCTION	27
HURT STUDY	27
10 SAFER RIDING PRACTICES BASED UPON THE HURT STUDY	30
WHO ARE THE MOST AT RISK?.....	30
PRIMARY COLLISION AREAS.....	31
DEFENSIVE RIDING PRACTICES	32
<i>SIPDE</i>	32
<i>Danger zones around vehicles</i>	34
<i>Visibility</i>	34
<i>Keeping your distance</i>	36
<i>Being seen</i>	36
<i>Lane positioning</i>	36
<i>Being followed (tailgating)</i>	37
<i>Passing and/or being passed</i>	37
<i>Collision avoidance</i>	38
<i>Reading and handling dangerous surfaces</i>	39
<i>Rear safety glances</i>	39
SUMMARY	39
CONCLUSION	40

CONTEXT

Objectives

The document strives to transfer basic knowledge around various subject areas that is important for us as motorcyclists:-

- a) Share and enforce safe riding practices and behaviours.
- b) Share dress code that increases rider safety.
- c) Provide riding principles and riding abilities.
- d) Share the importance of pre-ride inspection.
- e) Provide theory on basic precision riding concepts.
- f) Indicate important aspects of post-riding inspection.

Outcomes

With this knowledge enhanced by formal riding skills training the following should be attained:-

- a) Identify and apply behaviours that are conducive towards environmental friendly riding practices.
- b) Understand aspects that lead towards increased risk to the rider and other road/track users.
- c) Know the minimum safety requirements in terms of personal protective clothing.
- d) Understand pre-ride inspection aspects specifically applicable to the motorcycle that the individual owns.
- e) Understand the application of defensive riding principles.
- f) Application of the minimum practical range exercises vis-à-vis – **must attend formal course for these aspects:**
 - Being able to safely pick a motorcycle up that lies on its side (For ladies and men with back and other limiting injuries with assistance from a riding partner).
 - Successfully passing through a set of cones, 6 meter apart in a slalom pattern.
 - Successfully passing over an obstacle whilst looking up.
 - Increased confidence and respect for the motorcycle that the individual owns.

CHAPTER 1: MOTORCYCLING IN GENERAL

Purpose of the chapter

The purpose of this Chapter is to provide a short overview regarding motorcycling and motorcycles in general.

Outcomes of the chapter

The outcomes of the Chapter are:-

- a) To recognise the different types of motorcycles.
- b) To recognise the various purposes that a motorcycle is primarily used for.
- c) To understand the key criteria in selecting the right motorcycle.

Introduction

Motorcycles have been around for many years. Throughout the years motorcycles and associated uses and protective gear has continuously evolved to a state where we know it now. What lies ahead is still very much unknown.

Throughout the years people from various backgrounds and statuses have been using motorcycles. In the 1970's it was also the era of the "hippies" and "duck-tails", normally associated with motorcycle gangs of which mothers were scared of. But as time evolved a broader representation of the community became evident as being so-called bikers. Each group seems to evolve and be associated with a specific type of motorcycle.

Types of motorcycles

Motorcycles can be divided into three basic types:-

- a) **Street motorcycles** - Street motorcycles are primarily made for smooth tarred road surfaces, intended for use on open public roads. Users of such motorcycles are required by law to have a valid motorcycle learner's licence or a motorcycle licence in order to use the motorcycle in public areas.



Example: CBX250

- b) **Adventure/touring motorcycles** – These are mostly 650cc and bigger capacity motorcycles that are made for use on gravel roads as well as tarred surfaces. In some configurations these machines have a level of off-road capability as well. Adventure/touring machines are also roadworthy machines and require the same licensing requirements as any other street motorcycle.



Example: XL700V

- c) **Off-the-road motorcycles** – Off-the-road motorcycles are dedicated machines made for off-the-road application. The main users of this specialised type are competitors or weekend fun seekers.



Example: CRF230

General uses of motorcycles

Motorcycles are mainly used for:-

- Commuting** – Every day or nearly every day use as means of transport to work and back.
- Touring** – Whether it is around the world or just within one province, it is mainly focussed on seeing things and visiting places.
- Recreational** – Use as means of enjoyment with friends, normally for off-the-road type riding or in mountainous areas.
- Competition** – Participating in regulated and controlled events under a governing body.

Whatever the purpose, the type of motorcycle should support this selected primary purpose.

Selecting the right motorcycle

If you receive the motorcycle as a present then there is not much that you can do in terms of what type of motorcycle you receive, except if this giver was informed of your requirements or has listened carefully to you.

When selecting a motorcycle it is important that you think carefully about the primary purpose of use. Selecting the wrong motorcycle for your primary use may have serious consequences. During the process to determine the reason for acquiring the motorcycle one must consider whether the reasons relate to a (a) basic need or a (b) want.

A basic need implies that you will rely heavily on the asset once you have acquired it. In this regard your decision on the motorcycle should be the right one whereas if it is just something you want, your experiences of using it every now and then would be different.

The aspects below are based upon the average motorcyclist and not the extremist. The extremist can go around the world, following non-existent roads using a superbike. An example of such extremist is Sjaak Lucassen that went around the world, starting on 04 March 2001 and completing the round-the-world trip three years later, using a superbike. But the average rider may find it difficult to commute daily to work and back, in between lanes of cars and in the rain using a superbike. In this regard an adventure/touring machine may be a better motorcycle based upon the person's needs as it has a more upright ride position, you can easily see over cars, etc. However, if the person wants to go on weekend breakfast runs with all his friends that use superbikes, he may decide to live with the limitations of the motorcycle during commuting for the exhilaration of weekend-riding. Such a decision is almost always influenced by the ability of the individual to afford multiple types of motorcycles for multiple purposes.

In this regard it is important for the individual to consider the following:-

- a) Primary purpose of use (80% usage).
- b) Your own riding skills and proficiencies.
- c) Affordability.
- d) Carrying loads and/or passengers.
- e) Distances to travel.
- f) Condition of the roads.

When making a decision about which motorcycle to buy, talk to friends, relatives and specialist in this area, but always keep your own needs and wants in mind.

Summary

If you select the motorcycle that you like and it supports what you intend to use it for and you are willing to live with the compromises, then the motorcycle would benefit you and provide you with the fun and excitement of two wheel riding.

CHAPTER 2: KNOWING YOUR MOTORCYCLE

Purpose of the chapter

The purpose of this Chapter is to provide a short introduction on the key motorcycle components and controls.

Outcomes of the chapter

The outcomes of the Chapter are:

- a) To be able to identify the key components of a motorcycle.
- b) To be able to identify the motorcycle riding controls.

Introduction

If you use the English word “stamp” it may have different meanings if not used in context. For one person it may mean a postage stamp and for another person it may mean to trample on something.

In terms of motorcycle components it is important to be clear in terms of what you are referring to if you ask for advice or assistance or want to share some information. It will not have the same effect if you refer to “some little thing on the left-hand side” instead of referring to the fuel cock. Using a common language assists in conveying the right answer and getting a required response.

Motorcycle side views

The two sides of a motorcycle look very similar, but have key distinct components:



Left-hand side. Some unique components:-

- a) Clutch.
- b) Fuel cock/tap.
- c) Gear selector/lever.
- d) Drive chain and sprockets.

