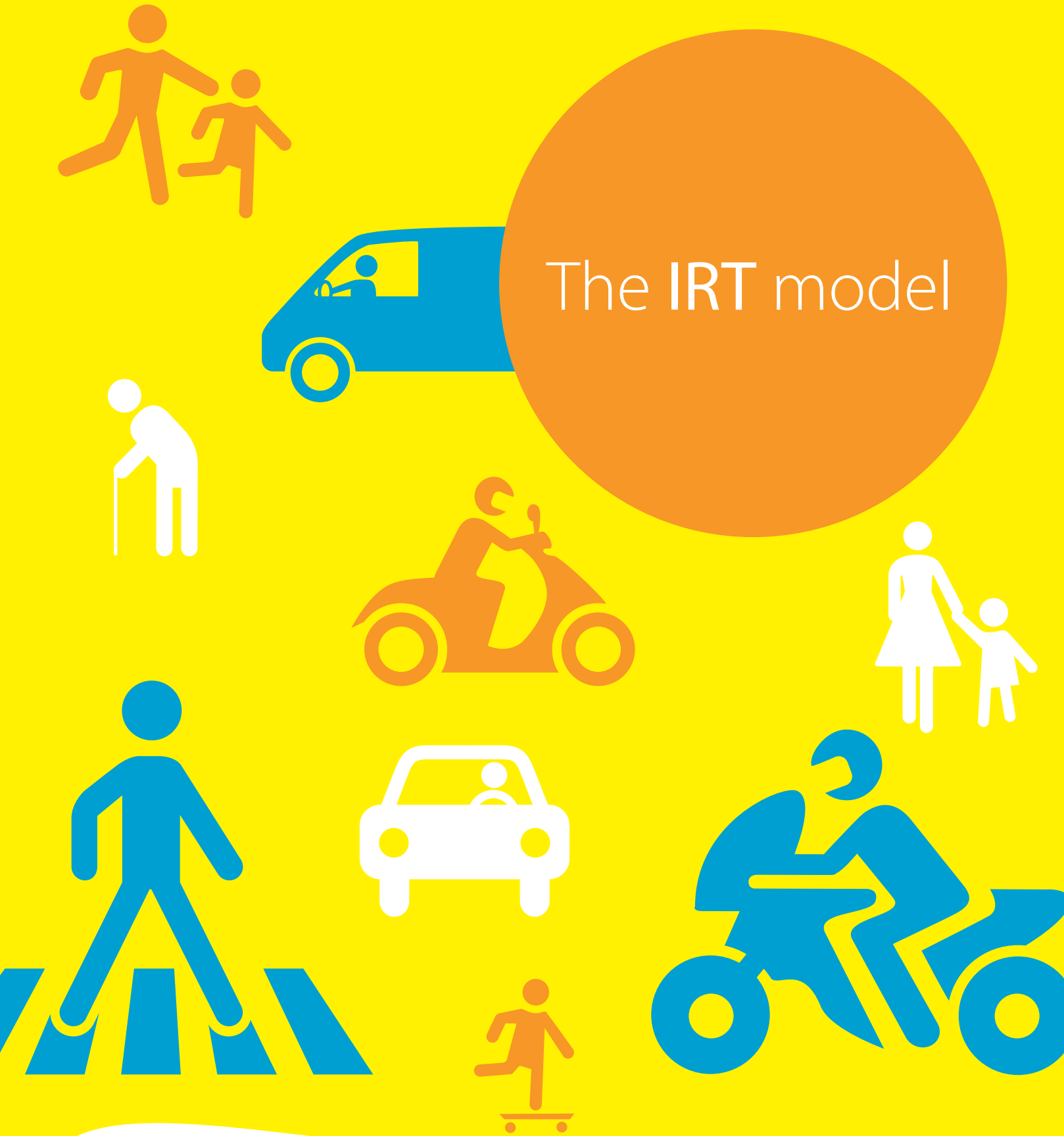

The **IRT** model

EUROPEAN INITIAL RIDER TRAINING PROGRAMME

A project from
the Federation
of European Motorcyclists'
Associations

ON THE **MOVE**
for safer roads in Europe

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Developing a European Approach to the Initial Training of Motorcyclists

The IRT model European initial rider training programme was developed through the IRT Project, which was jointly funded by the Directorate-General for Energy and Transport of the European Commission, the Federation of European Motorcyclists' Associations (FEMA), Fédération Internationale de Motocyclisme (FIM), the Association des Constructeurs Européens de Motocycles (ACEM) and Vägverket, the Swedish national road traffic authority.

The Developing a European Approach to the Initial Training of Motorcyclists Project,TREN-SUB-2003-S07.30333, known as the Initial Rider Training Project, has considered the widely acknowledged problems of pre-licence rider training in Europe being widely variable in quality and or availability.

The IRT Project has addressed one of the main problems affecting the quality of initial rider training, namely the concentration on machine control skills to the detriment of hazard awareness and rider attitude and behaviour. The relationship between newly qualified rider overconfidence, failing to recognise hazards and take risks and pre licence training that has overly focussed on machine control skills, has been recognised for a long time. Notwithstanding this the IRT Supervisory Board are unaware of any previous serious or structured endeavours to develop a pre-licence training programme that even attempts, let alone achieves a balance between machine control and hazard awareness.

This, we believe, the IRT Project has successfully done. Working with acknowledged experts covering a wide range of motorcycling, academic and road safety interests, the resulting IRT model European initial rider training programme can deliver machine controls skills in the context of their relevance to the hazardous environment of today's roads, with an understanding of the rider having a primary responsibility for his or her own safety. The IRT Supervisory Board are sure that the IRT model European programme will offer a real improvement to much of the pre licence training presently available to riders within the European Union.

The modular structure and pedagogical approach of the IRT model European initial rider training programme can also offer a real improvement to the availability of initial rider training. Whilst it has been primarily developed to be used in a training environment where the rider is paying for the services of the instructor, in can also be utilised in a range more informal training situations. It will offer real assistance to the family member or friend, or the motorcycle club or safety organisation, seeking to impart good, safe riding skills, often in circumstances where professional training is not available or is of poor quality.

In support of these main aims the IRT Project has considered the very exciting and innovative area of e-Coaching and the contribution that it could make to improving initial rider training, particularly in the context of exposing riders to virtual hazardous situations without putting them in any way at risk. The work undertaken by the IRT Supervisory Board has concluded that an e-Coaching approach as envisaged within this Final Technical Implementation Report and the report of the Hypermedia Unit of Tampere University of Technology, does have the potential to make a major contribution to the safety of riders of motorcycles and scooters. The IRT Supervisory Board believes that it is particularly important that their work on this question is followed up and see the European Commission as possible being the only institution able to so do.

Riding a motorcycle or scooter offers freedom and flexibility for many people. It is fun and can be exciting. It has to be recognised however that the rider is vulnerable and even if the rider is not at fault, as is the case in the majority of accidents, without the benefits of the range of passive safety measure available to drivers they are more likely to be hurt.

The IRT model European initial rider training programme in its present Theoretical, Machine control and Traffic interface three element form, offers to the new rider the best chance of meeting the challenges and recognising and managing the hazards that will be met. The addition of a fourth e-Coaching element could further and significantly improve the situation.

The conclusion and recommendations of the IRT Project are in no way seeking to advance any vested interests. Their intent is only to make future riders of motorcycles and scooters better trained and safer.

Managing the IRT Project

A Supervisory Board was established and has met four times. It met in Brussels on the 18th and 19th January and the 22nd and 23rd March and in Paris on the 3rd and 4th October, 2005 and again in Brussels on the 5th March 2007.

Members of the IRT Supervisory Board, in alphabetical order:

- **Dr. Hans-Yngve Berg**, driver education specialist, Vägverket, Sweden.
- **Jacques Compagne**, Secretary General of the Association des Constructeurs Européens de Motocycles (ACEM), Belgium.
- **Achilles Damen**, public prosecutor and chairman of the Fédération Internationale de Motocyclisme (FIM) Commission for Mobility, Transport, Road Safety and Public Policy, The Netherlands.
- **Aline Delhaye**, General Secretary of the Federation of European Motorcyclists' Associations (FEMA), Belgium.
- **Professor Erik Duval**, Catholic University of Leuven, head of the research unit on hypermedia and databases and President of the Ariadne Foundation, Belgium.
- **Dr. Marie-Axelle Granié**, head of research in the psychology of development, Institut National de Recherche sur les Transports et leur Sécurité, France.
- **Ian Lee**, General Manager of the British Motorcyclists Federation's Rider Training Scheme, United Kingdom.
- **Brane Legan**, Police Officer, International safety riding and driving instructor, responsible for rider and driver training at Slovenian Police Academy, chief instructor for safety, riding and driving at the Automobile and Motorcycle Association of Slovenia.
- **Marc O'Loideoin**, Senior Instructor Star Rider Training Scheme, Ireland.
- **Antonio Perlot**, Public Affairs Manager of the Association des Constructeurs Européens de Motocycles (ACEM), and former General Secretary of FEMA, Belgium.

- **Dr. Pekka Ranta**, Senior Researcher, Hypermedia Unit, Tampere University of Technology, Finland.
- **Roger Renoy**, head of the National Police rider and driver training academy, Belgium.
- **Filip Sergeys**, responsible for training and simulation, Honda Europe, Belgium.
- **Peter Smirz**, Vice- President of Internationaler Verbaund für Verkehrserziehung (IVV) and Director of a leading rider and driver training school, Austria.

In addition to the above permanent members the following persons have also participated in meetings of the Supervisory Board:

- **Robin Cummins**, former Chief Driving Examiner, Driving Standards Agency, United Kingdom.
- **Duarte Forjaz**, rider education, Federaçao Nacional de Motociclismo, Portugal.
- **Silvio Manicardi**, Senior Manager, Honda Europe Motorcycles, Italy.
- **Trevor Wedge**, Chief Driving Examiner, Driving Standards Agency, United Kingdom.

The IRT model European initial rider training programme

The structure and presentational approach of the model European initial rider training programme was conceived by the IRT Project Coordinator, Robert Tomlins. It was developed in detail by the IRT Instructors' working group, comprising of two senior National police rider instructors, Roger Renoy (Belgium) and Brane Legan (Slovenia) and three leading commercial rider instructors, Peter Smirz (Austria, Vice-President of IVV, the international rider and driver instructors' organisation), Marc O'Loideoin (Ireland) and Ian Lee (United Kingdom), together with the IRT Project Coordinator, who also wrote this manual.

Essential elements for initial rider training

The IRT Project was required to identify the essential elements of a model European initial rider training programme. It was recognised that there was a need to develop a structure for the model European initial rider training programme and to also develop a format and style for the presentation of the elements and aspects of it.

This structure has four elements: *Theoretical; Machine control; Traffic interface and e-Coaching*. Within each of these elements the essential aspects have been identified. The first three form the basis for a model European initial rider training programme. The Supervisory Board believes that as such they would be a comprehensive, cohesive and cost-effective European initial rider training initiative. Importantly all the elements address the important issues of hazard awareness and avoidance and rider attitude and behaviour.

Development of the fourth element, e-Coaching, is dependent on the acceptance of the conclusions reached by the IRT project and the acceptance of the recommendations contained in the Final Technical Implementation Report by the European Commission.

A modular approach for progressive access

The advantages of a modular approach seemed to be particularly interesting in the context of the progressive access approach to powered two-wheeler licensing contained within the Second and Third European Driving Licences Directives.

Accordingly, and as can be seen in Figure 1, the various aspects of the elements that are appropriate to the training needs for a particular A sub-category licence are identified. Applied in the most logical form, this modular approach would allow a rider with a lower sub-category of licence, say A1, wishing to obtain an A2 or A licence, to only have to be trained on the additional aspects that had not been covered in the A1 training programme.

As the proposal for the Third European Driving Licence Directive progressed through the legislative process it became apparent that its definition of progressive licensing would be a very limited one. In its final form the training requirements specified in Annex 6 to the Directive appear to ignore a rider's previous training and experience. Nonetheless the IRT project partners are hopeful that a review of Annex 6 could result in the logic of the IRT Project's modular approach being reflected in future European legislative requirements. The IRT model European initial rider training programme should remain modular in its structure and as such it would also allow for additional programmes, to meet specific circumstances or needs, to be easily developed. For example a programme for riders who were returning to motorcycling after a long period of not riding a powered two-wheeler could be constructed from the elements and aspects of the IRT model European programme.

AM	1a, 2a, 3, 4a, 4b, 6a, 7, 8	**AM**	1a, 2, 3a, 3d, 4, 5	**AM**	1a, 2, 4a, 4b
A1	1a, 2a, 3, 4a, 4b, 5, 6a, 6b, 7, 8	**A1**	1b, 2, 3b, 3c, 4, 5, 6a, 6b	**A1**	1b, 2, 3a, 3b, 4a, 4b, 5, 6
A1/B	3, 4a, 4b, 5, 6a	**A1/B**	1b, 2, 3b, 3c, 4, 5, 6a, 6b	**A1/B**	1b, 3a, 3b, 4b
A2	1a, 1b, 2a, 2b, 3, 4a, 4b, 5, 6a, 6b, 7, 8	**A2**	1b, 1c, 2, 3b, 3c, 3d, 4, 5, 6a, 6b	**A2**	1b, 2, 3a, 3b, 4a, 4b, 5, 6, 7, 8, 9
A	1a, 1b, 2a, 2b, 3, 4a, 4b, 5, 6a, 6b, 7, 8	**A**	1b, 1c, 2, 3b, 3c, 3d, 4, 5, 6a, 6b	**A**	1b, 2, 3a, 3b, 4a, 4b, 5, 6, 7, 8, 9

Theoretical	**Machine control**	**Traffic interface**
1 Road regulations	1 Machine familiarity	1 Positioning in traffic
a general rules and regulations	a automatic controls	a slower than traffic
b motorway rules and regulations	b manual controls	b at traffic speed
2 Signs and markings	c advanced braking systems	2 Distance
a general signs and markings	2 First movements	3 Curves and bends
b motorway signs and markings	3 Gears, brakes and direction	a right hand
3 Machine dynamics	a automatic gears	b left hand
4 Hazard awareness	b manual gears	4 Anticipation
a other road users	c separate braking systems	a other road users
b environment and infrastructure	d advanced braking systems	b environment and infrastructure
5 Helmets and appropriate clothing	4 Steering and counter-steering	5 Junctions
6 Social responsibilities	5 Low speed manoeuvring	6 Overtaking
a noise	6 Hazard management	7 Motorways
b first aid and accidents	a swerving	8 Group riding
7 Impairment	b emergency braking	9 Journey planning
8 Attitude and behaviour		

1a, 1b, 2a, 2b, 3, 4a, 4b, 5, 7, 8	4, 5, 6a, 6b	1a, 1b, 2, 3a, 3b, 4a, 4b, 5, 6, 7, 8, 9
e-Coaching. Virtual no-risk exposure to hazards and consequences of attitude and behaviour.		