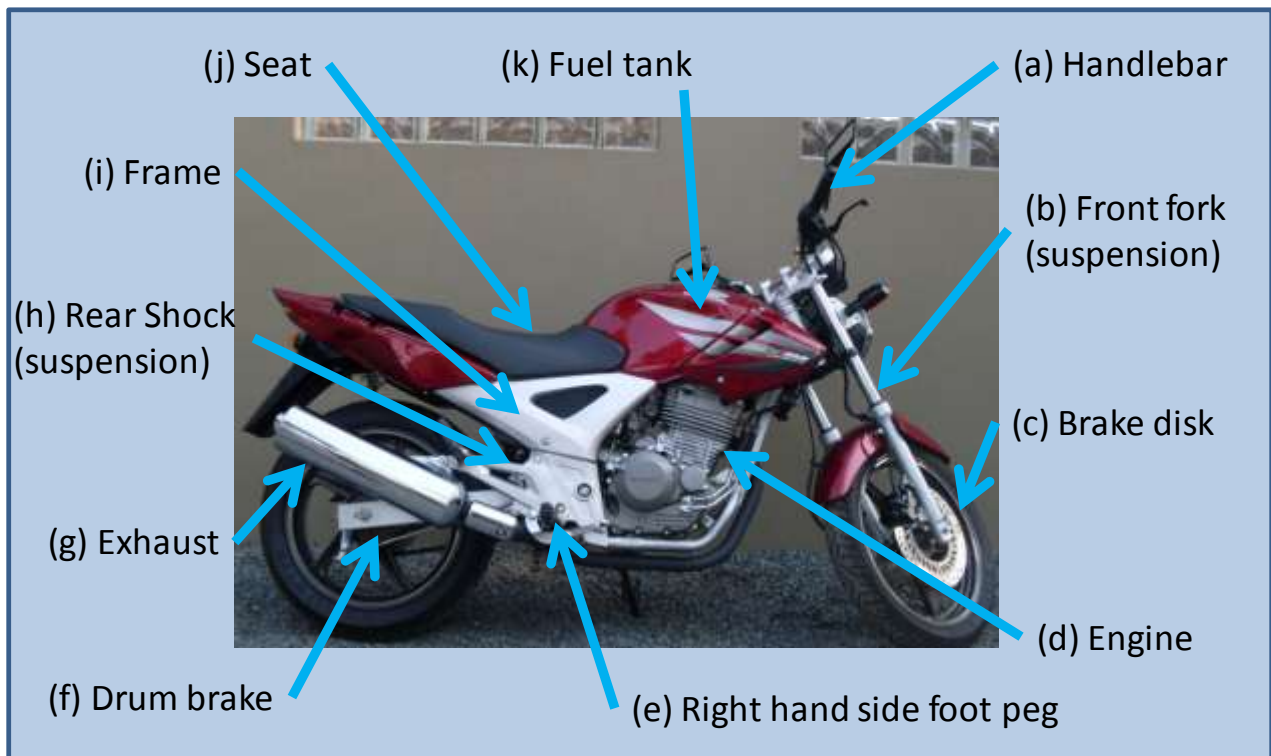


Right-hand side. Some unique components:-

- a) Front brake.
- b) Throttle.
- c) Rear brake.
- d) Exhaust.

Components of a motorcycle

The main components of the motorcycle are depicted below:



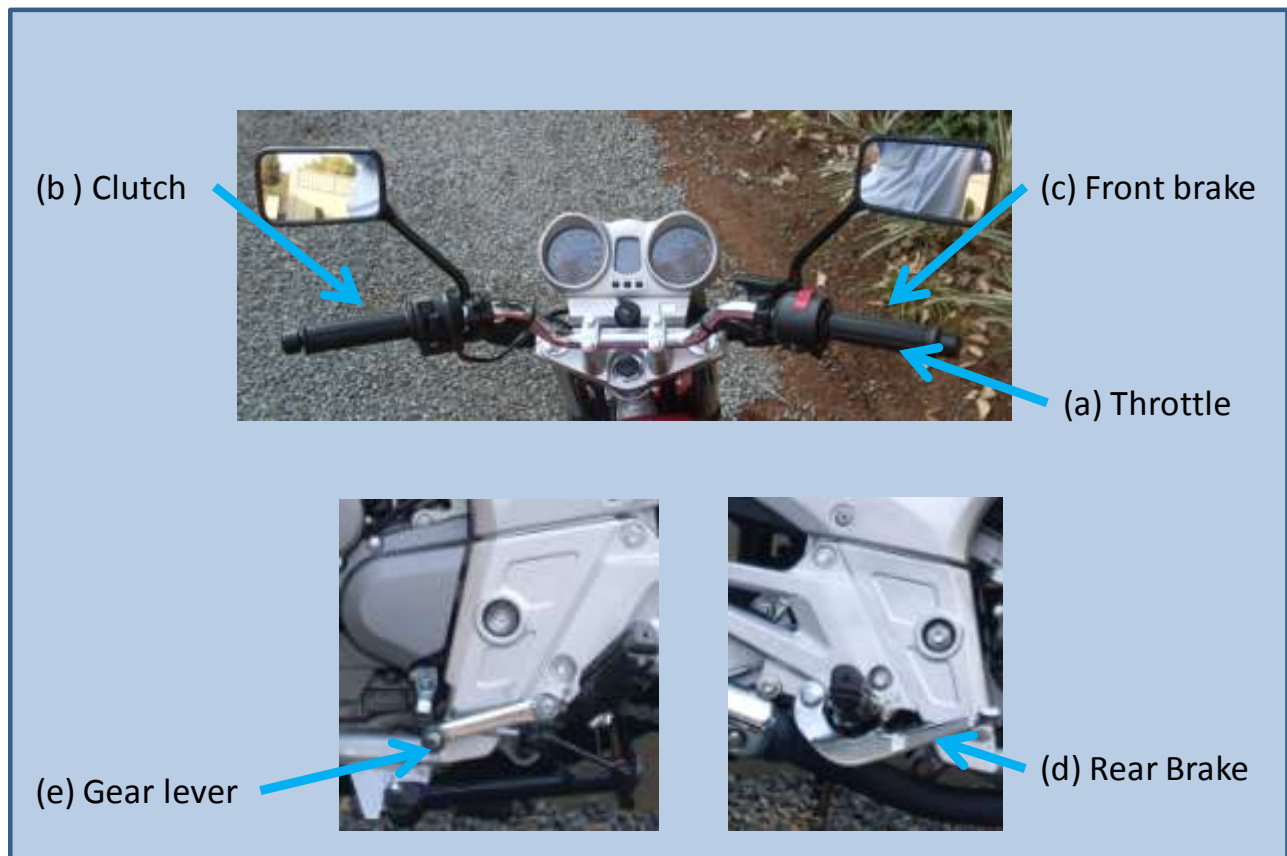
Components:-

- a) **Handlebar** – Hosts all the main controls for steering and controlling the motorcycle. This will be discussed in more detail at a later stage.
- b) **Front forks** – Provides the ability for the front wheel to stay in contact with the road surfaces in most cases as well as contribute towards rider comfort.
- c) **Disk brakes** – Provides stopping power on the front wheel.
- d) **Engine** – The heart of the motorcycle that gives it propulsion power.
- e) **Foot peg** – Also referred to as footrests. Provides placement for the feet, position from where to apply the break and gear controls as well as contributes towards weight distribution during riding.
- f) **Drum brake** – Use on the rear of older and more inexpensive motorcycle. Provides rear braking power and assists with motorcycle control during advanced riding technique applications.
- g) **Exhaust** – Distribution of exhaust emissions into the environment.
- h) **Rear shock** - Provides the ability for the rear wheel to stay in contact with the road surfaces in most cases as well as contribute towards rider comfort.
- i) **Frame** – Provides the solid backbone for the construction of the motorcycle. Affects the motorcycle's performance.
- j) **Seat** – For rider to sit on and comfort.
- k) **Fuel tank** – Contains the motorcycle's fuel during operation.

More detail on all components of the motorcycle is provided within the applicable Owner's Manual. Every rider should read his own motorcycle's Owner's Manual.

Primary motorcycle controls

The primary rider controls provide the rider with the ability to operate the motorcycle safely and efficiently. There are five (5) primary controls that affect riding:



The five (5) main riding controls are:-

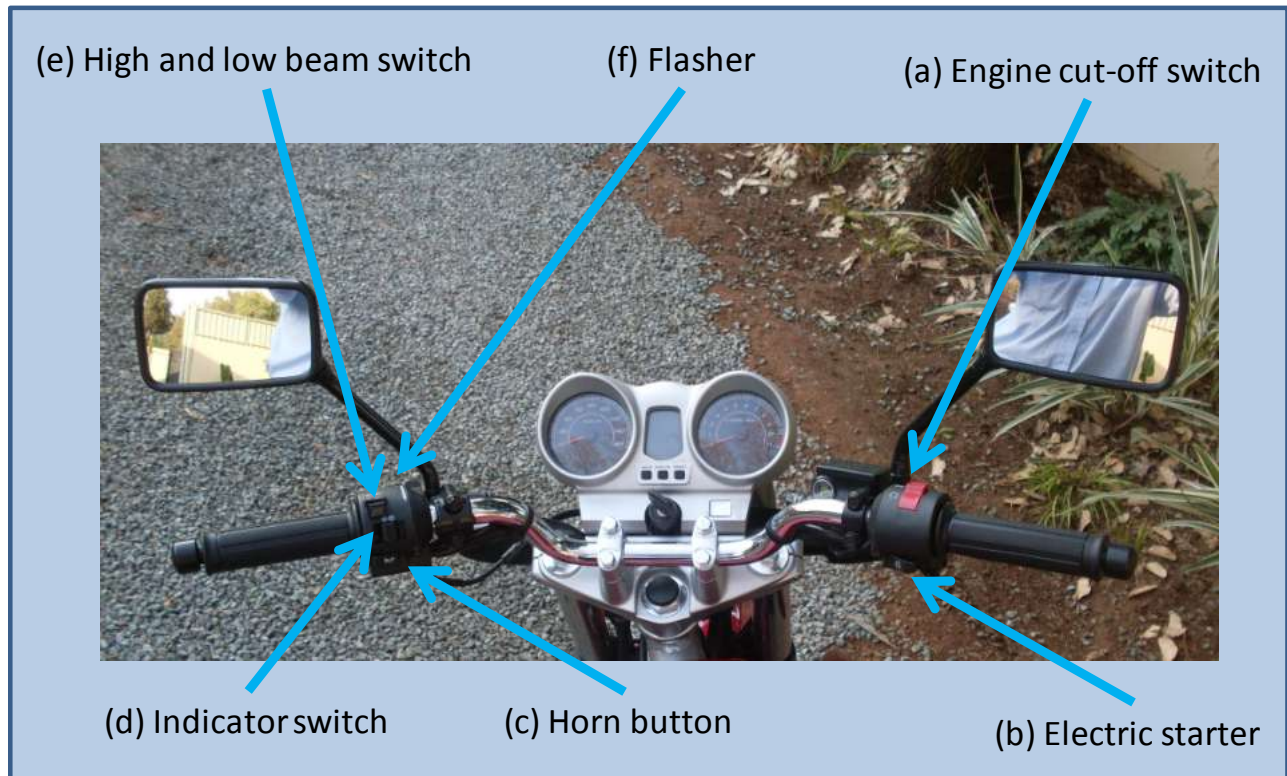
- a) **Throttle** – Used for acceleration and deceleration.
- b) **Clutch** – Used for engaging and disengaging a specific gear.
- c) **Front brake** – Used for slowing the motorcycle down or stopping.
- d) **Rear brake** - Used for slowing the motorcycle down or stopping, also used for other advanced techniques.
- e) **Gear selector/lever** – Used for ensuring that the motorcycle is in the correct gear for the specific situation.