Figure 1: the initial structure matrix of the IRT model European programme showing the relevance of its modular based approach to a progressive licensing system.

Before starting to ride: the Theoretical element of the IRT programme

It is recognised that the theoretical training received by riders varied. Often it required only the need to recognise road signs and markings and know the basic traffic regulations, often without even an explanation of why they are necessary. Rarely did it go beyond and address a range of important issues on which the trainee, hereinafter referred to as the rider, should at least have a basic knowledge and understanding.

Accordingly several theoretical aspects were identified: Road regulations; Road signs and markings; Machine mechanics and dynamics; Helmets and appropriate clothing; Social responsibilities; Impairment; Hazard awareness, Attitude and behaviour. The IRT *Theoretical element* should be to introduce the rider to the IRT model European initial rider training programme and as such should be addressed before commencing the Machine control element and its aspects.

1. Road regulations

This aspect introduces the future rider to the body of road rules and regulations that determine how he or she should ride.

International Treaties and Conventions

The vast majority of the regulations governing public roads, the vehicles upon them and the people using them will have been established through one or another international treaty. Important in this respect are the 1968 United Nations Conventions on Road Traffic and on Road Signs and Signals. Vehicle construction regulations, which cover issues such as how much noise a motorcycle is allowed to make, are established through European Union directives and the United Nations' 1998 Global Harmonisation Agreement.

Theoretical	Machine control	Traffic interface
1 Road regulations	1 Machine familiarity	1 Positioning in traffic
2 Signs and markings	2 First movements	2 Distance and Speed
3 Mechanics and dynamics	3 Gears, brakes and directions	3 Curves and bends
4 Hazard awareness	4 Steering and counter-steering	4 Junctions
5 Helmets and appropriate clothing	5 Low speed maneuvering	5 Overtaking
6 Social responsibilities	6 Hazard management	6 Motorways
7 Impairment		7 Anticipation
8 Attitude and behaviour		8 Riding together
		9 Journey planning

The main benefits for the rider in such arrangements are that he or she is less likely to encounter different rules and regulations when travelling from one country to another.

Why they exist?

Virtually every aspect of riding a motorcycle or scooter on public roads is covered by one or more regulations. They will apply to every aspect of the machine that is being ridden, who can ride it and how it can be ridden and the road system on which it is ridden.

It is helpful for the future rider to understand the reason for these regulations. They exist to manage what is a dangerous environment in which many, many participants have potentially conflicting and hazardous objectives.

Importantly the vast majority of the regulations have been introduced as a consequence of actual problems arising. They are there not to simply stop you doing certain things but because the consequences of so doing have been found to be harmful.

The future rider will need to be aware of and directly comply with many of these regulations. Most of them will be enforceable by law. This means that if the future rider does not comply with them then he or she could be penalised and lose their licence and the right to ride on public roads.

Making it safer

The future rider should appreciate that there are usually real safety reasons for the rules and regulations that he or she will be required to comply with.

For example, speed limits are established taking into account the specific local situation and the associated risks. A pedestrian hit by a car at 30 kph has a better than 90 % chance of surviving. The almost inevitable outcome at 70 kph is a fatality and grieving family and friends.

Similarly regulations prohibiting overtaking exist because either a dip or a bend in the road could hide oncoming traffic or junction from which traffic could suddenly appear.

National road codes

In all of the countries of the European Union it is necessary for a person wishing to obtain an A category licence to pass a Theory test before starting his or her practical training.

The knowledge required to pass such a test is usually contained in a National road or highway code.

It is most important that the future rider realises that the knowledge needed to pass a theory test is an essential foundation for developing the skills and wider knowledge that are needed to ride a motorcycle or scooter safely on today's roads.

2. Signs and markings

This aspect introduces the future rider to the value of the information contained in road signs and markings.

Signs and markings

The future rider will understand that being able to recognise road signs and markings, both by shape and meaning, is an essential pre-requirement to pass a theory test.

Importantly it is information that will provide the rider with constant and in context reminders of the rules and regulations that he or she will have to comply with. This information will also be of value when making judgements regarding what is safe and sensible.

Lines and markings on the road

The future rider should understand that the lines and markings on a road's surface have the same range of authority as the signs at the side of it. Generally unbroken lines indicate a prohibition. They should not be crossed when in the centre and have parking restrictions when at the side of the road. The markings for pedestrian crossings and lanes for buses and cycles are also important.

Significance in the shape

The future rider will come to recognise that the shape of a road sign is generally indicative of its significance.

Round signs are signs that give orders and when they are within a red circle are generally prohibitive.

Triangular signs are signs that give warnings when they are point down they should be complied with, when they are point up they are advisory.

Rectangular signs contain information, often giving directions.

3. Mechanics and dynamics

This aspect introduces the future rider to how a machine works and the need to care for it.

Two gyroscopes

A motorcycle or a scooter behaves and is controlled differently from any other motorised vehicle. This is primarily because when moving its two wheels act as gyroscopes and the faster it goes the stronger is the gyroscopic effect.

Changing the direction of a gyroscope is achieved by exerting force in the opposite direction to that which you want it to go in.

This means that when a motorcycle is moving at 20 or more kilometres an hour, to make it turn to the left forward pressure should be put on the left side of the handlebar. Contrary to expectation and, indeed, what would happen at slower speeds the machine does not alter direction to the right but to the left, the opposite direction to the force that is being exerted.

This is known as counter steering and it will become understood and used by the future rider as he or she learns to control and use the machine.

Checking all is well

The future rider will need to understand that the motorcycles and scooters that he or she will be riding are machines and like all machinery they will need regular checks, maintenance and repair.

The extent to which repairs will be needed will be influenced by the frequency of the checks and maintenance. What can start off a no more than a minor adjustment can, if unattended, end up as a major repair, with high costs and the loss of the use of the machine while they are being done.

The future rider will need to become familiar with a machine's owners' manual. These always contain much useful information and importantly lists which will set out what needs to be checked and maintained and how frequently they should be done.

Notwithstanding the requirements of the owners' manual the future rider should plan to develop the habit of checking the essential features of his or her motorcycle or scooter at least once a week and always before starting on a long journey.

These should always include the operation of the brakes and the condition of their mechanisms and pads or linings, the fork oil seals, the pressure and condition of the tyres, the lubrication and tension of the chain, the level of the engine oil, the condition of the battery and evidence of oil, hydraulic and cooling fluid or fuel leaks.

The future rider should appreciate that a well cared-for machine is unlikely to breakdown, or cause or contribute to an accident.

Slowing and stopping

When it is moving the machine will be able to be slowed or stopped by using its brakes. These are operated by hand and/or foot levers, which force a hard wearing material onto either a disc or drum fixed to the wheels.

Power to the wheels

When the engine is running and a gear or drive is engaged the rear wheel will turn and the machine will go forward. To disconnect the engine from the rear wheel and indeed to select the gear without the engine jumping forward, a device called a clutch is employed.

On machines with automatic transmission the operation of the clutch is automatically linked to the throttle which controls the engine speed.

4. Hazard awareness

This aspect introduces the future rider to the concept of hazard awareness and its importance in learning to ride a motorcycle or scooter well and safely.

Seeing and recognising

The future rider will need to understand that one of the most important skills to be learnt in the process of obtaining an A category licence is that of recognising potentially threatening situations, known as hazard awareness.

Learning and developing this vital skill is dependant on a number of things. Firstly a rider will need to learn where he or she should be looking. Secondly to consciously see what is at that point and, thirdly to recognise one or more factors in the context of their hazard potential and the demands that could be made on the rider.

Having identified a potentially hazardous situation, being able to evaluate the demands and take the appropriate actions to avoid or minimise them will require the future rider to develop an understanding of a number of situations and considerations across a range of circumstances.

Position, speed and distance

The future rider will need to learn that his or her position on the road, the speed at which the machine is travelling and the distance from a road feature or other road users, will all influence his or her ability to recognise and evaluate potentially hazardous situations.

Indeed position, speed and distance will often determine whether a situation will become potentially hazardous and need to be managed as such. Too fast, too close and/or in the wrong position on the road are factors in the majority of road traffic accidents.

Road conditions

The future rider should understand that road conditions will influence his or her ability to ride safely. Firstly its construction, surface and state of repair will all effect the machine and a rider's control of it. Secondly the type of road and the volume and mix of traffic will influence the incidence of potentially hazardous circumstances.

Other road users

Understanding the requirements and likely behaviour of other road users will be essential knowledge for the future rider. Whilst this will never be an exact science a rider can often learn to anticipate how, for example, the driver of a heavy goods vehicle or a bus may behave and adjust position, speed and distance accordingly.

Similarly how pedestrians are likely to behave can be anticipated, particularly when trying to get across a road to catch a bus at a stop. More unpredictable will be children and old people and the future rider will learn that it is often necessary to expect the unexpected.

Weather and lighting

Rain, wind and strong sunlight, to say nothing of snow and ice, can all contribute to the hazards faced by rider, as can reduced visibility, even with the benefits of street lighting.

5. Helmets and appropriate clothing

This aspect introduces the importance of wearing suitable, best affordable, rider protection.

Wearing a helmet

The future rider will undoubtedly understand that wearing a helmet is, with a very few exceptions such as for low speed mopeds, compulsory in all the countries of the European Union.

Even if wearing a helmet were not a legal requirement he or she would still be well advised to always wear one. Wearing a helmet has saved and will continue to save many lives and to reduce injuries.

A rider should understand however that having a helmet on does not make him or her invulnerable. There are limits to the protection it affords. The deceleration forces that occur when the head hits a solid object at 50 or more kilometres an hour, even if the helmet remains intact, are sufficient to damage the rider's brain so that he or she is unlikely to survive. The future rider should never forget this when on a motorcycle or scooter.

Wearing a helmet also offers other benefits. Being hit by an insect at 100 kilometres an hour really does hurt and the effects of rain, cold and noise are all reduced by a good helmet.

Choosing a helmet

The future rider will be spoilt for choice from the range of helmets available. There are however effectively only two main types and two variations.

Firstly there is the integral helmet where the body of the helmet continues in front of the lower face and the riders looks through an aperture covered by a hinged visor. The variation is where the whole of the front of the helmet including the visor can pivot upwards. This makes it easier to put on and to speak to people without removing the whole helmet.

Secondly there is the open face helmet, with or without a visor. Where an open face helmet does not have a visor, goggles or another form of effective eye protection will be needed.

Helmets are generally made from two types of material. A resin reinforced with glass or carbon fibres and polycarbonate plastic. Whatever the rider chooses he or she should ensure that the helmet will not be weakened by painting or putting stickers on it. Always ensure that the helmet has the required CE and national safety markings.

A rider should always choose a helmet that fits correctly and is comfortable. Buying the best helmet that he or she can afford is good advice. However the rider shouldn't be too influenced by super paint schemes. Buying a plain version of a better helmet is better than buying a cheaper one with a cool paint scheme.

Taking an experienced rider with you can help, as can checking on back issues of motorcycle magazines, most of which carry from time to time best helmet surveys. Issues such as noise attenuation, lateral vision, ease of visor operation, weight and ventilation should be considered when choosing.

Seeing clearly

Caring for your visor or goggles is very much in a rider's interest. The maker's recommendation should always be followed when cleaning. If this is not known then plenty of water with washing up liquid, followed by a thorough rinse and drying with a soft cloth.

A heavily scratched visor is extremely dangerous at night and in rain. It should always be replaced.

A visor will mist-up when it is cold or wet and the future rider will need to ensure it is correctly ventilated in these circumstances and that it has been treated with a suitable anti-misting product.

Protecting yourself

The need for a rider to wear appropriate clothing should be obvious. However the future rider will probably have noticed that it is not always apparent. Whilst it may look cool to ride in a t-shirt, shorts and sandals when the weather is warm and the sun is shining, it is in fact a very silly thing to do.

A spill, even at low speeds, can cause painful and sometimes disfiguring injuries. Human skin is simply not designed to withstand the abrasive characteristics of a typical road surface. Even wearing a pair of jeans, a long sleeved shirt and trainers will offer at least a measure of protection and this can be greatly enhanced by wearing clothing specifically designed for riding.

Similar considerations apply when riding in adverse weather conditions. Without suitable jacket, trousers, gloves and boots a rider can become so wet and cold that it can be difficult to safely manipulate the controls.

A rider should always try to buy the best equipment he or she can afford. As when buying a helmet, referring a motorcycle magazine's best buy guide can often provide good advice and give value for money.

Jacket and trousers

Buying a riding suit, with the jacket and trousers separate or in one-piece, will require a lot of consideration on the part of the future rider.

Understanding what will be required of it will help to narrow the wide choice that is available in type, style, weight and material.

The temperature range in which it will be worn should influence the rider's choice of weight and material and whether it has a lining that can be removed. The fit should also be considered in this context and the rider should decide whether he or she would want to wear extra clothing under it.

Fit is also important if the suit has protective panels. Having such protection for the elbows, shoulders, knees and hips won't work if the garment is too large and the protective panels can move about in the event of an accident.

Whether the suit is rain proof or shower proof will depend upon the extent to which the future rider expects to ride in wet conditions and the option of a lightweight rain over suit can be considered.

The advice to buy the best that he or she can afford is good and the future rider should always look for the CE mark, the presence of which should ensure at least a standard of quality and performance.

Gloves and boots

Wearing gloves and footwear that covers the ankle will provide protection in case of an accident. The extent of the protection will depend upon the quality of what is purchased. Again the best that can be afforded is good advice.

Most importantly gloves and boots should be waterproof as even a shower will leave them wet and they can take hours, if not days, to dry out.

Protecting your hearing

As was mentioned in the advice concerning buying a helmet, noise attenuation is an important area of consideration for the future rider.

Cruising at speeds as low as 90 kph can generate noise levels that can permanently damage a rider's hearing. The practice of using earplugs is a good one, particularly if a long journey is being undertaken.

6. Social responsibilities

This aspect introduces the future rider to the need to show due consideration and care for others.

First aid and accidents

The prospective rider should understand that a basic knowledge of first aid knowledge can literally be life saving and that he or she should have, or obtain, this knowledge before learning to ride.