One of the primary focus areas of any motorcycle should be to effectively use each of these controls individually as well as in combination. During the practical exercises the correct use of the primary controls will be emphasized as well as the resultant effect of right and wrong application. This is not just a focus of this course but also a focus of any subsequent and more advanced riding courses.

One example is the use of the throttle. If you ride through a corner, closing the throttle will make the motorcycle lean over further whilst opening the throttle would make the motorcycle want to stand-up. This affects rider safety through corners if applied wrongly.

Secondary motorcycle controls

Secondary controls on the motorcycle are the following:



Secondary controls:-

- a) **Engine cut-off switch** – This switch is used in emergency situation to stop the engine from running. Normal stop of the engine is applied through the use of the ignition key.
- b) **Electric starter** – Also referred to in general language as a “happy button”. It is used to start the motorcycle once the ignition key has been turned to the required position.
- c) **Horn** – This is used as a warning mechanism in various types of situations.
- d) **Indicator switch** – This is used to initiate the right or left indicators when the rider plans to make directional changes. It does not automatically switch off after the directional change has been effected and needs to be physically reset to the off position.
- e) **High and low beam switch** – This switch is used to change the headlight from high beam to low beam. From some previous models and between some models the high and low beam switch and the hazard switch differ and/or have been changed. This has now been standardised.
- f) **Flasher** – The flasher is used when the low beam has been selected to flick the lights to high beam in order to act as a warning.

Summary

Successful and effective use of all these controls individually and in combination requires good coordination between mind and all four limbs (two arms and two legs). A rider must use both hands and both feet to control a motorcycle.

Knowing the various primary, secondary and other controls of the motorcycle as well as their associated purposes supports a common language and provides the basics towards a smooth and effective operation. As an example of skill development, in practical exercise it will be expected of the rider to use the secondary controls without looking down to find them.

CHAPTER 3: PREPARING TO RIDE

Purpose of the chapter

The purpose of this Chapter is to address all the aspects related to the rider and the motorcycle that is important prior to using the motorcycle.

Outcomes of the chapter

The outcomes of the Chapter are:-

- a) To understand the correct dress requirements to ride (Personal protective gear).
- b) To be able to conduct a pre-ride inspection.

Introduction

The origination of the abbreviation ATGATT is not known from the author's perspective but it is a term that is widely used in motorcycle circles. ATGATT stands for **All The Gear All The Time**.

But what if I am just going to the supermarket around the corner to get a loaf of bread? From those that have not made it there and back safely, the answer remains ATGATT!

One cannot negotiate on safety. There is always risk involved, and in some instances the risk of getting hurt is higher than in other instances. The rider will always be the one to accept the risk! Risk in terms of motorcycling cannot be transferred or negated. Risk of injury or motorcycle damage must always be accepted and mitigated as far as humanly possible through the application of suggestions in this document and other widely available sources.

The level of risk can be determined, whether calculated or perceived, based upon the (a) possibility that something may happen multiplied by the (b) impact if it should occur which provides as result a (f) risk factor. Whether this is a formal approach or just a level of awareness with a level of assessment, looking at risks and defining an appropriate response is a reality of life.

Deciding to apply ATGATT is a risk response choice.

However, safety is not only applicable to the ability to apply ATGATT but also to apply the practice of pre-ride inspection, making sure your motorcycle is roadworthy and other aspects.

For all types of motorcycles it is important to:-

- a) Wear protective devices and protective clothing.
- b) Always tell someone where you are going and when you will return.
- c) Do not drink alcoholic beverages and/or use drugs before or while riding.
- d) Know the machine before operating it. Read your motorcycle's Owner Manual.
- e) Take a safety course before first time operation.
- f) Always directly supervise young riders.
- g) Always be courteous to others.
- h) Obey laws and regulations.

Dress to ride

The basics

This section is not promoting any specific brand of protective gear. The choice of brand is an individual rider's prerogative.

Personal protective gear has several purposes. It varies from protecting you when involved in an accident as well as protecting you from the elements. In addition, some protective gear also provides you with increased visibility through the use of reflective material. However, the protection provided is not ultimate protection for any type of accident or weather conditions.

The basic protective gear includes, but is not limited to:

- Helmet.
- Riding jacket.
- Sturdy pants.
- Gloves.
- Riding boots



Helmet

The primary purpose of a helmet is to provide protection to the head and brain. In order to provide this protection the rider must have selected the right helmet that complies with a safety standard as well as use and maintain the helmet appropriately.

Some configurations of helmets include:-

- a) Open face helmet.
- b) Full face helmet.
- c) Motocross helmet (open but with chin bar).



A full face helmet, as depicted above, provides under most conditions the better protection to the wearer than an open face or other type of helmet.

A helmet (mainly for road purposes) has six main components that contribute towards protecting the head and brain. These components are:

- a) Outer shell.
- b) Impact absorbing inner material.
- c) Comfort padding.
- d) Chin bar.
- e) Restraining chin strap.
- f) Visor.

In addition to these components, helmets are also subjected to stringent tests in terms of the applicable safety standards. Some standards that exist are:

- a) DOT. This is the original standards applied to most helmets.
- b) Snell. The Snell test is a test executed in the US on helmets by a non-profit-making foundation.
- c) ECE 22.05. A European Community test applied to helmets.

Each of these standards focus on other key aspects of helmet testing. Recently the United Kingdom (UK) launched a project to develop a comprehensive standard that supports findings related to head injuries as well as strive to develop a single world-wide acceptable standard. This project was called the SHARP project. The SHARP helmet rating scheme is based upon the COST 327 scientific study.

In essence, a rider should always select a helmet based upon the following aspects. The helmet:

- a) Complies with one of the acceptable safety standards (see DOT, Snell, ECE 22.05).

- b) Has been recently manufactured – The lifespan of a helmet, specifically the interior impact absorbing material is about 4 – 6 years after which it may lose its effectiveness for impact absorption.
- c) Fits snugly and tight onto the wearer’s head. Must not be able to easily move the helmet from side to side and up and down.
- d) Is easily seen, increases visibility of the wearer. A light coloured helmet can contribute largely to visibility.
- e) Has no previous and obvious damage.

The helmet should be maintained in accordance with the instructions of the manufacturer. Any impact or other damage to the helmet should be subjected to inspection by a specialist as soon as possible. If required, the helmet should be replaced.

It must also be kept in mind that although there may be no external damage to the helmet there may be damage to the inside of the helmet where for example the inner impact absorbing material may have moved away from the outer shell. This leaves a vacuum that may not provide adequate protection in case of an accident to the head area.

When selecting a helmet the safety features and correct fitment must be of a higher important than getting the right brand name and or colour! During selection it must also be kept in mind that all heads are different. One brand may fit one person but it may not fit another person, thus selecting similar looking helmets for two riders or a rider and passenger may not always be possible.

Your helmet belongs to you, do not share it!

Face and eye protection

In most cases a full face helmet provides adequate eye and face protection. Face and eye protection should be impact resistant and scratch free.

A scratched or dirty visor negatively affects the rider’s ability to see properly, specifically at night. Reducing the possibility of damage to the visor, helmets and visors should be cared for in accordance with manufacturing guidelines, placed in areas where the possibility of scratches to the visor is minimised. Cleaning a visor with a greasy or dirty cloth or for example with a windscreen cleaner at a garage may cause the shield to discolour.

A shield also provides protection against flying objects and insects that may come into the eyes whilst riding and even when parked next to the road.



High risk



Low risk



High risk



Lower risk



Lowest risk

The colour of the visor always impacts the ability to see well. Whilst a tinted visor contributes towards less eye fatigue on a sunny bright day it will have a total negative affect if the rider tries it at night. If a tinted shield is used into the night the rider is normally forced to open the visor which increases the risk of getting objects or insects into the eye.

Even if a motorcycle has a high shield, a visor or appropriate goggles should be worn at all times! A shield does not provide adequate eye protection. Its primary purpose is to deflect wind away from the Rider.