In the event of coming upon an injured motorcyclist the future rider should never attempt to remove the injured rider's helmet, unless properly trained to do so, or move the injured person unless they are in a life-threatening situation. The emergency services should be informed straight away.

Consideration for other road users

Before beginning the experience of learning to ride a motorcycle or scooter, a prospective rider should understand that in today's traffic, no one can ride on, drive on, or cross the road, in isolation.

A rider should always behave in a responsible way, taking into account the needs and likely behaviour of other road users and should appreciate that his or her actions will consequently affect their safety and, of course, his or her own safety.

Pedestrians will require particular care on the part of the future rider. Someone wanting to cross a road may not see a motorcycle or scooter or be able to accurately judge its approaching speed or intention. This particularly applies to the elderly and to children, who can have other, to them more important things, on their mind, such as getting home in time for their favourite television programme or retrieving a ball.

Cyclists also require care and the future rider should understand that whilst they share the road and also have two wheels, their difference in speed and consequent handling characteristics are considerable.

The characteristics of vehicles with four or more wheels will also need to be appreciated by a prospective rider. Large commercial vehicles often have limited vision and a rider should avoid getting into a position where they cannot be easily seen by the driver. Car drivers, with the advantages of anti-lock braking systems and traction control, may not appreciate that a wet road will have a greater limiting effect on the handling characteristic of a motorcycle.

Upsetting the neighbours

The future rider should appreciate that excessive noise from motorcycles and scooters is widely recognised as being one of the most annoying sources of noise.

Whilst many riders like the noise their machine makes, they should always ensure that they ride in a manner that limits its social impact and in no circumstances should they modify their silencer to make more noise or fit an illegal system.

Angry neighbours will support anti-motorcycling legislation.

When it goes wrong

The future rider should understand that not only they will suffer the consequences of a road traffic accident. Whether it is their fault or the fault of another road user. For a mother or husband, learning that a son or wife has been involved in an accident can be devastating experience.

A motorcycle or scooter does not have the benefits of airbags and seatbelts. This the future rider should appreciate with the consequent need to ride in a manner that will avoid the consequences of when it goes wrong.

7. Impairment

This aspect introduces the dangerous effects that alcohol, drugs and medications and also illness and fatigue, can have when riding a motorcycle or scooter.

Fatigue

Tiredness is as big a killer on Europe's roads as both alcohol and drugs together.The future rider should appreciate that even the levels of fatigue likely to be felt after a day's work can effect a rider's awareness and reactions. Add an evenings entertainment or sport and the cumulative effect can be dangerous. Starting a long journey after work is not a good idea.

It is as possible to fall asleep on a motorcycle as it is behind the wheel of a car so when tired the future rider should always stop and take a good rest.

Alcohol and other drugs

A future rider should understand that the taking of any social or recreational drugs will have a negative effect on how well they will be able to ride and will increase the likelihood of being involved in accident.

Alcohol is a major factor in road traffic accidents and is primarily responsible for killing over 15 000 people on Europe's roads each year. Even the amounts allowed within national laws will have an effect on a rider and quite moderate quantities will disproportionately increase the risk of being hurt or worse.

Alcohol will first affect a rider's reactions and then his or her judgement and increasing quantities will also effect on balance and co-ordination. To put this into a perspective as little as 0.5 milligram per litre of blood (the legal limit in 23 of the European union's member States) will slow an average person's reaction by 50 %. At 90 kilometres an hours this means that a rider will be twelve metres closer to a car that has pulled out in front of him or her before even starting to try and avoid it. With 1.5 milligram per litre of blood a rider is 200 times more likely to have an accident than when alcohol free.

All other social or recreational drugs should also be avoided when riding. Whilst they can effect a person's body or mind in differing ways all distort one or another of a persons senses with a corresponding influence on either judgement or ability. It should also be remembered that the effects of alcohol and drugs often stay in the body for quite a long time.

Illness and medication

Even a minor illness, such as a mild cold, can effect a rider's awareness, ability and judgement. Whilst such a condition would not normally require the motorcycle or scooter to be left at home, the future rider should make an adjustment in how they ride. Not least of all because a sneeze can be quite disconcerting and sometimes unpleasant with a full face helmet on.

More serious illnesses do require the rider to consider whether they will seriously affect riding performance and the future rider should understand that not using the bike can make good sense. Even aches and pains such as a headache, an earache or toothache and muscle strains can have a prejudicial effect on a rider's ability and require common sense to be exercised.

The effect of medication, whether prescribed by a doctor or obtained from a pharmacist, on a rider's ability should always be considered. Many products for the relief of a cold or influenza will carry a warning advising against driving or riding.

A rider should always check, asking if necessary the doctor or pharmacist, and if there is any possibility that the medication could effect performance then the rider should either not take the medication or not ride his or her motorcycle or scooter.

8. Attitude and behaviour

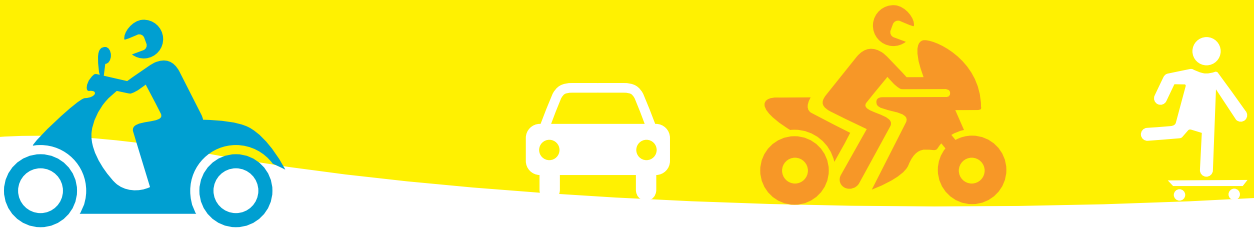
This aspect considers the need for a future rider to appreciate that he or she is primarily responsible for the safety.

Attitude and behaviour is the last aspect of the Theoretical element of the IRT model European programme and the future rider soon will be moving on in the process of obtaining an A category licence. He or she will be acquiring a range of skills and knowledge that will be essential to be able to ride safely on today's roads.

Having control of the machine and being able to ride safely in traffic, across a range of challenging circumstances and conditions, will require real commitment to develop the required dexterity, awareness, competence and confidence.

These requirements are however only a part of what will be needed by the rider. Very importantly the rider must understand that his or her attitude and consequent behaviour are asolutely essential.

Reading the requirements and intentions of other road users and recognising potentially hazardous situations are very important skills. Managing them however requires the rider to realise that it is only he or she that is able to directly control his or her actions and make necessary adjustments to speed, position and distance in good time.



Managing your machine: the Machine control element of the IRT programme

The identified aspects within the machine control element are in order of sequence: *Machine familiarity; First movements; Gears, brakes and direction; Steering and counter steering; Low speed manoeuvring*; and *Hazard management*.

These aspects are developed in detail, with emphasis being given to the hazard awareness and attitude and behaviour, and the exercises that are required for each aspect. The developed exercises were test ride during the IRT project.

The main considerations have been identified as:

- what the rider should know before starting to learn the skills and knowledge addressed in an aspect;
- what the instructor should be aware of and plan for; the particular hazards and the attitude and behaviour associated with the aspect, not only regarding the training exercises but also in the context of riding on public roads;
- the exercises that should be demonstrated and practised; and
- the criteria for evaluating the rider's progress before moving on.

1. Machine familiarity

Hazards, attitude and behaviour

The primary focus in this aspect is to enable the rider to appreciate the weight of the machine and its potential to damage anything that it comes into contact with, particularly when moving.

The secondary focus is to reinforce and develop the appreciation of hazards and attitude and behaviour introduced in the Theoretical element.

Instructor's requirements

- Review Instructor's notes.
- Verify legal requirements.
- Evaluate the extent of rider's pre-knowledge.
- Explain and demonstrate the main controls.

Theoretical	Machine control	Traffic interface
1 Road regulations	1 Machine familiarity	1 Positioning in traffic
2 Signs and markings	2 First movements	2 Distance and Speed
3 Mechanics and dynamics	3 Gears, brakes and directions	3 Curves and bends
4 Hazard awareness	4 Steering and counter-steering	4 Junctions
5 Helmets and appropriate clothing	5 Low speed maneuvering	5 Overtaking
6 Social responsibilities	6 Hazard management	6 Motorways
7 Impairment		7 Anticipation
8 Attitude and behaviour		8 Riding together
		9 Journey planning

- Demonstrate putting machine off and on its stands.
- Show balance with walk-round demonstration.
- Explain importance of hazard awareness and attitude and behaviour.
- Make initial assessment of rider's attitude.

Rider's pre-knowledge

- Road regulations, signs and markings.
- Theory of machine's dynamics.
- Social responsibilities.
- Effect of impairment through drugs or alcohol.
- Importance of appropriate clothing.

The exercises

- Correct position on machine with hands and feet in relation to controls.
- Getting on and off the machine with it on and off its centre and side stands.
- Putting the machine on and off its centre and side stands.
- Balancing and moving the machine with engine off.
- Introducing the controls with engine off and machine on its centre stand.
- Starting and stopping the engine including use of kill switch.
- Machine safety and maintenance checks.

Evaluation

The instructor should be satisfied that the rider can safely and confidently mount and dismount, assumes a correct riding position, can manoeuvre without power, has a basic knowledge of the controls, can safely start and stop the machine and perform safety checks.

Instructor's notes

Preparation and planning

It is always important that the instructor plans for the session. Whilst the facilities that are available will to a large extent determine the programme, matters such as assessing the rider's pre-knowledge could be dealt with as a distinct issue or addressed at various stages throughout the session.

Legal requirements

Whilst these are determined by national law their importance and relevance should be emphasised by the instructor. For example if it is a legal requirement to have insurance, or to have passed a theory test at this stage of the training, the instructor should require the rider to produce proof of compliance.

Helmet use should be dealt with at this point with advice being given about benefits and problems, choices and fit, noise and comfort.

Explaining and demonstrating

When clearly explaining and competently demonstrating the exercises the instructor should recognise the attitude, confidence, ability and stature of the rider.

The instructor should constantly asses the rider's attitude and approach to learning to ride. Where it is apparent that the rider is, for example, overly assertive and prone to taking risks, the instructor should seek to address this in the content and style of his or her explanations and demonstrations.

If the rider has experience with other types of vehicles the instructor should point out that it is often not directly relevant.

Importantly the limitations on a rider's ability to receive and process information should always be recognised. Where possible different types and sizes of the machine should be used.

The exercises

Getting on and off and sitting correctly

With the machine on its centre stand the rider should practice getting on and off of it. This should be followed with the machine on its side stand and then standing on its wheels. Dealing with problems such top boxes should be demonstrated.

With the machine on its centre stand and the rider sitting on it, the instructor should ensure that the rider is central, hands and forearms are level, insteps are on the footrests and the back is straight.

Off and on the stands

Starting with the machine on its centre stand the rider should practice rolling it off from both standing and sitting positions. The use of the handlebar brake and, when standing, the rider's position to take the weight of the machine against the thigh, are key considerations.

Putting the machine on its centre stand should always be undertaken with the rider standing. Whilst the design of each machine will require a particular approach the position of the rider with one hand on the handlebar and the other on the handle usually provided and the use of a foot on the centre stand lever are important.

The use of the side stand should also be practised. Where a rider has limited strength the side stand can be used instead of the centre stand.

Balancing and manoeuvring

Sitting on the machine the rider should practice moving it backwards and forwards and turning through 90 degrees using the feet.

Balancing and manoeuvring-continued

Alongside the machine the rider should practice a range of backward and forward movements that simulate manoeuvring the machine in restricted circumstances, as if in a garage or a line of parked machines.

Standing beside the machine on its wheels the rider should practice balancing it whilst holding it with one hand.

Introducing the main controls

With the rider sitting on the machine on its centre stand, the instructor should identify and explain the purpose and the operation of the controls. The rider should become familiar with them to the point that when the instructor names them, they can be quickly and accurately identified.

The instructor should then demonstrate the controls other than those related to starting and stopping of the engine, gear selection and drive engagement and braking.

Starting and stopping the engine

With the rider sitting on the machine on its wheels, the instructor should thoroughly explain and demonstrate the process of starting and stopping the engine. Check lists for which can be very helpful to the rider. For starting it should include, where appropriate: fuel on, choke on, gears not selected, side stand up, clutch in, ignition switch on, kill switch off, handlebar brake held, appropriate throttle setting and operate starter mechanism.

The use of the kill switch only in emergency or particular circumstances should be explained to and understood by the rider.

The rider should always be wearing a helmet when starting the machine when sitting on it.

Machine safety checks

Before progressing to the next aspect the instructor should show the rider a number of checks that should be regularly undertaken to ensure that the machine is in a roadworthy condition. They should include, where appropriate, the operation of the brakes and the condition of the pads, the fork oil seals, the pressure and condition of the tyres, the lubrication and tension of the chain, the level of the engine oil and evidence of oil or fuel leaks.

The importance of these checks, even where they are not part of the licence examination, should be emphasised.

Hazards, attitude and behaviour

The rider should be aware that the machine itself, by virtue of its weight and balance characteristics, is a hazard. If it falls over it can be extensively damaged and can cause serious injury to the rider or any other person in its way. The instructor should point out that when it is moving its potential for damage and injury correspondingly increases.

The importance of attitude and behaviour should be stressed. The instructor should point out that accidents don't just happen, they are caused.

Evaluation

Before moving on to the *First movements* aspect, the instructor should be satisfied that the rider correctly sits on the machine, can get on and off it safely, can use its stands, can manoeuvre it safely, knows its controls and understands how they operate, can start and stop the engine and undertake the safety checks.

2. First movements

Hazards, attitude and behaviour

The primary need in this aspect is for the rider to appreciate that with power the machine is dynamic and is under the control of the rider. It is not just dexterity and operating skills, but importantly rider attitude that determines machine behaviour.

The secondary need is for the rider to understand the importance of visual focus not only for control but also to be aware of hazards at an early stage.

Rider's pre-knowledge

- The aspects of the Theoretical element.
- Getting on and off and sitting on the machine.
- Taking the machine off and on its stands.
- Manoeuvring and balancing without power.
- Starting and stopping the engine.
- Undertaking safety checks.

Instructor's requirements

- Review Instructors' notes.
- Explain the operations of gear selection and drive engagement.
- Explain the operation of the braking system.
- Demonstrate the selection of initial gear, engagement of drive and stopping of machine.
- Position in relation to rider enabling errors to be controlled and corrected.
- Explain importance of rider's visual focus.
- Explain and demonstrate the exercises.
- Continue to assess the rider's attitude.