Jackets and pants

There is a variety of quality motorcycle riding gear available on the market today. It covers all disciplines of motorcycle riding. Whether it is for daily commuting, race days, touring or for the coldest of winter, the gear is available.

Except for the protection properties of the motorcycle riding gear it also protects the wearer from the elements. Cold from a winter day and/or the heat of a summer day will affect the rider and contributes to fatigue. Fatigue contributes towards a loss of concentration which could lead to an accident. Exposure to cold weather could result in hypothermia which slows down muscle movement and reduces concentration. Extreme heat or constant exposure thereto can result in heat exhaustion and dehydration that could cause headaches, dizziness and loss of concentration.

Finding riding gear that works well for extreme heat and extreme cold conditions is not always possible and additional protective clothing may be required for protection against these conditions. This includes protective gear such as thermal underwear and winter gloves. Wearing the wrong clothes for protection against the elements may result in you wearing three jackets and a jersey that impairs your ability to easily handle the motorcycle's controls.

It is important to invest in the right range of protective gear!

Motorcycle gear should be comfortable to wear, should be washable and easily to dry, specifically if being used for touring purposes. It should not limit your ability to control the motorcycle, specifically also for those riders that commutes and need to be able to be quick in response to dangerous situations.

Motorcycle gear should not restrict the flow of blood to your legs, arms, hands, etc due to being too tight. Riding gear, when fitted, should always be tested to see if the Rider can comfortably sit on the motorcycle when fully dressed, able to have a level of free movement in terms of all controls and to make sure the sleeves and legs are long enough so as to not cause open exposed body parts when sitting and riding.

Leather is generally a good material due to its strength and durability, but is quite bulky and heavy. Other abrasive-resistant material is also available on the market. Many riders use standard jeans. Jeans has limited abrasive-resistant abilities as well as provides very low protection against cold and heat. The use of jeans should be avoided if at all possible.

Loose hanging objects from the body should be avoided as it can easily get caught onto something or go into the wheels or other moving parts.

The colour and reflective abilities of riding gear also contributes towards rider safety as it makes a rider more visible. In some instances additional reflective clothing can be added such as the vest indicated below:



See and be seen!

Gloves

Good gloves protect the hands. Under normal circumstances, if a rider does go down from a motorcycle, the first reaction is put out the hands with the palms down. Although this may not matter in a high impact or high speed situation it may make a big difference in a slow speed and low impact situation. Injuring your hands will affect the ability to hold onto the motorcycle as well as to use the controls effectively.

Gloves can reduce the seriousness of low speed and low impact injuries to the hands and in a limited manner to high speed high impact injuries. It may contribute to you being able to rider further.

Gloves also provide protection against the elements such as rain, hail, cold, wind and other objects. If the glove is long enough it will also protect the lower part of the arm against sunburn if the jacket is not long enough. It reduces hand fatigue which impacts the ability to effectively use the primary controls (throttle, clutch and front brake) as well as the secondary controls (horn, low/high beam, indicators, flasher, etc).



High risk



Lower risk

Gloves also provide a better grip!

Gloves can be acquired as a general purposes glove but may have limitations in terms of being water resistant or working well in extreme cold situations. Some gloves are also prone to give off some colouring when it gets wet. Search carefully and invest in good gloves that support your riding purposes. It may be good to get a set for winter and a set for summer based upon your riding habits.

Boots

There is a wide variety of riding boots available. Select the boots that will support your riding purposes.

Riding boots protect your feet and ankles as well as enhance the use of the foot controls (rear brake and gear shifter).

It should have soles that reduce the risk of slipping when you put your feet down on varied surfaces. Any laces should be properly tied and tucked away as it may be caught in the gear shifter or rear brake lever.

Keep boot heels as low as possible as they can affect foot movement as well as get caught on the motorcycle during operation. They also contribute towards easier twisting of the ankle if you need to put your foot out suddenly. Rather carry an extra set of shoes for walking around than trying to ride with them as well as have the best shoes available for the function you are attending.



High risk



Lower risk

Good riding boots should protect your feet and ankles whilst providing adequate water proofing and grip when putting your foot on the ground.

The relevance of personal protective gear

The HURT study in 1981 arrived at the following findings which directly relate to safety and personal protective gear (more detail is provided in a later chapter):-

- a) Half of the injuries to the somatic regions were to the ankle-foot, lower leg, knee, and thigh-upper leg.
- b) The use of heavy boots, jacket, gloves, etc., is effective in preventing or reducing abrasions and lacerations, which are frequent but rarely severe injuries.
- c) Seventy-three percent of the accident-involved motorcycle riders used no eye protection, and it is likely that the wind on the unprotected eyes contributed in impairment of vision which delayed hazard detection.
- d) Approximately 50% of the motorcycle riders in traffic were using safety helmets but only 40% of the accident-involved motorcycle riders were wearing helmets at the time of the accident.
- e) Voluntary safety helmet use by those accident-involved motorcycle riders was lowest for untrained, uneducated, young motorcycle riders on hot days and short trips.

- f) The most deadly injuries to the accident victims were injuries to the chest and head.
- g) The use of the safety helmet is the single critical factor in the prevention of reduction of head injury; the safety helmet which complies with FMVSS 218 is a significantly effective injury countermeasure.
- h) Helmeted riders and passengers showed significantly lower head and neck injury for all types of injury, at all levels of injury severity.
- i) The increased coverage of the full facial coverage helmet increases protection, and significantly reduces face injuries.

The above findings support the application of ATGATT.

Pre-ride inspection

In our regular use of the motorcycle we rarely spend the time to conduct a proper pre-ride inspection whilst it remains a key contributing factor towards rider safety. A maintained motorcycle is a reliable and safe motorcycle. It does not take up a lot of time and so often it is left for the service intervals.

Pre-ride inspection should be conducted at least once a week depending upon the type of riding being conducted. The person that rides the motorcycle is responsible to conduct this with or without assistance. Knowing your motorcycle improves your safety as it is important that you know your motorcycle very well. In this regard the rider must consult and regularly review the motorcycle's Owner's Manual.

The Motorcycle Safety Foundation (MSF) in the USA has defined the **T-CLOCSSM** as an abbreviation to support the execution of the pre-ride inspection. They suggest that this inspection should be conducted before every ride!

T – Tyres and wheels:-

- a) Air pressure – See Owner's Manual, remember different tyre pressures are required for rider only and for adding a passenger.
- b) Tread – Damage to tyre or protruding objects.
- c) Cracks and dents to the wheel rims.
- d) Loose spokes.
- e) Bearings – Play on wheel and steering head bearings.
- f) Brakes – Check smooth operation and wear on brake pads.

C – Controls (primary and secondary):-

- a) Levers - Check for smooth operation and proper adjustment/positioning.
- b) Switches – Check that what is required to happen is happening.
- c) Cables - Make sure the throttle and all control cables (brakes, clutch, engine stop, lights) operate smoothly and are free of debris and/or damage.
- d) Hoses – Look for leaks on the brake hoses and water/oil cooling system.
- e) Throttle – Smooth operation and return to original position.

L – Lights and electrics:-

- a) Working condition.

O – Oil and other fluids:-

- a) Levels – Check engine oil levels and brake fluid levels, top-up if required.
- b) Leaks – Check and get leaks fixed.

C – Chassis:-

- a) Suspension - Check for smooth operation over the suspension's full range of travel as well as any oil leaks.
- b) Drive components (chain, belt, or driveshaft).

S – Stands:-

- a) Side stand – Ensure side stand switch work and that the spring keeps it up.
- b) Centre stand – Ensure that the spring keeps it in position..

Read your Owner's Manual!



Post-ride inspection

Post-ride inspection is as important as pre-ride inspection. Check for damages and leaks. Regularly clean your motorcycle yourself. Be careful with a high pressure washer when spraying suspension linkages and cleaning the radiators. Lubricate the chain and other working components. Ensure your motorcycle is in the same condition as before the ride. Never take a dirty motorcycle for a ride, it shows lack of maintenance.

If you are not going to ride your motorcycle for a while, then drain petrol from the carburettor and run the engine till it stalls. For longer term preservations, consult your Owner's Manual.

Summary

Always apply ATGATT (**All The Gear All The Time**) and this applies to both the rider and the passenger. It could just save your life or reduce the severity of the impact of the accident. Together with this, maintain your motorcycle and conduct regular pre-ride inspections based upon the usage, but at least once a week.

CHAPTER 4: BASIC RIDING SKILLS

Purpose of the chapter

The purpose of this Chapter is to provide the new rider with practical exercises that he/she can apply to increase the correct use of the primary and secondary controls.

Outcomes of the chapter

The outcomes of the Chapter are:-

- a) To understand the fundamental riding practices that provides the basis for more advanced riding skills and proficiencies.

Introduction

Most people can get on a motorcycle and ride very fast in a straight line until something happens and then they need to react in the right way. Reacting in the right way is but one component that addresses a reactive action. What riders need to instil and master is the right practices that would proactively reduce rider fatigue and the creation of risk situations.

In order to realise the above there are the component of focus, the one being the application of the right techniques and the second one the right application of defensive riding practices supported by advanced techniques and practices.

Riding a motorcycle requires that a person must be able as a minimum to:

- a) Push a motorcycle from point a. to b. This might be from where the motorcycle is parked in the garage to where the rider is going to start his/her journey.
- b) Getting on the motorcycle. Although it sounds simple this is a key exercise.
- c) Once the rider is on the motorcycle he/she must be able to correctly apply the throttle and clutch to pull away.
- d) Once the motorcycle is on the move the rider must be able to change direction and stop the motorcycle safely.
- e) If the motorcycle falls over, the rider must be able to pick the motorcycle up with reduced risk of muscle and/or back injury.
- f) Once the rider has mastered the primary controls he/she must be able to use the secondary controls without looking down.

Riding position

General sitting position

How the rider positions him/herself on the motorcycle is the first most important aspect of riding a motorcycle. The rider needs to know what is required, what it looks like and what works well. Once he/she knows this they should also feel confident in the way that they sit on the motorcycle and the posture that they use.

Good posture on the motorcycle is as important as riding the motorcycle and applying some advanced techniques. The rider needs to become one with the motorcycle. Wrong positioning can lead towards wrong weight placement that can cause instability in using the motorcycle.

Examples of different positioning on the motorcycle are demonstrated below:



Too upright with very stiff arms



Too aggressive with arms up like a motocross rider



Too far back – weight off the centre of the motorcycle



Wrong feet placement - Feet away from the controls



Lying down, no control



Common error – looking down instead of ahead at least 12 sec ahead is good practice

A much more relaxed position, back a bit bent forward, looking well ahead provides for a better riding position.



Looking (scanning) ahead, arms more relaxed, back slightly arched forward and in the centre of the motorcycle.

Each student should assume this position on his/her motorcycle.

Hand positions

The two hands must be on the handle bars under all circumstances. Left hand on the left side and right hand on the right side.

- a) **Left hand** – The left hand is used to operate the clutch as well as the following secondary controls; left/right indicator, horn, flasher, high and low beam and the hazards. The clutch must be slowly released to cause the motorcycle to move forward from a stand-still position. It must not suddenly be released the moment that the motorcycle begins to move.
- b) **Right hand** – The right hand controls the throttle and the front brake. It is also used for pushing the starter button or for cutting the engine using the emergency cut-off switch. Effective throttle control requires the throttle power to be rolled-on and rolled-off. The front brake is used by squeezing the front brake to the required level that is required. The front brake should not be grabbed under any circumstances as this will cause a front wheel lock-up.

Gloves should be worn under all circumstances. For demonstration purposes the glove is off to indicate the hand and finger positions.

Left hand



Avoid using all four fingers



Use one or two fingers to operate the clutch

Right hand



Avoid using all four fingers



Use one or two fingers to operate the front break

By using all four fingers, either for the clutch or the front brake results in the following:

- Handle bar is not properly held onto. The thumb alone cannot hold the handlebar effectively, for instance if the rider hits a pot hole.
- Rider gets in habit of not covering the clutch and front brake at all times, specifically if riding in areas where the immediate use of the brake and/or clutch can make a difference.
- If the rider uses four fingers the rider tends to grab the clutch and grab the brake instead of applying the right amount of power required.
- Time is wasted between opening hand and grabbing the lever. As the Hurt study indicated, there is less than two second between being aware of and responding in the right way.

Getting used to this style could save your life! Each student must practice on his/her motorcycle the use of two and/or one finger.

Feet position

The feet must be positioned on the foot pegs most of the time. The right foot on the right hand side and the left foot on the left hand side.

- Left foot** – The left foot is used to operate the gear shifter/lever.
- Right foot** – The right foot is used to operate the rear brake lever. The rear brake should in most cases be used together with the front brake.

Left foot



Avoid – Foot not covering the gear shifter/lever and may be caught in varied objects



Avoid – Foot not covering the gear shifter/lever



Apply – Foot covering the gear shifter/lever. Good for urban commuting between traffic, but may become very tiring.

Right foot



Avoid – Foot not covering the rear brake and may be caught in varied objects



Avoid – Foot not covering the rear brake



Apply – Foot covering the rear brake. Good for urban commuting between traffic, but may become very tiring.

Covering the rear brake at all time may save your life! Students must apply these techniques on their own motorcycles.

General aspects a practical course will cover

In general, a practical rider skills course (not K53) would address the following aspects:

- a) **Rider and bike** – Bike balance, picking up a bike, basic seated position, etc.
- b) **Primary controls** – Throttle, clutch, rear brake, front brake and gearing.
- c) **Riding skills** – pulling away, stopping, turning, changing directing, etc.

CHAPTER 5: STREET SURVIVAL SKILLS

Purpose of the chapter

The purpose of this Chapter is to increase the awareness of the risks of motorcycling and the applicable defensive and advanced street riding skills.

Outcomes of the chapter

The outcomes of the Chapter are:-

- a) To understand the causes and effects of motorcycle accidents.
- b) To understand the 10 rules based upon the HURT study.
- c) To understand defensive riding practices.
- d) To understand the practical application of defensive riding practices.

Introduction

The fact that a rider has formally acquired a licence to use a specific type of motorcycle does not ensure that he will be free of the risks associated with riding on public roads. Riding or surviving on public roads require that a rider has mastered the basic motorcycling techniques but also that he/she gains as much of the right experience as possible whilst applying defensive riding principles and practices.

These more advanced practices need to be acquired and practices. Reading and/or hearing about it is not enough. In this regard the attendance of formal training, growing through the levels of competencies provided is key.

HURT Study

The HURT study¹, conducted under the leadership of the researcher Harry Hurt (from which the study gets its name), was published in 1981. The intent of the study was to determine the causes and effects of motorcycle accidents. The study investigated almost every aspect of 900 motorcycle accidents in the Los Angeles area under the period and in addition analysed 3,600 motorcycle traffic accident reports in the same geographic area. It provides insight into safer riding practices.

A summary of the findings of the report was published and one such summary is found <http://www.webbikeworld.com/Motorcycle-Safety/Hurt-study-summary.htm>. "Throughout the accident and exposure data there are special observations which relate to accident and injury causation and characteristics of the motorcycle accidents studied. These findings are summarized as follows:-

- a) **Approximately three-fourths of these motorcycle accidents involved collision with another vehicle, which was most usually a passenger automobile.**
- b) Approximately one-fourth of these motorcycle accidents were single vehicle accidents involving the motorcycle colliding with the roadway or some fixed object in the environment.
- c) Vehicle failure accounted for less than 3% of these motorcycle accidents, and most of those were single vehicle accidents where control was lost due to a puncture flat.

¹ *Motorcycle Accident Cause Factors and Identification of Countermeasures, Volume 1: Technical Report, Hurt, H.H., Ouellet, J.V. and Thom, D.R., Traffic Safety Center, University of Southern California, Los Angeles, California 90007, Contract No. DOT HS-5-01160, January 1981 (Final Report)*

- d) **In the single vehicle accidents, motorcycle rider error was present as the accident precipitating factor in about two-thirds of the cases, with the typical error being a slide-out and fall due to over-braking or running wide on a curve due to excess speed or under-cornering.**
- e) Roadway defects (pavement ridges, potholes, etc.) were the accident cause in 2% of the accidents; animal involvement was 1% of the accidents.
- f) **In the multiple vehicle accidents, the driver of the other vehicle violated the motorcycle right-of-way and caused the accident in two-thirds of those accidents.**
- g) **The failure of motorists to detect and recognize motorcycles in traffic is the predominating cause of motorcycle accidents.** The driver of the other vehicle involved in collision with the motorcycle did not see the motorcycle before the collision, or did not see the motorcycle until too late to avoid the collision.
- h) Deliberate hostile action by a motorist against a motorcycle rider is a rare accident cause. The most frequent accident configuration is the motorcycle preceding straight then the automobile makes a left turn in front of the oncoming motorcycle.
- i) **Intersections are the most likely place for the motorcycle accident, with the other vehicle violating the motorcycle right-of-way, and often violating traffic controls.**
- j) Weather is not a factor in 98% of motorcycle accidents.
- k) **Most motorcycle accidents involve a short trip associated with shopping, errands, friends, entertainment or recreation, and the accident is likely to happen in a very short time close to the trip origin.**
- l) The view of the motorcycle or the other vehicle involved in the accident is limited by glare or obstructed by other vehicles in almost half of the multiple vehicle accidents.
- m) **Conspicuity of the motorcycle is a critical factor in the multiple vehicle accidents, and accident involvement is significantly reduced by the use of motorcycle headlamps (on in daylight) and the wearing of high visibility yellow, orange or bright red jackets.**
- n) Fuel system leaks and spills were present in 62% of the motorcycle accidents in the post-crash phase. This represents an undue hazard for fire.
- o) The median pre-crash speed was 29.8 mph, and the median crash speed was 21.5 mph, and the one-in-a-thousand crash speed is approximately 86 mph.
- p) The typical motorcycle pre-crash lines-of-sight to the traffic hazard portray no contribution of the limits of peripheral vision; more than three-fourths of all accident hazards are within 45deg of either side of straight ahead.
- q) **Conspicuity of the motorcycle is most critical for the frontal surfaces of the motorcycle and rider.**
- r) Vehicle defects related to accident causation are rare and likely to be due to deficient or defective maintenance.
- s) Motorcycle riders between the ages of 16 and 24 are significantly overrepresented in accidents; motorcycle riders between the ages of 30 and 50 are significantly underrepresented. Although the majority of the accident-involved motorcycle riders are male (96%), the female motorcycle riders are significantly overrepresented in the accident data.
- t) **Motorcycle riders with previous recent traffic citations and accidents are overrepresented in the accident data.**
- u) **The motorcycle riders involved in accidents are essentially without training; 92% were self-taught or learned from family or friends. Motorcycle rider training experience reduces accident involvement and is related to reduced injuries in the event of accidents.**
- v) **More than half of the accident-involved motorcycle riders had less than 5 months experience on the accident motorcycle, although the total street riding experience was almost 3 years. Motorcycle riders with dirt bike experience are significantly underrepresented in the accident data.**