The exercises

- Selection of gears and engagement of drive.
- Initial movements with feet down.
- Moving forward, then braking with only left foot down.
- First turns with both feet down.
- Riding in a lane at a constant slow speed with both feet up.
- Riding in a lane at varying slow speeds.

Evaluation

The instructor should be satisfied that the rider can safely and with reasonable confidence use the controls in combination and usually can smoothly and in a balanced way co-ordinate the selection of gears, engagement of drive, use of throttle and application of brakes.

The instructor should ensure that the rider understands importance of the focal point of his or her vision and looks accordingly.

Instructor's notes

Preparation and planning

In preparing for this aspect the instructor should recognise that the rider will need close and constant attention.

Distractions to both the rider and the instructor, for example from other trainees, should be avoided.

An area of the training ground should be chosen where the instructor can have easy access to the rider and the machine and where there is sufficient space to allow the consequences of any loss of control on the part of the rider to be minimised.

Legal and safety requirements

If the training ground is a public place the instructor must verify that the rider is compliant with national requirements, for example that the rider has the insurance cover and licence provisions.

The instructor should always ensure that the rider's helmet and clothing are appropriate.

Explaining and demonstrating

The instructor should recognise that the first movements of aspect 2, will form the foundation for the rider's training. Time spent at this stage will pay dividends later. It is most important that the instructor explains and demonstrates as often as is necessary to establish the rider's competence and confidence.

The instructor should seek to vary the way in which the exercises are explained and demonstrated in the light of the personality and ability of the rider. In some instances a demonstration of fine clutch and throttle control can help in showing the parameter. In other instances such an approach can undermine already limited confidence.

The attention span of the rider should be monitored and breaks should be taken before the onset of tiredness.

Whenever possible the instructor should be in a position to reach the handlebar controls if the rider seems to be losing control of the machine.

The exercises

Selecting gears and engaging drive

Where the rider is on an automatic machine the instructor will need to explain and demonstrate the relationship between the movement of the throttle and the increase in engine speed and then the point at which drive is taken up.

Where the rider has a machine with manual gears the instructor will also have to explain and demonstrate the operation of the clutch to enable the initial gear to be selected together with the balance between the clutch and throttle, to the point where drive is felt.

With the rider sitting on the machine on its wheels, feet touching the ground, the exercise can be undertaken. The instructor should stand beside the rider, or in front of the machine, over the front wheel with the headlight against the lower chest, or sit on the pillion behind the rider. The instructor's hands must be close to the handlebar controls and able to reach the kill switch.

The rider should understand that the purpose of the exercise is to recognise when the machine is about move forward.

Initial movements

Before making the initial movements under power, the instructor should explain and demonstrate the use of the brakes.

The instructor must stress the importance of correct visual focus so the rider does not look immediately in front of the machine, but where he or she wants to go.

The instructor should also ensure that on every occasion before the rider moves forward he or she has checked behind.

In making the first movements the rider, having engaged the initial gear, should check behind and then move the machine slowly forward under its own power with both feet off the footrests for a distance of a metre or two.

The machine should then come to a stop with the rider rolling off the throttle and disengaging the clutch. Neutral should then be selected.

The instructor should walk at the side of the rider.

Using the brakes

The instructor must explain and demonstrate the relative effectiveness of the front and rear brakes and the necessity of using them in a co-ordinated manner. The instructor should also explain and demonstrate the importance of using the clutch, throttle and brakes in a smooth and balanced way.

With the right foot on the footrest the rider should move the machine slowly forward for three or four metres and stop by rolling off the throttle, applying the front and rear brakes and disengaging the clutch. Neutral should be selected when the machine has stopped.

Throughout the exercise the instructor should walk beside the rider.

First turns

Prior to requiring the rider to change direction for the first time the instructor should explain and demonstrate the different dynamics of a machine at low and higher speeds. The instructor should also explain and demonstrate the importance of where the rider should be looking when turning.

With both feet off the footrests the rider should engage gear or drive and slowly move forward for a distance of a metre or two and then make a gradual turn to the left. On reaching approximately 90 degrees, the rider should straighten and continue for another metre or two and then stop the machine with the use of the front brake and clutch and then select neutral. The instructor should walk alongside the rider.

When the instructor is confident that the rider has reasonable clutch and throttle control, the rider should then be required on starting to move to immediately turn left through 90 degrees and continue for a metre or so before stopping.

When the instructor is satisfied with the rider's performance the exercise should be repeated with turns to the right.

Riding at constant slow speed

The next exercise requires the rider to control the machine slowly whilst going in a straight line.

The instructor should explain that the purpose of the exercise is not to go as slowly as possible, but to balance slow speed with directional stability.

Again the importance of the rider's visual focus should be stressed, with the rider looking forward to a moving point that he or she would reach within six or so seconds.

It is at the stage in a rider's training that the very bad practice of scanning immediately in front of the front wheel can develop. The instructor should explain that if a rider only sees an obstacle at that point then it is too late to avoid it.

The rider should engage the initial gear with the left foot on the ground and on moving forward both feet should be on the footrests. The instructor should walk alongside the rider and when told the rider should stop the machine using the brakes and clutch and then select neutral.

Riding slowly and varying speed

The instructor should explain and demonstrate to the rider the practice of varying the machine's speed while it is travelling slowly in a straight line. This, the rider should understand, is the first of the exercises that directly relates to an on-road, in traffic situation.

The rider should engage initial gear with the left foot on the ground. On moving off both feet should be on the footrests. After travelling a few metres with the clutch or drive fully engaged, the rider should gradually increase speed with the use of the throttle.

A speed of around 8 kph should be reached and then maintained for a few metres before rolling-off the throttle, allowing the machine to slow down under engine braking and then stopping with the use of the brakes and clutch. When stopped neutral should be selected.

When the instructor believes the rider's ability warrants it, a range of variations can be introduced. The exercise can be repeated without the machine coming to a complete stop and also periods of varying slow speeds, with and without intermittent stops, can be undertaken.

Importantly the rider should master the practice of partially disengaging the clutch when the engine speed is greater the machine's forward momentum.

Within these variations the rider should also be introduced to the ways in which the brakes can be utilised and begin to appreciate the different characteristics of the front and rear brakes by being required to brake more and less gently on occasion.

Hazards, attitude and behaviour

The instructor should ensure that within the exercises of the First movements aspect the rider appreciates that the dynamics of the machine make it a hazard, to the rider and other road users.

The rider should be aware that he or she is responsible for what the machine does and begin to realise that their attitude and behaviour will determine whether they and other road users are put at risk.

The crucial importance of correct visual focus must be stressed throughout these exercises, not only for achieving and maintaining good machine control, but also in the need to be aware of other road users and road conditions and being able to identify potential hazards and, if necessary, adjust their intentions.

Evaluation

It is important that the rider should not move on the the next Aspect without the instructor being confident that the rider has achieved a satisfactory level of competency. Time spent developing the basic machine control skills needed for these exercises will be repaid later.

The rider should understand the basic operation of the machine's controls and be able to use them in a co-ordinated way and be able to repeatedly ride the exercises in a safe and controlled manner.

The instructor should be confident that the rider understands the importance of attitude and behaviour and is looking where they should be when riding.

3. Gears, brakes and directions

A. Automatic gear

Hazards, attitude and behaviour

It is important that the rider understands where he or she should be looking, when starting, moving forward at varying speeds and changing direction.

The rider should begin to understand the effect of throttle and brake control on road holding and the importance of braking distances and anticipation.

Rider's pre-knowledge

- Mounting and dismounting, sitting correctly on the machine and manoeuvring it without power.
- Starting and stopping the engine of the machine, engagement of drive, use of throttle and making initial movements.
- Relationship between throttle and speed, effect of engine braking and operation of brakes.
- Importance of visual focus.

Instructor's requirements

- Review Instructor's notes.
- Evaluate the extent of rider's pre-knowledge.
- Explain and show the operation of the controls for changing speed and braking.
- Explain steering and counter steering and their relevance to changing direction.
- Demonstrate how to vary speed with and without brakes and to change direction at varying speeds.
- Explain importance of hazard awareness and attitude and behaviour in the context of the exercises.
- Continue to assess the rider's attitude.

The exercises

- Riding without change of direction, varying speed without use of brakes.
- Riding without change of direction, varying speed with throttle and operation of both brakes.
- Changing direction in a wide turns and varying speed between changes of direction.

Evaluation

The instructor should be satisfied that the rider can with reasonable confidence smoothly accelerate up to 25 kph and slow down to walking speed without use of brakes.

Accelerate to 35 kph and slow down to walking speed with correct use of throttle and brakes.

Change direction at low speed within a diameter of 15 metres and focus in the correct direction and distance whilst riding.

Instructor's notes

Preparation and planning

The instructor should plan according to the available space of the training ground, the number of riders and the machines available. When available different types and sizes of the machine can be used.

When there is more than one rider receiving instruction, the exercises should be organised in ways that ensure that adequate separation is maintained and that riders will not endanger one another.

Explaining and demonstrating

The instructor should always explain the exercises in the context of their relevance to driving on the road. The instructor should never demonstrate incorrect handling or dangerous practices.

Where a group of riders contains both automatic and manual machines the instructor should ensure that confusion does not arise due to the different location of certain controls.

When explaining and demonstrating the exercises the instructor should consider the attitude, confidence, ability and stature of the rider.

A rider's attitude and approach to learning to ride should be constantly appraised. Where it is apparent that the rider is overly assertive and prone to taking risks, the instructor should seek to address this in the content and style of the explanations and demonstrations. The consequences of such behaviour on the road must be emphasised.

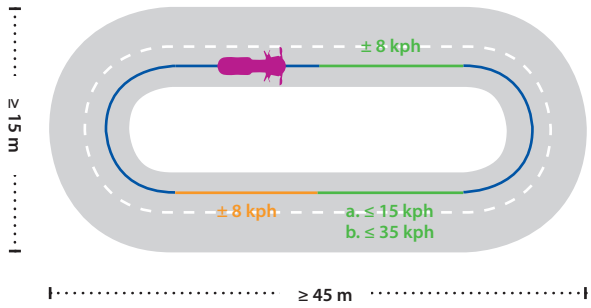
Similarly if a rider lacks confidence, the content and style of the instructor's explanations and demonstrations should seek to address this.

The ability of the rider to receive and process information should be continuously assessed and the instructor should always discuss progress with the rider.

If a dangerous or potentially dangerous situation were to develop the instructor should immediately stop the exercise.

The exercises

Speed control with the throttle



The instructor should explain and demonstrate the use of the throttle to increase and decrease speed and stress the importance of the rider's visual focus. The rider, having checked in the mirrors and looked over his or her shoulder, should start moving in a straight line, increasing the engine speed carefully.

After a short distance the speed of the machine should be reduced to walking pace without the use of the brakes

and then, after a short distance at walking pace, the acceleration and deceleration should be repeated. As the rider gains confidence the speed of the machine should be gradually increased up to a maximum of 25 kph. At the end of the exercise the machine should be brought to a complete stop with the use of the brakes.

It is important that the rider can decide when to slow down and accelerate within the exercise.

When stopped the right foot of the rider should be on the foot rest and the left foot on the ground. When moving he rider should be sitting in an upright position, with knees close together and both feet on the footrests.

Speed control with throttle and brakes

When the instructor has explained and demonstrated how both brakes should be used in conjunction with the throttle to decrease the speed of the machine and has reinforced the importance of the rider's visual focus, the rider should undertake the same exercise as previously described. This time, however, the deceleration should be made with the gradual and co-ordinated use of both hand and foot brakes in conjunction with the throttle.

On gaining confidence the rider should progressively increase the speed of the machine up to a maximum of 35 kph. At the end of the exercise the machine should be brought to a complete stop with the use of the brakes.

Changing direction and varying speed

The instructor having explained and demonstrated how the machine can be made to change direction at a slow speed and having reinforced the importance of the rider looking where he or she intends to go, the rider should start moving in a straight line, increasing the engine speed carefully.

On reaching a speed of approximately 8 kph the rider should change direction through 180 degrees, steering the machine in a gradual curve of not less than 15 metres, always looking where he or she wants to go.

On returning to riding straight and parallel to the previous direction the rider should accelerate to not more than 15 kph and then decelerate to the slower speed and change direction as before.

As the rider's confidence grows the speed between the curves can be increased and braking by both throttle and or the brakes can be utilised. The speed in the curves should be constant and remain slow.

After having ridden for a period in one direction the rider should reverse and ride in the other direction.

Hazards, attitude and behaviour

Throughout these exercises the instructor must stress the importance of where the rider should be looking, both in the context of maintaining proper control of the machine and being aware of other road users.

As speed and the use of the brakes increases the instructor should introduce the concepts of anticipation, traffic separation and braking distance.

Evaluation

Before moving on to the Steering and counter-steering aspect, the instructor should be satisfied that the rider has attained reasonably competence in the use of the throttle and brakes and can accelerate, decelerate and turn reasonably smoothly.

The instructor must be sure that the riders understands and is applying correct visual focus.

Where the rider's progress is borderline the instructor should record which matters need to be further addressed in future training aspects.

B. Manual gear

Hazards, attitude and behaviour

It is important that the rider understands where he or she should be looking, when starting, moving forward at varying speeds and changing direction.

The rider should begin to understand the effect of clutch, gears, throttle and brake control on road holding and the importance of braking distances and anticipation.

Rider's pre-knowledge

- Mounting and dismounting, sitting correctly on the machine and manoeuvring it without power.
- Starting and stopping the engine of the machine, use of clutch, selection of gears, use of throttle and making initial movements.
- Relationship between throttle, gears and speed, effect of engine braking and operation of brakes.
- Importance of visual focus.

Instructor's requirements

- Review Instructor's notes.
- Evaluate the extent of rider's pre-knowledge.
- Explain and show the operation of the controls for selecting gears, varying speed and braking.
- Explain steering and counter steering and their relevance to changing direction.
- Demonstrate how to vary speed with and without gears and brakes and to change direction.
- Explain importance of hazard awareness and attitude and behaviour in the context of the exercises.
- Continue to assess the rider's attitude.

The exercises

- Riding without change of direction, varying speed with the throttle and changing gears, without use of brakes.
- Riding without change of direction, varying speed with the throttle and changing gears and operation of both brakes.
- Changing direction in a wide turns and varying speed with the throttle and changing gears and operation of brakes between changes of direction.

Evaluation

The rider should, with reasonable confidence and smoothness, be able to accelerate up to 25 kph and slow down to walking speed, changing gears, but without use of brakes.

Accelerate to 35 kph and slow down to walking speed, changing gears and with the correct use of throttle and brakes.