- w) **Lack of attention to the driving task is a common factor for the motorcyclist in an accident.**
- x) **Almost half of the fatal accidents show alcohol involvement.**
- y) Motorcycle riders in these accidents showed significant collision avoidance problems. Most riders would over-brake and skid the rear wheel, and under-brake the front wheel greatly reducing collision avoidance deceleration. The ability to countersteer and swerve was essentially absent.
- z) **The typical motorcycle accident allows the motorcyclist just less than 2 seconds to complete all collision avoidance action.**
- aa) Passenger-carrying motorcycles are not overrepresented in the accident area.
- bb) The driver of the other vehicles involved in collision with the motorcycle are not distinguished from other accident populations except that the ages of 20 to 29, and beyond 65 are overrepresented. Also, these drivers are generally unfamiliar with motorcycles.
- cc) **The large displacement motorcycles are underrepresented in accidents but they are associated with higher injury severity when involved in accidents.**
- dd) Any effect of motorcycle colour on accident involvement is not determinable from these data, but is expected to be insignificant because the frontal surfaces are most often presented to the other vehicle involved in the collision.
- ee) Motorcycles equipped with fairings and windshields are underrepresented in accidents, most likely because of the contribution to conspicuity and the association with more experienced and trained riders.
- ff) Motorcycle riders in these accidents were significantly without motorcycle license, without any license, or with license revoked.
- gg) **Motorcycle modifications such as those associated with the semi-chopper or cafe racer are definitely overrepresented in accidents.**
- hh) The likelihood of injury is extremely high in these motorcycle accidents - 98% of the multiple vehicle collisions and 96% of the single vehicle accidents resulted in some kind of injury to the motorcycle rider; 45% resulted in more than a minor injury.
- ii) **Half of the injuries to the somatic regions were to the ankle-foot, lower leg, knee, and thigh-upper leg.**
- jj) Crash bars are not an effective injury countermeasure; the reduction of injury to the ankle-foot is balanced by increase of injury to the thigh-upper leg, knee, and lower leg.
- kk) **The use of heavy boots, jacket, gloves, etc., is effective in preventing or reducing abrasions and lacerations, which are frequent but rarely severe injuries.**
- ll) Groin injuries were sustained by the motorcyclist in at least 13% of the accidents, which typified by multiple vehicle collision in frontal impact at higher than average speed.
- mm) **Injury severity increases with speed, alcohol involvement and motorcycle size.**
- nn) **Seventy-three percent of the accident-involved motorcycle riders used no eye protection, and it is likely that the wind on the unprotected eyes contributed in impairment of vision which delayed hazard detection.**
- oo) **Approximately 50% of the motorcycle riders in traffic were using safety helmets but only 40% of the accident-involved motorcycle riders were wearing helmets at the time of the accident.**
- pp) **Voluntary safety helmet use by those accident-involved motorcycle riders was lowest for untrained, uneducated, young motorcycle riders on hot days and short trips.**
- qq) **The most deadly injuries to the accident victims were injuries to the chest and head**
- rr) **The use of the safety helmet is the single critical factor in the prevention of reduction of head injury; the safety helmet which complies with FMVSS 218 is a significantly effective injury countermeasure.**

- ss) Safety helmet use caused no attenuation of critical traffic sounds, no limitation of precrash visual field, and no fatigue or loss of attention; no element of accident causation was related to helmet use.
- tt) FMVSS 218 provides a high level of protection in traffic accidents, and needs modification only to increase coverage at the back of the head and demonstrate impact protection of the front of full facial coverage helmets, and insure all adult sizes for traffic use are covered by the standard.
- uu) **Helmeted riders and passengers showed significantly lower head and neck injury for all types of injury, at all levels of injury severity.**
- vv) **The increased coverage of the full facial coverage helmet increases protection, and significantly reduces face injuries.**
- ww) There is not liability for neck injury by wearing a safety helmet; helmeted riders had less neck injuries than unhelmeted riders. Only four minor injuries were attributable to helmet use, and in each case the helmet prevented possible critical or fatal head injury.
- xx) Sixty percent of the motorcyclists were not wearing safety helmets at the time of the accident. Of this group, 26% said they did not wear helmets because they were uncomfortable and inconvenient, and 53% simply had no expectation of accident involvement.
- yy) Valid motorcycle exposure data can be obtained only from collection at the traffic site. Motor vehicle or driver license data presents information which is completely unrelated to actual use.
- zz) Less than 10% of the motorcycle riders involved in these accidents had insurance of any kind to provide medical care or replace property.

10 Safer riding practices based upon the Hurt Study

Suggested riding practices based upon the HURT Study:

- a) **Rule 1:** Understand safe riding practices and regularly practice these in a safe area. This includes safe cornering, emergency braking, swerving, etc. This includes the attendance of formal training courses, such as this course.
- b) **Rule 2:** Drive defensively; expect the unexpected from each and every other road user.
- c) **Rule 3:** Make yourself and the motorcycle as visible as possible through the use of bright and reflective colours, head lights and motorcycle positioning.
- d) **Rule 4:** Be more cautious at intersections where cars may violate traffic controls, skipping red robots.
- e) **Rule 5:** Short trips require just as much concentration and dedication as long trips.
- f) **Rule 6:** Stay within the rules of the road and comply with traffic ordinances.
- g) **Rule 7:** Be more precautious during first 5 months of first time motorcycling whether a real first timer or someone that has taken a break for a long duration.
- h) **Rule 8:** Motorcycling is a full time focus on the task at hand, do not get distracted or ride when you are distracted.
- i) **Rule 9:** Always apply to ATGATT.
- j) **Rule 10:** Respect yourself, your motorcycle, your equipment, your passengers (if applicable) and other road users.

Who are the most at risk?

Whereas the HURT study found that “motorcycle riders between the ages of 16 and 24 are significantly overrepresented in accidents; motorcycle riders between the ages of 30 and 50 are significantly underrepresented. Although the majority of the accident-involved motorcycle riders

are male (96%), the female motorcycles riders are significantly overrepresented in the accident data”.

However, in the last few years this picture has changed. It is found more and more that the risk age has moved from 16 to 14 to 40+. In some countries there is a drive to focus on the “older” motorcyclist in terms of training. In some circles people aged 50+ driving cars are perceived to be “older” people whilst motorcycle riders aged 40+ is perceived to be the “older” people.

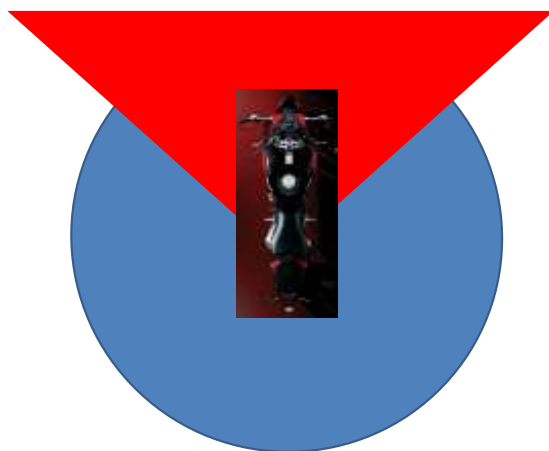
The main contributing factor to this is that most of the riders aged 40+ used to ride many years ago at school with 50cc motorcycles and then stopped riding for many years to study, start the family, run a business and then reach economic readiness to afford a motorcycle. The motorcycle of choice is mostly a large capacity (600cc plus) superbike. Over the years the experience and riding skills have rusted whilst the motorcycles got more advanced and faster. The resultant effect is a mismatch which increases the risk.