Change direction at low speed within a diameter of 15 metres looking in the correct direction and distance.

Instructor's notes

Preparation and planning

The instructor should plan according to the available space of the training ground, the number of riders and the machines available. When available different types and sizes of the machine can be used.

When there is more than one rider receiving instruction, the exercises should be organised in ways that ensure that adequate separation is maintained and that riders will not endanger one another.

Explaining and demonstrating

The instructor should always explain the exercises in the context of their relevance to driving on the road. The instructor should never demonstrate incorrect handling or dangerous practices.

Where a group of riders contains both automatic and manual machines the instructor should ensure that confusion does not arise due to the different location of certain controls.

When explaining and demonstrating the exercises the instructor should consider the attitude, confidence, ability and stature of the rider.

A rider's attitude and approach to learning to ride should be constantly appraised. Where it is apparent that the rider is overly assertive and prone to taking risks, the instructor should seek to address this in the content and style of the explanations and demonstrations. The consequences of such behaviour on the road must be emphasised.

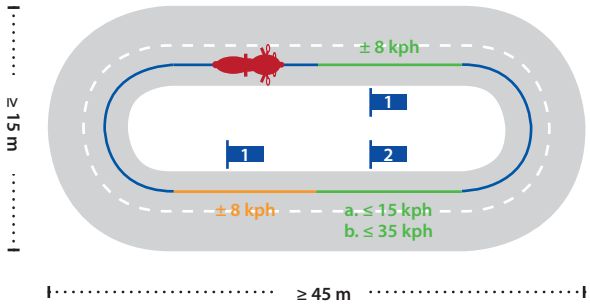
Similarly if a rider lacks confidence, the content and style of the instructor's explanations and demonstrations should seek to address this.

The ability of the rider to receive and process information should be continuously assessed and the instructor should always discuss progress with the rider.

If a dangerous or potentially dangerous situation were to develop the instructor should immediately stop the exercise.

The exercises

Speed control with the throttle and gears



The instructor should explain and demonstrate the use of the throttle to increase and decrease speed and stress the importance of the rider's visual focus. The rider, having checked in the mirrors and looked over his or her shoulder, should start moving in a straight line, increasing the engine speed carefully.

After a short distance the speed of the machine should be reduced to walking pace without changing gears or use of the brakes and then, after a short distance at walking pace, the acceleration and deceleration should be repeated.

As the rider gains confidence the process of changing gear should be introduced and the speed of the machine should be gradually increased up to a maximum of 25 kph. At the end of the exercise the machine should be brought to a complete stop with the use of the brakes and clutch.

It is important that the rider can decide when to slow down and accelerate within the exercise.

When stopped the right foot of the rider should be on the foot rest and the left foot on the ground. When moving he rider should be sitting in an upright position, with knees close together and both feet on the footrests.

Speed control with throttle, gears and brakes

When the instructor has explained and demonstrated how both brakes should be used in conjunction with the throttle and gears to decrease the speed of the machine and has reinforced the importance of the rider's visual focus, the rider should undertake the exercise as previously described. This time, however, the rider should change gear and the deceleration should be made with the gradual and co-ordinated use of both brakes in conjunction with the throttle and gears.

On gaining confidence the rider should progressively increase the speed of the machine up to a maximum of 35 kph. At the end of the exercise the machine should be brought to a complete stop with the use of the brakes and clutch.

Changing direction and varying speed

The instructor having explained and demonstrated how the machine can be made to change direction at a slow speed and having reinforced the importance of the rider looking where he or she intends to go, the rider should start moving in a straight line, increasing the engine speed carefully.

On reaching a speed of approximately 8 kph the rider should change direction through 180 degrees, steering the machine in a gradual curve of not less than 15 metres, looking where he or she wants to go.

On being straight, parallel and opposite to the previous direction the rider should accelerate to not more than 15 kph without changing gears and then decelerate to the slower speed and again change direction.

As the rider's confidence grows the speed between the curves can be increased, gear changes introduced and braking by both throttle and or the brakes can be utilised. The speed in the curves should be constant and remain slow.

After having ridden for a period in one direction the rider should reverse and ride in the other direction.

Hazards, attitude and behaviour

Throughout these exercises the instructor must stress the importance of where the rider should be looking, both in the context of maintaining proper control of the machine and being aware of other road users.

As speed and the use of the brakes increases the instructor should introduce the concepts of anticipation, traffic separation and braking distance.

Evaluation

Before moving on to the Steering and counter-steering aspect, the instructor should be satisfied that the rider has attained reasonably competence in the use of the throttle and brakes and the operation of the clutch and gear change lever and the rider can accelerate, decelerate and turn reasonably smoothly.

The instructor must be sure that the riders understands and is applying correct visual focus.

Where the rider's progress is borderline the instructor should record which matters need to be further addressed in future training aspects.

4. Steering and counter steering

Hazards, attitude and behaviour

It is important that the rider appreciates that the machine control skills addressed in this Aspect are essential for being able to safely and competently ride a motorcycle on public roads.

The rider should begin to understand the dynamics of a motorcycle in the context of how direction can be changed at different speeds.

Rider's pre-knowledge

- The rider should understand and be competent in the use of the throttle, clutch, gears and brakes and able to move off, accelerate, decelerate, turn and stop safely and smoothly.
- The rider should understand the importance of where to look and applying correct visual focus, both in the context of machine control and awareness of other road users.

Instructor's requirements

- Review the Instructor's notes.
- Assess the extent of rider's pre-knowledge.
- Plan the layout of the exercises.
- Explain and demonstrate steering and counter steering and their influence on direction changing.
- Explain the particular importance of visual focus to machine control when changing direction.
- Emphasise the importance of hazard awareness and rider attitude in the context of the exercises.
- Continue to assess the rider's attitude.

The exercises

- Riding in a slalom at speeds from 15 to 50 kilometres an hour.
- Riding in a circle at 15 to 40 kilometres an hour.
- Riding in a figure of eight at speeds from 15 to 35 kilometres an hour.
- Turning through 180 degrees.

Evaluation

The rider should be able smoothly ride in a slalom, a circle, a figure of eight and a U, at slower speeds, requiring a mixture of steering and leaning to affect change of direction and at higher speeds where direction change is achieved by leaning and counter steering.

The rider should be able to directly induce counter steering through pressure on the handlebar and/or footrests, confidently and competently.

The rider's visual focus should be supporting the control of the machine and enabling the early development of potentially hazardous situations to be seen when later riding on public roads.

Instructor's note

Preparation and planning

Each of the exercises in aspect 4 require setting out on the training ground, using cones and tapes. Whilst the diagrams on the fourth page of these instructor's notes define the ideal arrangements, complying with them will not always be possible due to space limitations. The instructor should therefore plan and adapt the exercises accordingly. If, for example the diameters of the circle or figure of eight need to be reduced then the higher speed should be correspondingly reduced.

Where more than one rider is receiving tuition it is important that the instructor(s) ensures that adequate separation is maintained.

Explaining and demonstrating

The instructor should explain to the rider the dynamics of a motorcycle and the changes that occur when it increases in speed. Particular attention should be given to the gyroscopic effect of the wheels at moderate and higher speeds and where and how pressure should be applied to achieve a desired change in direction.

In demonstrating the exercises the instructor should show the control transition from steering, where the handlebars are turned in the direction of the turn, through leaning, where the rider shift bodyweight in the direction of the turn, to counter steering, where the rider puts pressure on the handlebar and/ or footrest opposite to the direction of the turn. The instructor should remember that full counter steering can be achieved at moderate speed and the temptation to show the effect at higher speeds should be avoided as it can be intimidating at this stage of the training.

The importance of where the rider should be looking in these exercises should be stressed by the instructor and be clearly evident when demonstrating.

It is important that he techniques of speed control in the exercises of aspect 4 should be explained and demonstrated. The rider should understand that brakes should only be used while the machine is upright and then when in a turn speed should be adjusted with the throttle and engine braking.

It is particularly important that the instructor continues to assess the rider's approach and where the rider's progress or attitude and behaviour gives cause for concern the exercise should be stopped and instructor should address the cause of the problem.

The exercises

Riding in a slalom

The instructor having demonstrated how the rider should ride the slalom, should ensure that the rider appreciates that the skills addressed are essential for safe machine control in traffic.

Having checked behind, engaged drive, moved off, accelerated in the defined lane to approximately 15 kph, the rider should go between the first and second cones, changing direction on exiting to enable the machine to be directed between the second and third cones, and so on.

The changes in direction should be made with steering and leaning and with any necessary slight variation in speed being controlled by the throttle. The visual focus of the rider should be smoothly and progressively moving from the exit of the cones that are about to be entered, to the entrance to the subsequent pair of cones on exiting the former cones. On exiting between the penultimate and final cones the rider should bring the machine to a smooth stop.

The exercise should be repeated and as the rider gains confidence and competence, on exiting the final cones the rider should ride back to the start point and stop there. Following this the rider's speed through the cones should gradually increased so that direction is controlled by leaning and then leaning and counter steering together.

Riding in a circle

The rider should start from an anti-clockwise position half a metre outside of a circle of cones having a diameter of approximately 20 metres.

On moving off the rider, maintaining the distance relative to the cones, should attain a speed of approximately 15 kph. The rider's should be looking to a point at least one third of the

circumference of the circle in front of his or her current position. Initially the rider will steer with the handlebars and as speed increases will lean into the turn.

As the rider gains in competence and confidence the speed should be gradually increased to a maximum of 40 kph. As the machine's speed increases the rider should apply counter steering input and lengthen visual focus to a point about half of the circle in front.

The rider should the repeat the exercise riding in a clockwise direction.

Riding in a figure of eight

With the cones set out in two circles with a diameter of around 20 metres and approximately ten metres between them, the rider should start the exercise from a position of 90 degrees facing outwards in an anticlockwise direction. On reaching the point where the second circle can be reached by changing direction by approximately 45 degrees, the rider should join the second circle at around half a metre on the outside of its cones in a clockwise direction.

For the first few circuits the rider's speed should be in the region of 15 kph, which should be gradually increased as the rider gains confidence and competence.

When in a circle at slower speeds the rider should focus at least one third of the circle in front of him or her and as the exit point for the second circle can be seen, then the focus should move to the entry point on the second circle. As the rider's speed increases the focus in the circle should increase to about half the circle in front of the machine.

With the rider turning alternatively left and right, the head should be level with the surface, rather than at the angle of the machine.

The instructor may vary the distance between the circles so the rider changes direction in one fluid or two distinct movements.

When turning in the circles the rider should adjust speed with the throttle, using the engine braking to reduce speed. This requires the machine to be in the correct gear. The rider should understand that if the gear is too high the engine will have little or no braking effect. If the rider needs to reduce speed with the brakes this should be done between the circles when the machine is upright or by straightening the machine away from the circle and then braking when upright.

Turning 180 degrees

With the cones set out as the figure of eight, this exercise the requires the rider to make U turns. Starting in an anti-clockwise direction, from a position half a metre outside of one of the circle of cones.

Having checked behind, the rider should move off and gradually accelerate to a speed of around 15 kph. On completing 180 degrees and being in line with to the initial position on the second circle, the rider should straighten up and just before reaching that point on the second circle, check behind and then enter the turn.

The rider's visual focus on entering a turn should be on the exit point and should smoothly move to the entry point on the second circle as the mid point is reached.

As the rider's competence and confidence grows the speed can be gradually increased to around 30 kph in the turns and on exiting a turn the the speed can be smoothly increased on the straight to a maximum of 50 kph and then reduced before entering the following turn.

The exercise can then be repeated in a clockwise direction.

Hazards, attitude and behaviour

The most important thing for the rider to understand at this point in the training, where he or she should have attained a moderate level of machine control skills, is that those skills are only part of what is needed to be able to ride safely and well. Proficiency in them is primarily needed to enable a rider to fully concentrate on traffic conditions and evaluate what is likely to develop.

The rider should appreciate that his or her attitude in this process is crucial. If a rider believes on entering a blind bend that the exit is clear, or that he or she has been seen by an approaching vehicle that is signalling an intention to cross in front, then the prospects of the rider gaining, without incident, the necessary experience over the first eighteen months of riding will be significantly reduced.

The necessity of correct visual focus should have been reinforced in these exercises with particular importance being given to the need to ensure that all is clear behind before executing the appreciable changes in direction required in these manoeuvres.

The rider should know that brakes should not be used in a turn and appreciate that being in the correct gear at the correct speed is crucial to arriving safely.

Evaluation

The machine control skills of aspect 4 are probably the most important for a motorcycle to be ridden safely and well. It is most important that the rider has achieved a level of competence that allows the exercises to be performed smoothly and in control of the machine.

The rider should be able to start, stop, use the throttle and clutch and change gear, to accelerate and decelerate with the correct and co-ordinated use of brakes and gears.

The rider should be able to smoothly change direction, progressing through steering at slower speeds, introducing lean as speed increases and inducing counter steering at higher speeds.

The visual focus of the rider should be correct and rearward checks must always be made when commencing a manoeuvre and changing direction.

If the rider has shown an over-confidence in his or her ability and a propensity to take risks, the instructor should be confident that the rider understands the likely consequences of such behaviour and modifies it accordingly.

Only when the instructor is satisfied on all of the above points should the rider be allowed to progress to the next aspect.

5. Low speed manoeuvring

Hazards, attitude and behaviour

Whilst low speed manoeuvring is not seen as being particularly dangerous, the rider should understand that these skills will be used when parking the machine, when there are pedestrians present and car drivers concentrating on finding and occupying a space.

It should also be understood that when a bike falls over it can injure the rider and anyone else who is in the way and can be extensively damaged.

Rider's pre-knowledge

The rider should be competent in the range of machine control skills covered in previous aspects and able to ensure that the machine will do what the rider intends.

The rider should understand that the knowledge and skills that are being acquired are all relevant to riding safely on public roads and that attitude and behaviour is a crucial factor in ensuring his or her safety.

The rider should be aware of his or her limitations, understanding that the machine control skills being acquired are only part of what is needed to safely ride on public roads.

The rider should have a growing appreciation of the range of hazards that will be faced when riding in traffic.

Instructor's requirements

- Review the Instructor's notes.
- Assess the extent of rider's pre-knowledge.
- Plan the layout of the exercises.
- Explain and demonstrate the importance of balance when manoeuvring at slow speed.
- Explain and demonstrate the particular importance of throttle and clutch control at slower speeds.
- Emphasise the need for consideration for pedestrians and other road users.
- Continue to assess the rider's attitude.