The above is supported by the following data (source: Ride Hard Ride Smart – Ultimate Street Strategies for advanced motorcyclists – Pat Hahn, 2004):

Year	Dominant Age	Year	Dominant Age	Year	Dominant Age
1978	21 – 29	1986	25 – 35	1994	32 – 43
1979	21 – 30	1987	25 – 36	1995	33 – 44
1980	21 – 30	1988	26 – 38	1996	34 – 45
1981	21 – 30	1989	27 – 39	1997	36 – 45
1982	21 – 31	1990	28 – 39	1998	36 – 47
1983	23 – 32	1991	29 – 40	1999	36 – 48
1984	24 – 33	1992	30 – 41	2000	36 – 48
1985	25 - 34	1993	31 - 42		

Primary collision areas

The Hurt study, based upon their research, indicated that 77% of all danger will come from the 10, 11, 12, 1 and 2 o’clock position.



Therefore the rider should ensure that:

- a) Almost all attention (75%) is provided towards this area.

- b) The visibility towards oncoming traffic is increased as well as visibility towards vehicles being passed or followed.
- c) Intersections are approached with the greatest caution.

Defensive riding practices

SIPDE

SIPDE is the abbreviation for; **S** - Scan for potential problems, **I** - Identify problems, **P** - Predict what might happen, **D** - Decide on action, and **E** - Execute your best option.

S – Scan:-

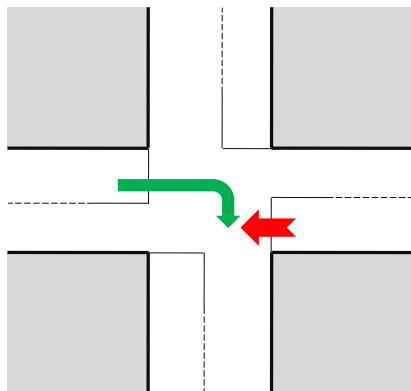
- a) Look well ahead.
- b) Focus 75% of attention in the 10 to 2 o'clock position.
- c) Check blind spot.
- d) Check rear view mirrors.

I – Identify problems:-

- a) **Oncoming traffic** that may turn right in front of you.
- b) **Traffic** coming from the left and right.
- c) **Traffic** approaching from behind or stationary vehicles about to pull away.
- d) **Intersections**
- e) **Dangerous** road conditions.
- f) **Pedestrians**, specifically jail walkers and kids.
- g) **Animals**, specifically dogs.
- h) **Construction work**.

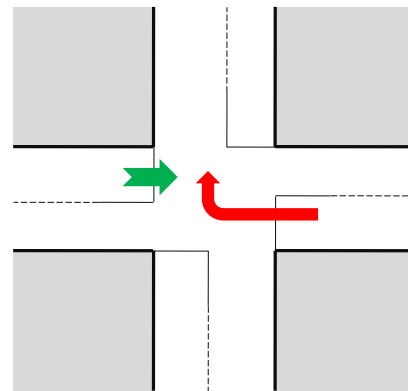
P – Predict what may happen:-

Intersection - Scenario A

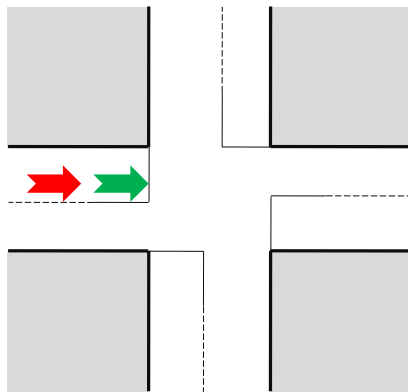


Intersection - Scenario C

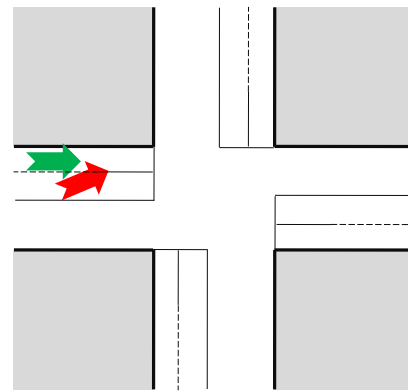
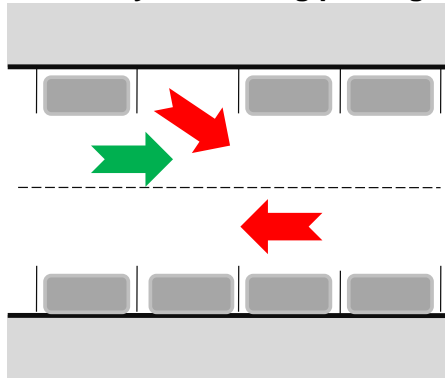
Intersection - Scenario B



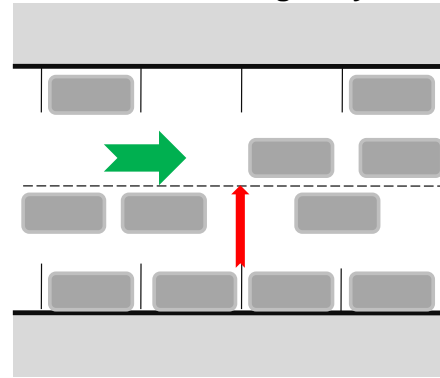
Intersection - Scenario D



Stationary car leaving parking bay



Pedestrian crossing busy street



D – Decide on action.

- If this happens, then...
- If that happens, then...
- Give thought as to the “space” cushion to execute any manoeuvre. Allow for reaction time. Keep in mind that at 120km/h you are moving as a rate of 37metres per second.

E – Execute your best option.

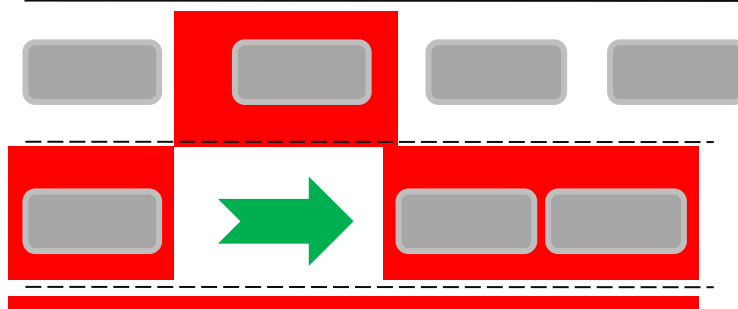
- Be ready to execute when required.
- Communicate you intentions, look, use indicators, tap the rear brake so that the brake light comes up instantly. The latter draws more attention than a consistently glowing brake light.
- Adjust your speed by either going faster or slower.
- Change direction if possible.
- Separate braking from swerving if possible.
- Apply one action at a time and determine the relative effect thereof.

This process is repeated through-out the whole riding experience.

Danger zones around vehicles

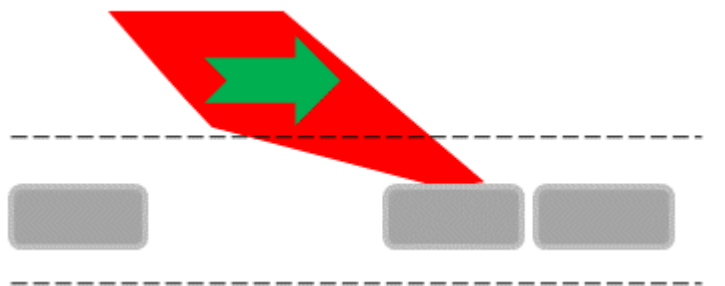
There are generally three zones around a vehicle:

Danger zone



Although this is safer, it still poses a high risk to the rider, specifically during dense traffic periods.

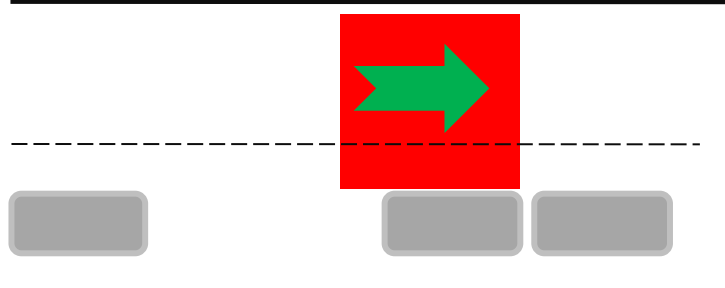
Blind zone (spot)



The blind spot is a high risk area. With increased speed the rider can quicker move into the blind spot of a motorist without realising it.

Be on the lookout of cars that may change lanes whilst you move into or whilst in this spot.

Suicide zone



The chances of being able to avoid a collision are very low when a vehicle suddenly decides to change lanes and the motorcyclist is next to the vehicle.

It is even riskier if the rider is in the right hand-side lane with oncoming traffic.

Visibility

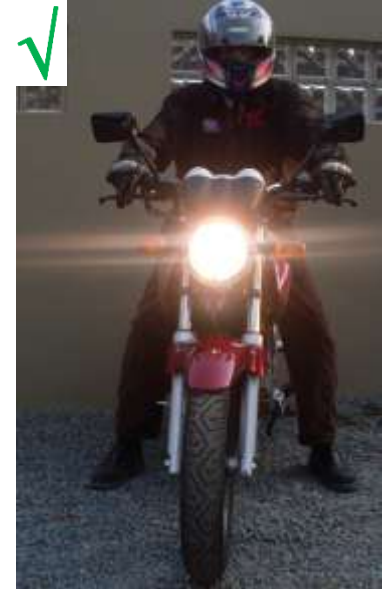
The HURT study indicated that “conspicuity of the motorcycle is a critical factor in the multiple vehicle accidents, and accident involvement is significantly reduced by the use of motorcycle headlamps (on in daylight) and the wearing of high visibility yellow, orange or bright red jackets”.



- a) Dark clothes.
- b) No headlight.



- a) Dark clothes.
- b) Low beam headlight.



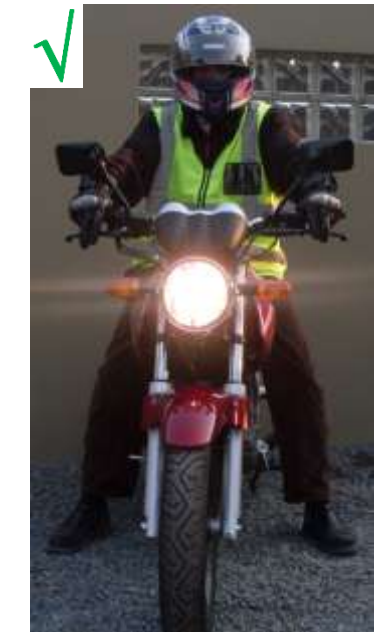
- a) Dark clothes.
- b) High beam headlight.



- a) Headlight off.
- b) Dark clothes.
- c) Reflective vest.



- a) Low beam.
- b) Dark clothes.
- c) Reflective vest.



- a) High beam.
- b) Dark clothes.
- c) Reflective vest.

There are also various views in terms of using the high beam. Some suggest that the low beam should be used so that the rider may still use the flasher in day time. At night the normal low beam as for cars are applicable.

Warning – What motorcycle riders tend to forget is that whilst they can ride between cars in low light and after dark and can see very well, the same is not true for car drivers that can only see lights in the rear view mirror. Drivers find it difficult to distinguish between car lights and

motorcycle lights in low lights or at night. The risk is increased if the motorcycle is doing unnecessary high speeds. This is a risky practice.

Keeping your distance

The best protection a motorcycle rider can have is distance — a “cushion of space” — all around your motorcycle. If someone else makes a mistake, distance permits you:

- a) Time to react.
- b) Space to manoeuvre.

The HURT study found that “the typical motorcycle accident allows the motorcyclist just less than 2 seconds to complete all collision avoidance action”.

If one considers that at 120 km/h a motorcycle moves within one second 37 meters then it does not allow for much room if one is too close to a vehicle in front of you.

Keeping the right distance also allows for enough space for braking and any other collision avoiding action. The distance to safely stop is also influenced by the correct use of both brakes.

Warning – Motorcycles riding together may also follow too closely to each other and pose a serious risk if there is not enough space to manoeuvre.

Being seen

A motorcycle rider must always try to position him/herself so that they fill the mirror of the car in front of them. This may require selecting the most useable lane position.



- a) Limited visibility if too close.
- b) Headlight not visible.
- c) No reflective vest.



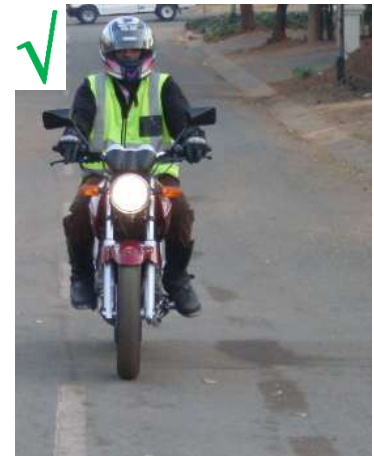
- a) This placement is important during peak hour traffic.
- b) Always use the headlight.
- c) Use a reflective vest.

Lane positioning

In some ways the size of the motorcycle can work to your advantage. Each traffic lane gives a motorcycle three paths of travel. Your lane position should:

- a) Increase your ability to see and be seen.
- b) Avoid other's blind spots.

- c) Avoid surface hazards.
- d) Protect your lane from other drivers.
- e) Communicate your intentions.
- f) Avoid wind blast from other vehicles.
- g) Provide an escape route.



Being followed (tailgating)

Speeding up to lose someone following too closely only ends up with someone tailgating you at a higher speed. A better way to handle tailgaters is to get them in front of you. When someone is following too closely, change lanes and let them pass. If you can't do this, slow down and open up extra space ahead of you to allow room for both you and the tailgater to stop. This will also encourage them to pass.

Passing and/or being passed

Passing and being passed by another vehicle is not much different than with a car. However, visibility is more critical. Be sure other drivers see you, and that you see potential hazards.

- a) **Passing** - Ride in the right portion of the lane at a safe following distance to increase your line of sight and make you more visible. Signal and check for oncoming traffic. Use your mirrors and turn your head to look for traffic behind. When safe, move into the right lane and accelerate. Select a lane position that doesn't crowd the car you are passing and provides space to avoid hazards in your lane. Ride through the blind spot as quickly as possible. Signal again, and complete mirror and head checks before returning to your original lane and then cancel signal.
- b) **Being passed** - When you are being passed from behind or by an oncoming vehicle, stay in the centre portion of your lane. Riding any closer to the vehicle that is passing you could put you in a hazardous situation.

Beware of being hit by:-

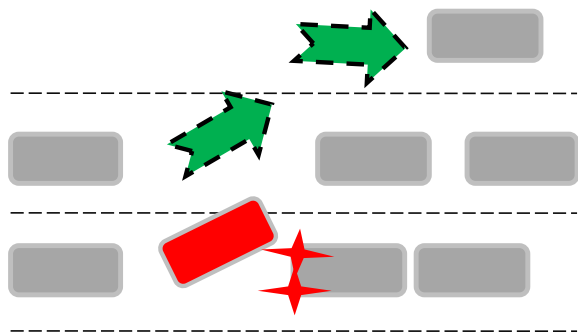
- a) **The other vehicle** - A slight mistake by you or the passing driver could cause a sideswipe.
- b) **Extended mirrors** - Some drivers forget that their mirrors hang out farther than their fenders.
- c) **Objects thrown from windows** - Even if the driver knows you're there, a passenger may not see you and might toss something on you or the road ahead of you.

- d) **Blasts of wind from larger vehicles** – Blasts can affect your control. You have more room for error if you are in the middle portion when hit by this blast than if you are on either side of the lane. Do not move into the portion of the lane farthest from the passing vehicle. It might invite the other driver to cut back into your lane too early.

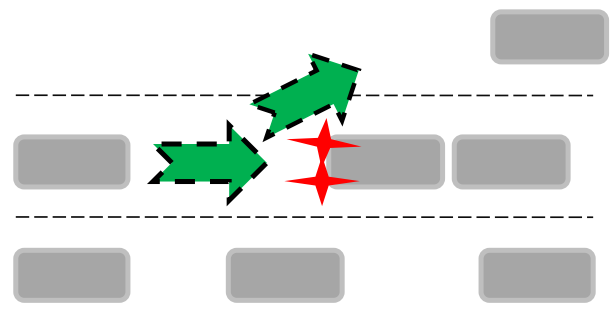
Collision avoidance

If at all possible, separate braking and swerving!

Swerve THEN brake



Brake THEN swerve



Studies show that most collision-involved riders that:-

- Did not separate braking from swerving or did not choose swerving when it was appropriate.
- Did not use enough front brake and used too much rear brake.
- Were untrained riders.

Always use both brakes at the same time to stop! The front brake can provide 70% or more of the potential stopping power.



Rear brake only!



Front brake only!



Both brakes!



If you must stop quickly while turning or riding a curve, the best technique is to straighten the motorcycle upright first and then brake. However, it may not always be possible to straighten the motorcycle and then stop.

Reading and handling dangerous surfaces

Dangerous surfaces could be:-

- Oil spots, very applicable to toll gates and petrol filling stations.
- Sand spots, normally found at driveway entrances and intersections. Oil is also a problem at the start of the rainy season.
- Other, debris on the road.



When approaching dangerous surfaces:-

- Reduce speed.
- Avoid sudden moves.
- Use both brakes.
- Move to the center of a lane.
- Watch for oil spots.
- Look for dirt and gravel.
- Side wind effect when passing cars and other man made road creations.

Rear safety glances

Rear safety glances is compulsory and saves lives. Always make sure that you are aware what is happening behind you before you execute a movement. This could apply when:

- Standing still and wanting to turn around.
- Changing lanes.



Summary

Applying the practices of **Scan**, **Identify**, **Predict**, **Decide** and **Execute** continuously could reduce the risk of getting hurt whilst riding.

CONCLUSION

Responsible riders continuously seek opportunities to learn more as well as to improve existing riding skills and proficiencies.

This course is but the start in growing to the next level.