The exercises

- Riding straight at speeds below 3 kilometres an hour.
- Turning at speeds below 5 kilometres an hour.
- Surmounting obstacles at slow speed.

Evaluation

- The rider should have developed a good level of balance and be able to maintain control of the machine when manoeuvring at slow speeds.
- The rider should be competent In the clutch and throttle techniques required when riding slowly and when surmounting obstacles at slow speeds.
- The rider's visual focus should be correct and contributing to good balance as well as enabling an awareness of potential and actual hazards.
- The rider should appreciate that the ability to ride safely is a machine control skill of importance.

Instructor's notes

Preparation and planning

Because the exercises of aspect 5 address the ability of the rider to be able to control the machine at slow speeds, the instructor will have greater flexibility in planning how the training ground is set out and in the order and combination of the exercises. For example the turning at slow speeds exercise could use the slalom or figure of eight and the circle layouts used in aspect 4 or the instructor could prepare other layouts.

Importantly the rider should begin with distinct and separate manoeuvres and as confidence and competence develops, the manoeuvres can be combined, as indeed can the exercises at the latter stages of the training of aspect 4.

The instructor should recognise that the rider could see aspect 4 as less important because it is less dynamic and the advantages of making the session interesting through a flexile approach should not be underestimated.

Explaining and demonstrating

The instructor should explain to the rider the dynamics of the machine at slow speeds and the importance of throttle and clutch control in achieving and maintaining good balance.

Whilst the instructor can demonstrate the limits of slow speed control with the 'trials stop' technique, where the bike is at a momentary standstill with both feet on the footrests, this should only be attempted by the rider when the instructor is confident of the rider's ability and knows that the challenge this will pose will not undermine his or her confidence.

Particular attention should be given to the Importance of correct posture and visual focus.

Initially each manoeuvre within the exercises should be explained and demonstrated separately. As competence and confidence grows and the rider can combine the manoeuvres within the exercise the instructor should carefully explain and, if necessary, demonstrate what the rider is required to do.

The exercises

Riding slowly in a straight line

This exercise requires the rider to ride for 30 metres in a straight line at speeds below 3 kilometres an hour, without putting a foot down or deviating significantly.

On moving off the rider should be sitting centrally, with hands and forearms level, insteps on the footrests and back straight. Looking forward to a point that would be reached on six or so seconds the rider should keep the speed as slow as possible, using clutch and throttle. The machine should always be in the lowest gear and the brakes should not be used other than when the speed has increased significantly beyond that required for the exercise.

Whilst it will be necessary to move the handlebars to assist in maintaining balance, the front wheel should not deviate from the centre of the lane by more than 15 cm each side.

When the rider can maintain at least a steady slow walking speed with the machine under control at all times the instructor can move on to the next exercise.

Changing direction at slow speeds

The machine control techniques applied to riding slowly in a straight line should also be when making directional changes at slow speeds, with one exception, that of the rider's visual focus. Here the practices established in the exercises of aspects 3 and 4 should be applied.

Three distinct manoeuvres should be undertaken within this exercise: successive changing from one direction to another of no more than 45 degrees; turning through 180 degrees from a standstill and turning though 180 or 360 degrees when moving. The first could utilise the slalom or figure of eight courses used in aspect 4 and the second and third could use the circle or figure of eight courses. With the slow speed required if the ride is using the circle or figure of eight courses he or she should be on the inside rather than the outside of the course.

Initially each of the manoeuvres should be practised separately. However as the rider's competence and confidence grows they can be combined one with another.

When the instructor is satisfied that the rider is able to change direction at slow speed with the machine under his or her control at all times, they can move on to the next exercise.

Slowly surmounting obstacles

This exercise replicates a manoeuvre that the rider will often be required to perform on public roads, or more accurately, when getting on or off public roads, namely riding up and down a kerb.

Whist the other low speed exercises have required minimal throttle settings, this exercise will require more power from the engine and, therefore higher throttle settings, which will need to be finely balanced with the clutch.

The instructor should explain and demonstrate this technique and the rider should begin the exercise by exploring the balance between throttle and clutch to overcome resistance. Sitting on the machine with both feet on the ground and with the front wheel at right angles against a wall, the rider should select first gear, gradually let out the clutch and feel the point at which the engine is about to stall at a range of throttle settings up to approximately one-third open.

When the rider has developed a feel for the balance between throttle and clutch against resistance at higher engine speeds, he or she can move to the next stage of the exercise.

Using a pavement with a kerbstone with a height of around 10 cm, or a specially constructed and firmly fixed platform, the rider should position the machine at right angles to it with the front wheel just touching the kerbstone.

With both feet just touching the ground, the rider should select first gear, gradually let out the clutch and increase the throttle setting to the point where the wheel begins to mount the kerb. As soon as the resistance is overcome the throttle should be rolled back and when the front wheel is fully on the pavement the clutch lever should be pulled fully in. The rider should move forward until the rear wheel touches the kerb.

The rider should appreciate that less power will be needed to raise the rear wheel as a large part of the machine's weight is already on the pavement and if too higher throttle setting is used the rear wheel is likely to skid and slide to one side. An situation to avoided as it can be very dangerous.

Whilst it is not as demanding of the rider, getting off a pavement should also be practised. As with mounting, the rider's feet should be off the footrests. The throttle should be closed when the wheels are going down the kerb. Careful use of the front brake will ensure that the wheels go down gradually.

Hazards, attitude and behaviour

The rider show appreciate that if the bike falls it can injure the rider and anyone else who is in the way and can be extensively and expensively damaged.

Evaluation

The rider should be able to perform the exercises competently and confidently and the instructor should ensure that the rider understand that whilst the machine is going slowly it is still potentially dangerous.

6. Hazard management

Hazards, attitude and behaviour

Whilst the skills that are addressed in aspect 6 are probably most difficult to master, the rider should understand that they are essential to be able to avoid collisions with other road users.

A rider's ability to anticipate the unexpected is very important because in two-thirds of accidents where a motorcycle and another vehicle are involved, its driver will not have seen the rider.

Rider's pre-knowledge

- The rider should understand the counter steering technique and be able to consciously use it to effect changes of direction at speeds above 25 kph.
- The rider should understand and be able to demonstrate the braking techniques that are needed in the range of normal traffic situations.
- The rider should understand that the knowledge and skills that are being acquired are essential to be able to ride safely in traffic and that his or her attitude and behaviour are crucial to riding safely.
- The rider should understand that other road users will not always behave as expected and should appreciate the need to ride in a way allows hazardous situations to avoided, or at least managed.

Instructor's requirements

- Review the Instructor's notes.
- Evaluate the rider's pre-knowledge.
- Carefully plan the layout of the exercises.
- Explain and demonstrate obstacle avoidance with the use of extreme counter steering input.
- Explain and demonstrate the most effective braking techniques in emergency situations.
- Emphasise the importance of attitude and behaviour in avoid situations where the swerving and emergency braking skills are required.
- Continue to assess the rider's attitude.

The exercises

- Swerving to avoid an obstacle at speeds up to 30 kilometres an hour.
- Braking to avoid a collision from speeds up to 50 kilometres an hour.

Evaluation

- The rider should be able to ride around an obstacle using extreme counter steering input.
- The rider should be able to stop from a given speed in the shortest possible distance with the machine under control and neither wheel locking.
- The rider should be able to react quickly to a requirement to perform these collision avoidance techniques.
- The rider should understand that the need for and the effectiveness of these collision avoidance techniques will be influenced by his or her attitude and behaviour.

Instructor's notes

Preparation and planning

The exercises of aspect 6 are without a doubt the ones that are the most demanding of the rider. The instructor should therefore ensure that everyone's safety is the highest priority.

In preparing for the exercises the instructor should be aware of the ways in which the braking and swerving techniques will be tested in the national A category licence examination.

Whilst testing these techniques is now a European Union requirement in all of the Member States, the actual arrangements do vary considerably, with differences in speeds, distances and the dimensions of the obstacle around which the rider must swerve. In some countries the barking and swerving techniques are tested separately and in others they are combined.

If the size of the training ground is sufficient and the condition of its surface is good, then the instructor should plan to set the exercises out in a way that is as close as possible to what the rider will experience when he or she comes to take the test.

In saying this it should the instructor should know that it is possible for a rider to be trained in both emergency braking and swerving, in smaller areas and at lower speeds than those required by some national testing arrangement.

In planning for these exercises it is important that the rider is introduced to the techniques in a progressive way. The direct input required to effect counter steering necessary to swerve around an obstacle can be induced at a speeds as low as 20 kph and good emergency braking techniques from as low as 25 kph.

The instructor must always ensure that the rider is wearing appropriate clothing when riding these exercises. Gloves, footwear, jacket and trousers should afford good protection in the event of the rider falling.

Explaining and demonstrating

The ability to brake quickly and effectively in an emergency and to be able to swerve around a vehicle or person that has unexpectedly entered a rider's intended path, are essential machine control skills and are truly lifesaving.

In explaining and demonstrating them it is important that the instructor emphasises that the likelihood of the rider being required to use them will, to a very large extent, be determined by the rider's attitude and behaviour. If a hazardous situation is seen at an early stage in its development then the rider can adjust speed and/or line and it can become a normal traffic situation.

The instructor must be able to competently demonstrate the swerving and braking techniques that these exercises require and should recognise that to the rider they will initially

be intimidating, even frightening. The instructor should carefully explain what is required of the rider and how the machine will react and should initially demonstrate the techniques at slower speeds.

As always the rider's visual focus is very important and the instructor should emphasise and closely monitor it.

The exercises

Swerving to avoid

The rider should begin by exploring the positive counter steering characteristics of the machine. Riding in a straight line at about 20 kilometres and hour, a firm and deliberate forward movement should be made on the handlebar on the opposite side to the intended direction of the turn.

The input on the handlebar should be made with the upper arm and torso, the wrist locked and the head should remain vertical to the road.

The rider should not alter the throttle position or operate the clutch or gears and should look where he or she intends to go, not at the obstacle to be avoided.

After effecting a turn the rider should stop. The manoeuvre should then be repeated with increasing strength of input and corresponding tightness of turns.

When the rider has gained competence and confidence, a second counter steering input should be introduced, this time on the opposite handlebar to the first. On the machine returning to the vertical position the rider should stop. When reasonably competent in making the two consecutive swerves, the rider should make a further normal turn onto the line in which he or she was originally travelling and then stop.

When the instructor is satisfied that the rider can undertake the exercise and be at all times in control of the machine, the counter steering input can be changed from the handlebar to the footrest.

The approach should be as before except that instead of pushing the opposite handlebar to the direction of the intended turn the rider's foot should push firmly down on the opposite footrest to the intended turn.

When the instructor is satisfied that the rider has mastered the technique, input from the handlebar and footrest can be combined. The instructor should explain that the characteristics of a machine will determine the most effective counter steering input.

At this point the rider should be required to make an initial swerve to the left or to the right, depending on a prearranged signal being given by the instructor. After the initial swerve the rider should swerve back to his or her original direction and then turn on to the original line.

When the instructor is satisfied that the rider has reached a reasonable standard of competence then the training ground can be laid out as close to the requirements of the national test and the exercise can be practised with the speed being progressively increased to 30 kilometres an hour. Should the national test require the swerving manoeuvre to be taken at higher speeds then this should only be attempted on a training grounds of sufficient size with a good surface.

Braking in an emergency

In introducing this exercise the instructor should stress that when used properly a motorcycle's brakes are very efficient and a competent rider can usually stop before the obstacle.

The rider should understand that the object of the exercise will be to stop the machine from a given speed in the shortest possible distance without either wheel locking or the machine deviating from a straight line.

Travelling in a straight line at 20 kilometres an hour, on reaching a marked point the rider should very firmly apply both brakes together and pull in the clutch lever and roll off the throttle. This should be repeated until the rider has developed a feel for the braking effectiveness and can regularly stop without either wheel locking.

On each occasion the stopping distance should be marked so that the rider can appreciate that the distance is shorter when the wheels do not lock and is able to judge the improvement in his or her performance.

At this stage the speed can be increased to 30 kph and a prearranged visual signal should be substituted for the marked braking point. The stopping distances should be measured and

compared with the rider's previous performance. This will give the rider an understanding of reaction time and increased stopping distance.

When the instructor is satisfied that the rider is able to make an effective emergency stop, with the machine being under his or her control, the speed can be increased in stages. If the size and the surface of the training ground safely allows, up to a maximum of 50 kilometres an hour.

Braking and swerving

Normally swerving and emergency braking are two distinct manoeuvres that a rider can resort to in dealing with a serious situation.

The Instructor should explain to the rider that if there is not enough distance to stop to avoid hitting an obstruction, such as a car that has pulled out in front of a rider, then the rider should swerve around it. Indeed it would be a very skilled rider who in such a situation, could make the judgement to trade speed for increased manoeuvrability, particularly as changing from braking to swerving controls would require time, which is also space.

Some national A licence testing arrangements have however chosen to combine the braking and swerving manoeuvres.

If the size and surface of the training ground safely permits, then, and only if the rider can competently and consistently perform the separate swerving and emergency braking exercises, the instructor can set out the training ground as required.

The rider should be thoroughly briefed on what will be required of him or her and should first attempt the combined manoeuvre at speeds slower than required in the A licence test, working up to the required test speeds as and when the instructor is satisfied that it is safe to so do.

Hazards, attitude and behaviour

Aspect 6 focuses on extremely hazards situations. In the course of the exercises the instructor should ensure that the rider has a wider appreciation of hazards and behaviour, beyond the immediate context of a crisis braking or swerving situation.

The rider's visual focus should be where he or she will get the earliest possible warning of a hazardous situation. When it is necessary to either swerve or brake very hard, the rider must be looking where he or she wants to go and not at the obstacle they are trying to avoid.

The rider should have a good understanding of the relationship between speed and distance and the compounding effect of thinking and reaction time. Added to this should be an appreciation of the condition of the road surface on the rider's ability to be in control of a situation.

The rider should know that emergency braking should only be attempted with the machine upright and in a straight line. Should the rider need to brake hard whilst in a curve then it will be necessary to bring the machine upright, brake and then lean it over, using firm counter steering input.

Evaluation

The rider must be able to swerve around an obstacle, to the left and to the right, at speeds of up to 30 kilometres an hour, competently and confidently and with the machine under control at all times.

The dimensions of the obstacle should be 1.7 to 2.2 metres by 30 centimetres high and at a distance of approx 10 to 12 metres from the marked point where the manoeuvre should begin. When the instructor indicates the point at which the manoeuvre should begin the distance to the obstacle should be approx 12 metres.

The rider must be able to safely brake in an emergency, keeping the machine under control at all times, from speeds of 30 up to 50 kilometres an hour.

When the instructor is satisfied that the rider's machine control skills are such that all the exercises of aspects 1 to 6 can be performed safely and competently and that he or she understands the importance of correct attitude and behaviour, then it is time to move on to the real challenge of learning to ride safely in traffic.

Riding safely on the Road: the Traffic Interface element of the IRT programme

The aspects of the Traffic interface element were identified as: *Positioning in traffic; Distance and speed; Curves and bends; Junctions; Overtaking; Motorways; Anticipation; Riding together*; and *Journey planning*.

Two full days were dedicated to developing and test riding these aspects during the IRT project, both on a training ground with simulated road junctions and on public roads.

Again particular attention is given to hazard awareness and avoidance and attitude and behaviour.

As the traffic interface aspects considered situations and environments that could not be addressed or experienced in isolation or in sequence. Consequently, three introductory aspects, encompassing considerations appropriate to all of the aspects of the Traffic interface element, were developed:

- The first emphasises the riders' primary responsibility for road safety, that machine control skills are only part of what is needed to ride safely, the importance of attitude and behaviour and of hazard awareness;
- the second covers the instructors' approach to the Traffic interface element;
- and the third addresses from the both the instructor and the rider's perspective, what is needed before venturing onto public roads.

The rider must understand that:

- Before venturing into traffic it is most important that the rider understands that the primary safety responsibility lies with him or her.
- While competent machine control skills are essential, they are only a part of the range of skills and knowledge that are needed to safely ride a motorcycle or a scooter in traffic.
- It is attitude and behaviour that will primarily determine his or her ability to be able to ride safely in traffic, and that hazard awareness and anticipation are crucial skills.

Theoretical	Machine control	Traffic interface
1 Road regulations	1 Machine familiarity	1 Positioning in traffic
2 Signs and markings	2 First movements	2 Distance and Speed
3 Mechanics and dynamics	3 Gears, brakes and directions	3 Curves and bends
4 Hazard awareness	4 Steering and counter-steering	4 Junctions
5 Helmets and appropriate clothing	5 Low speed maneuvering	5 Overtaking
6 Social responsibilities	6 Hazard management	6 Motorways
7 Impairment		7 Anticipation
8 Attitude and behaviour		8 Riding together
		9 Journey planning

The instructor should understand that:

- Whilst the aspects of the Traffic Interface element are presented in an order, it will not possible to follow them as distinct training sessions on the road. Their pedagogical logic should be recognised however through appropriate emphasis, careful route planning, and by only increasing their complexity in line with the rider's developing experience and competence.
- Within each of the aspects, various situations are covered and it will often not be possible to follow them as distinct exercises. Again emphasis and planning should aim for the rider to progressively experience them.

Before venturing on the road, the rider must:

- Meet all the legal requirements.
- Be suitably dressed and have appropriate protective equipment.
- Be able to competently control the machine.
- Understand the rules of the road particularly with regard to the traffic and road layout situations to be encountered.
- Accept and comply with the wishes of the instructor when riding together on public roads.
- Understand and have practised the arrangements for communicating with the instructor.
- Appreciate the likely hazards to be encountered in riding the aspect.
- Appreciate the likely behaviour of other road users and the need to anticipate it.
- Recognise that it is his or her attitude and behaviour that will largely determine his or her safety.

Before venturing on the road, the instructor should:

- Pre-plan the exercise.
- Identify a route where the rider will experience the traffic situations covered in the particular aspect.
- Verify that the rider and his or her machine meet all the legal requirements and are suitably attired.
- Be confidence that the rider has the necessary machine control skills.
- Develop the riding patterns for the aspect and the methods for communicating with the rider.

- Brief the rider thoroughly on the riding patterns and communicating arrangements.
- Explain to the rider the particular hazards that could be encountered in the course of riding the aspect.
- Explain the likely behaviour of other road users and give examples of how it can be anticipated.
- Assess the attitude and likely behaviour of the rider and adjust approach accordingly.

1. Positioning in traffic

This aspect looks at the position a rider should take on the road when riding in an urban environment, in the presence of other traffic.

Preparation and planning

In preparing for the rider's first experience on a scooter or motorcycle on public roads the instructor should identify a route with relatively few junctions and moderate traffic density and speed.

Even if the rider holds a licence for another category of vehicle and has had traffic experience, the instructor should not use a route with many features and high traffic volume and speed.

The route chosen should always have sufficient features to allow the instructor and the rider to stop and discuss situations and experiences safely.

Legal and safety requirements

Before venturing onto the road the instructor must verify that the rider and the machine complies with all legal requirements.

The instructor should also ensure that the rider's helmet and clothing are appropriate, that the helmet's visor or goggles are not scratched and are clean and that the rider undertakes a safety examination of his or her machine, checking items such as chain tension, tyre condition and pressure, lights, brake pads, oil levels, etc.

Preparing and briefing the rider

The rider must understand that a correct position in traffic is determined by a number of constantly changing factors and, as such, he or she must be constantly evaluating and adjusting.

Whilst it is generally correct to be in the middle of the lane, the rider should adjust position to have the maximum field of vision and ensure that other road users will see the him or her. The rider should be constantly scanning, looking both far and wide and should be looking to identify and avoid or manage potentially hazardous situations.

This can be summarised as: always be in a position where you can see and can be seen; always look far and wide; and always look for a safe way out.

Speed and distance are the primary considerations and should be varied in line with changes to the available lateral and longitudinal space.

The instructor can explain this in terms of the rider being at the centre of an oval safety bubble, the dimensions of which will reduce in relation to the proximity of other road users, the width and condition of the carriageway.

As the distance to the vehicle in front decreases the rider should decrease his or her speed.

Similarly when space between the edge and the centre of the carriageway is going to reduce, due for example to a parked vehicle or the lane narrowing, the rider should reduce speed.

The instructor should ensure that the rider understands the riding position had he or she should take in relation to the instructor. The rider should be advised of the instructor's planned intention to stop to discuss the rider's performance before the exercise starts. Should however it be necessary to stop an exercise, the distinct signal to be used and the procedure to be subsequently followed must be clearly understood by the rider.

The rider must also understand the arrangements for passing instructions. Where the use of communications equipment is involved its use should have practised before venturing on the road.

The experience

Joining traffic

The instructor and the rider should seek to join the traffic on a single carriageway from a safe position, such as a lay-by or a driveway.

With the instructor leading they should signal their intention and then move onto the carriageway in the direction of the traffic on their side of the road. Initially the carriageway should be clear with no oncoming traffic in that direction.

They should accelerate to just below the permitted speed, or to a lower speed if the condition of the traffic situation or road surface requires it. After what the instructor judges to be an appropriate time and distance and at a suitable location, signalling their intention, they should stop and then repeat the exercise.

When the instructor is satisfied that the rider's confidence is sufficient they should join the carriageway in the opposite direction to that in which the traffic is moving in on their side of the road.

Having verified that the road is clear with no oncoming traffic in both directions, they should signal their intention. Again with the instructor leading they should then move onto the carriageway. After an appropriate distance and at a suitable location, signalling their intention, they should stop and then repeat the exercise.

When the instructor is satisfied that the rider is sufficiently competent and confident they should seek to join the carriageway with moving traffic on it.

Importantly the instructor must explain and demonstrate how to judge the speed and distance of oncoming traffic. With the instructor leading they should seek to join the carriageway in front of oncoming traffic.

This must however only be undertaken when the oncoming traffic is at a distance and travelling at a speed that would allow the instructor and rider to join the carriageway and with moderate acceleration, obtain the correct speed and position relative to the oncoming vehicle and to other vehicles, without causing the driver of the oncoming vehicle to reduce speed or take other evasive measures.

When the instructor is satisfied that the rider's ability and confidence has sufficiently developed, these exercises should be progressively repeated with the rider leading and the instructor following.

Moving with traffic

The instructor should seek ensure that the rider is progressively introduced to the experience of riding as part of a stream of traffic. This will require the instructor to initially identify a road of reasonable length and straightness and with light to moderate traffic density. Ideally it should also have relatively few features, such as other roads joining it.

With the instructor leading, a position should be taken in relation to the vehicle in front which will allow the rider to see and be seen and to be able to stop with moderate braking, should the vehicle in front stop suddenly.

The position will be influenced by the speed of the preceding vehicle and its characteristics. If, for example, it is a larger commercial vehicle, rather than a smaller, lower car, the rider should position further back and further out so that not only can the rider see more of the road and be seen by oncoming traffic, but can also be seen by the driver in front in the vehicle's rear view mirrors.

The relationship between speed and distance is a crucial and the rider should constantly monitor and adjust for it.

As the speed of a preceding vehicle increases the distance from it should also increase. Whether the distance is sufficient can be checked by the rider by using the two second rule, where a position of the proceeding vehicle, marked, for example, by passing a lamp post, will be reached by the rider after two generous seconds have elapsed, three seconds if the road is wet.

The distance to the preceding vehicle should be increased by the rider reducing speed in anticipation of a situation where it would need to slow or stop. For example when approaching a parked vehicle or pedestrian crossing or when a signals of preceding vehicles activate.

When approaching a parked vehicle or any other situation where the width of the carriageway reduces, the rider should check behind and reduce speed before reaching the obstruction to the point where, if necessary, he or she could stop without resorting to heavy braking. Again the safety bubble concept, where the shorter or narrower the bubble, the slower the rider's speed, is appropriate.

The rider's position relative to the following vehicle should be monitored through the use of the rear view mirrors and, when necessary, by looking behind. The distance should be similar to the distance between the rider and the preceding vehicle.

In the event of a following vehicle closing up to the rider, he or she should allow the distance to the vehicle in front to increase so that in the event of the following vehicle deciding to overtake, it can return to the lane without the rider needing to brake or take other evasive measures. As a general rule the rider should not increase speed to maintain a safe distance in front of a following vehicle.

In no circumstances should the permitted speed limit be exceeded. The instructor should ensure that the rider understands that they exist for a reason. For example a pedestrian hit by a vehicle at 50 kph stands a better than 80% chance of surviving. At 70 kph the impact will almost inevitably cause fatal injuries!

When the instructor is satisfied that the rider's ability and confidence is sufficient the experiences should be progressively repeated with the rider leading and the instructor following.

The instructor should demonstrate to the rider the correct positions to take in a stream of traffic which is moving at a slow but varying speed and is stopping and starting. Again the safety bubble concept should be applied.

The rider should seek a position which gives maximum visibility whilst remaining within the stream of traffic, thereby enabling the movement of the vehicles further up the stream to be seen and the likely behaviour of the vehicle in front to be reasonably anticipated.

The distance to the vehicle in front should varying in line with the speed at which the traffic is moving, with an extra margin being allowed when the speed is not constant but increases and decreases.

At all times the distance should be sufficient to allow the rider to be able to stop without resorting to heavy braking in the event of the vehicle in front stopping dead without warning.

When stopped the rider should either select neutral or remain stationary with the machine in gear and the clutch disengaged depending on when the vehicle in front is likely to move off.

Constant speed positioning

On stopping behind a vehicle that has stopped a distance of at least one metre should left and the rider should not start to move until after the vehicle in front has started to move. The distance to the vehicle should then be increased in line with the increasing speed of the traffic.

When stopping close to a junction the rider should always allow sufficient space for a vehicle that wishes to turn into or out of the junction. The rider should not however indicate to the driver of such a vehicle that it is safe for him or her to join or to cross the stream of traffic.

Evaluation

The instructor should be satisfied that the rider can safely join and move within a stream of traffic and is able to maintain a safe position in relation to other vehicles. That the rider adjusts distance in relation to speed of the traffic, the width of the carriageway and approaching situations.

The instructor should be sure that the rider is constantly scanning, both far and wide, is evaluating and anticipating situations as they occur and develop and adjusts position and speed appropriately.

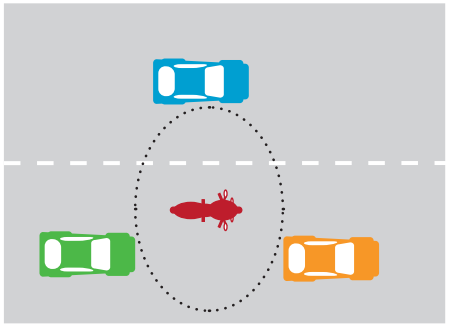
The instructor should be satisfied that the rider is taking positions which gives him or her the best field of vision and allows the rider to be seen by other road users.

Also that the rider understands that in any situation, the position he or she should be in is one where there is a safe way out of it, and rides accordingly.

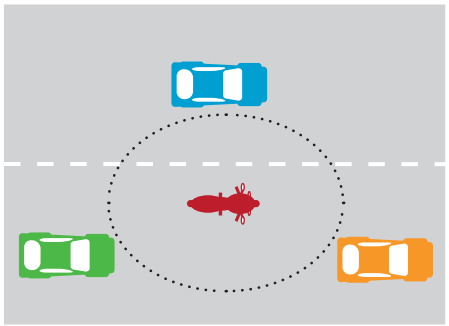
The safety bubble

The following illustrations show how the size of the safety bubble changes in relation to the riders' speed, the proximity of other traffic and the width of the carriageway.

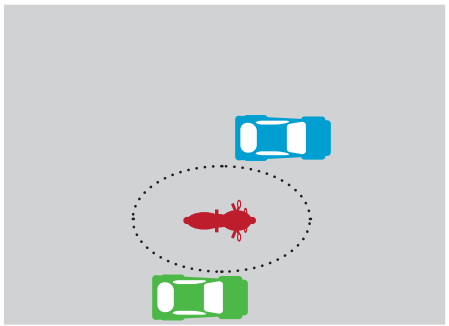
At 25 kph:



At 50 kph:



Passing a parked car:



2. Distance and speed

This aspect looks at the rider's position on the road when riding in suburban and rural environments, where the presence of other traffic is less likely to determine the speed at which the rider travels.

Preparation and planning

In planning for this aspect the instructor should seek a route with relatively few junctions and bends and with only light traffic. As the rider's ability and confidence develops the route can be extended in both distance and complexity. The volume of traffic, however, should remain light.

The chosen routes should have features to allow the instructor and the rider to safely stop to discuss experiences.

Legal and safety requirements

Before each training session on public roads the instructor must ensure that the rider is suitable attired and verify that he or she and the machine meet all legal requirements.

Preparing and briefing the rider

The rider must understand that when riding on suburban or rural roads with intermittent or light traffic, he or she will primarily determine the speed of the machine. This is different from riding in traffic where the rider's speed is mainly influenced by the speed of the stream.

This will require the rider to appreciate that her or her visual behaviour will need to be different. Where the rider is looking and how what is seen is evaluated, will allow the rider to determine what is a safe speed. The instructor must stress that at no time should the rider exceed the permitted speed limit.

The instructor must explain the importance of the rider focussing on the furthest point that can be seen on the road. On a straight road this would be at the point at which both sides of the road appear to join. Where the road curves or rises to a crest, it will be the point at which the road disappears from the rider's sight.

That is the point, often called the limit point, that should used by the rider to determine the safe speed. This should never be faster than the distance that the machine can stop in without resorting to heavy braking.

The limit point is a moving point and the rider's focus will move with it. The rider must never forget that it is dangerous to focus on a fixed point.

The importance of identifying potential hazards at the limit point together with the need to monitor and evaluate situations as they develop and, if necessary become a new, closer limit point, must also be understood by the rider.

The communication arrangements must be explained and understood, as should the riding positions and arrangements for stopping to discus the rider's performance.

The experience

Limit points

Joining the carriageway with the instructor leading, having checked that it is safe to do so and clearly signalled the intention, and taken a position in the middle of the lane, the rider should seek to identify the limit points being used by the instructor and understand the speed being taken in the context of them.

After a few distinct and different situations have been encountered the instructor and rider should stop and discuss them.

The ride should then be continued with stops as required, until the rider has followed the instructor through the range of situations and their limit points normally encountered.

When the instructor is satisfied that the rider's understanding is sufficient the routes can be ridden with the rider leading.

When the road is straight and clear and the limit point is where both sides of the road appear to join, the rider should adopt a speed which is within the allowed speed limit and which would allow the machine to be brought to a stop with the use of no more than light braking before a mark, such as a signpost, which was identified when it coincided with the limit point, has been reached.

When a curve or the crest of a rise is approaching, the limit point should be identified by the rider as the point at which the road surface disappears from his or her sight, the machine's speed should deceased accordingly. The extent to which the rider should reduced speed should relate to the rate at which the limit point appears to move toward the rider.

When the limit point appears to be moving away from the rider, for example when a curve is straightening, then the rider can increase speed. Again the speed should always be determined by the ability to stop within the distance to the limit point.

When approaching a curve the rider should recognise that the limit point can also appear to move laterally. This can give an indication of the direction and severity of the curve and the rider should adjust speed accordingly.

Situation monitoring

When focussing on a limit point the rider should identify a situation as it first appears. If, for example, the rider sees a road junction at the limit point, a process of evaluating its hazard potential should begin. The question of priority should be considered and whether there is traffic that could or will come from or go onto a road that is joining the road that the rider is on, should be monitored.

When a situation is first identified the rider should be prepared to reduce speed and when he or she believes that the joining road has priority or that traffic coming from it or joining it could, or actually would, take the intended path of the rider, then that point will become the limit point and the rider must adjust speed accordingly.

Evaluation

The instructor should be satisfied that the rider is correctly identify the limit points and adjusting speed accordingly.

The rider should have a good understanding of the relationship between speed and stopping distances, the time it takes to react and should be identifying situations, monitoring them and taking the appropriate action in time.

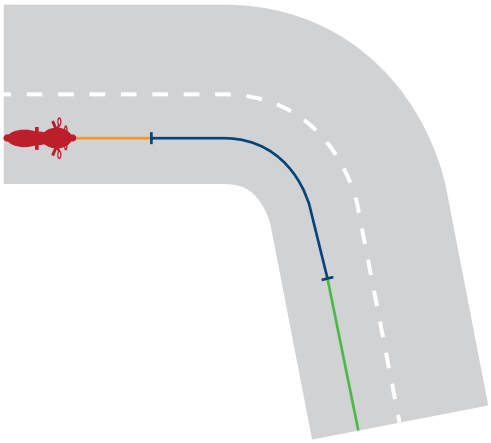
Speed and average stopping distances

Anticipatory light braking		
reaction	+dry	+wet
at 30 kph: 5 m	15 m	15 m
at 60 kph: 10 m	60 m	60 m
at 90 kph: 15 m	130 m	130 m

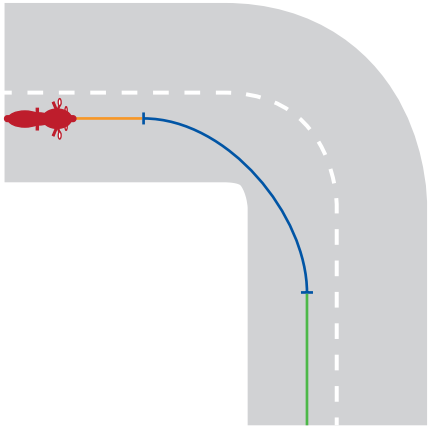
Anticipatory firm braking		
reaction	+dry	+wet
at 30 kph: 5 m	9 m	12 m
at 60 kph: 10 m	46 m	36 m
at 90 kph: 15 m	81 m	81 m

Unanticipated emergency braking		
reaction	+dry	+wet
at 30 kph: 10 m	4 m	8 m
at 60 kph: 20 m	14 m	28 m
at 90 kph: 30 m	32 m	64 m

The middle line:



Right hand with enhanced vision:



3. Curves and bends

This aspect considers how a rider should approach and ride through a curve or bend.

In the context of this aspect the distinction between a curve and a bend is that a curve would not require a speed reduction of more than 20 % and a bend being tighter, requires a greater reduction in speed.

Preparation and planning

In planning for this aspect the instructor should initially identify a rural or suburban route with a number of separate curves and moderate bends, having a good surface, constant or slight variations in their radii, and with few other features and light traffic.

As the rider's ability and confidence develops, the route can be extended to include curves and bends in sequence, so called S-bends, and curves and bends with significant variation in their radii. The incidence of other road features and the volume of traffic should remain light.

The instructor must recognise that significant demands will be placed on the rider. Accordingly the rider's ability to manage the demands should be constantly evaluated by the instructor and where necessary the experience should be broken down into more easily manageable units.

The chosen routes should provide the opportunity for the instructor and the rider to stop for advice and evaluation in safety.

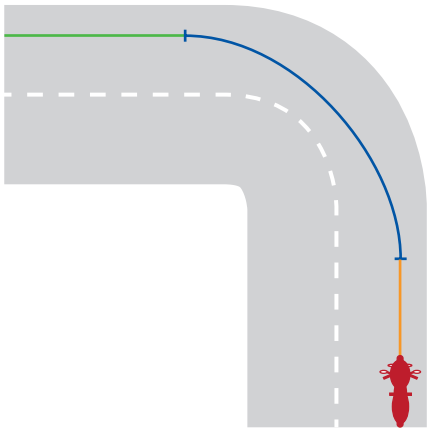
Legal and safety requirements

The rider and the machine must comply with all legal requirements and the instructor should ensure that the rider has checked the machine and that his or her helmet and clothing are appropriate.

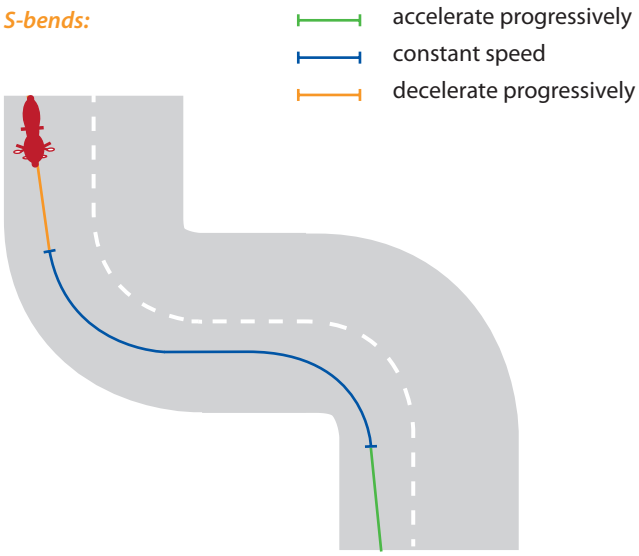
Preparing and briefing the rider

The instructor must explain that concept of the limit point, which was introduced and applied in aspect 3, is also essential to the safe negotiation of curves and bends.

Left hand with enhanced vision:



S-bends:



The rider must however also understand that the correct position to be in on the road and when approaching and passing through a bend, are also essential, the limit point being extended though the correct position widening or lengthening the rider's field of vision.

The importance of the rider's focus constantly moving with the limit point cannot be over emphasised.

Fixating, that is when the rider's attention is drawn to and held by a feature, for example a tree part way around a bend, is a major cause of motorcycle accidents. The rider should never forget the golden rule: *always look where you want to go!*

The instructor should also ensure that the rider understands the limitations on the use of the throttle, clutch and brakes, which are crucial to safely negotiating a curve or bend.

The experience

Control of the machine

With the instructor having explained and demonstrated the correct practice, the rider should take the lead. Approaching the curve or bend, focussing on the limit point and noting any irregularities in the road surface such as inspection covers, the rider should check behind and slow down so as to enter at a moderate and safe speed. The required braking and gear selection have been undertaken before reaching the bend, the limit point should appear to remain constant from the rider.

On entering light throttle input should be used to maintain the speed and the balance of the machine, through to the point where the exit can be seen.

In the early experiences of cornering the rider should take a line which establishes his or her position in the middle of the lane throughout the the curve or bend.

On entering the bend the rider should continue to focus on the limit point, the furthest point that can be seen at either the centre or the side of the road, depending on whether it is a left

or a right hand curve or bend, and should maintain the centre line in the lane through sufficient counter steering input.

If the rider misjudges the entry speed, the radius of the machine's line should be tightened through increased counter steering input.

Whilst minor adjustments to speed could be made using the throttle, it is a practice that should be avoided because it can alter the balance of the machine. Changing gears while the machine is in the bend, either to increase or decrease speed, should also be avoided.

Under no circumstances should the brakes be used while the machine is leant over in the curve.

Should an emergency situation arise where the brakes have to be used the rider should bring the bike upright, brake and then if possible, resume the line with counter steering input.

When the exit of the bend can be seen and the limit point appears to be moving away, the rider should carefully open the throttle to give no more than moderate acceleration, bringing the machine gradually upright.

The rider should not change gear until the machine is upright and should always operate the clutch and throttle smoothly.

Seeing more

When the instructor is satisfied that rider has developed a reasonable level of competency and confidence, the practice of increasing the rider's vision by flattening the line can be explained and then demonstrated with the rider following the instructor.

When the instructor is satisfied that the technique is understood the rider should lead and on entering a left hand curve or bend should take a position approximately one quarter in from the right hand edge of the lane.

As the exit of the curve or bend comes into view the line of the machine should be that at the apex of the curve or bend the rider will be approximately one quarter in from the centre of the road or left hand side of the lane.

As the road straightens the line should take the machine to the centre of the lane at the exit of the curve or bend.

On entering a right hand curve or bend the rider should have positioned the machine approximately one quarter from the centre of the road or the left hand side of the lane.

When the limit point is on the exit of the curve or bend the line should take the machine to approximately one quarter in from the right hand side of the road. The line should then take the machine to the centre of the lane at the exit of the curve or bend as the road becomes straight again.

The rider will immediately appreciate the benefits of this technique through being able to see further and taking a line with a less tight radius for part of the curve or bend.

The rider must understand however that it is dangerous to seek to increase the benefits of this technique by riding closer to

the edge or the centre of the road. There is inevitably detritus at the edge of the road and a real possibility of meeting oncoming traffic in or over the centre of the road.

Multiple and changing bends

The instructor should explain to the rider that one of the greatest pleasure of motorcycling is to ride through a series of curves or bends, having judged the speed and line correctly.

The rider should understand that there are no skills additional to those already practised required to achieve this.

The only difference being that the position that the machine should be in on the road when exiting one curve or bend, should be the correct position for entering the next.

What is important however is that the rider must recognise that the safe speed for the first bend is not necessarily going to be the same speed to safely negotiate the next and subsequent curves or bends.

The rider should therefore make a separate judgement regarding the severity and the safe speed for each bend in turn.

To this end the apparent sideways movement of the limit point is crucial. If, for example, when entering a subsequent right hand bend the limit point appears to be moving quite quickly to the right the rider can judge that he or she should slow down. In this case any use of the brakes to slow the machine must be made while it is upright.

The instructor should also explain to the rider that often the radius of a curve or bend does not always remain constant throughout.

Again the rider should understand that the limit point holds the key to being prepared for such an eventuality. If when in, say a left hand bend, the limit point which has apparently been moving to the left at a steady rate, appears to move more quickly, the rider can conclude that the bend is becoming tighter.

Faced with this situation the rider should increase the counter steering input to tighten the radius of the line that the machine is taking. Again the used of the throttle to reduce speed should be limited and changing gear and the use of the brakes avoided.

Reading the bend

The instructor must explain to the rider that there are other considerations to be taken into account when negotiating curves and bends.

The road surface should always be evaluated by the rider. If it is in poor condition, with repairs or shiny tracks or grooves caused by heavy traffic, if the surface is loose or if there are metal inspection covers in the road, the rider should further reduce speed and modify his or her line through the curve or bend.

The rider should also understand and be able to recognise that there are often additional clues to the severity of a bend.

Due notice should always be taken of signs which diagrammatically indicate the severity or numerically indicate the safe speed for the bend. Regarding the latter the rider should always err on the side of caution. Often a speed that is safe for a car can be testing for a scooter or motorcycle, particularly if the surface condition is poor or wet.

An indication of the direction the road may take beyond the rider's limit point in a bend can sometimes be found in the direction that a line of trees or power cable poles take. The instructor should stress however that these should only be taken as indications because it is always possible that they are following the old course of the road.

Evaluation

The instructor must be satisfied that the rider is able to competently judge the safe speed and take a correct, smooth line when negotiating curves and bends.

The rider should competently control his or her machine and be able to make smooth adjustments to the line.

The instructor must be satisfied that the rider is looking at the limit point and interpreting its movements correctly.

The rider's should also be monitoring the condition of the road surface and making adjustments to speed and line accordingly.

4. Junctions

Preparation and planning

In planning for this aspect the instructor should initially seek an urban route with straightforward examples of a two or three junctions and moderate traffic volume.

As the rider's ability and confidence develops the route should be extended to include other types of junctions, some of which should be more complex. Ideally the traffic volume should remain moderate.

The route should allow the instructor and the rider to safely stop to for advice and evaluation.

Legal and safety requirements

The rider must always be suitably attired and he or she and the machine must meet all legal requirements. The instructor must ensure that the rider understands the traffic signs, road markings and the traffic controls that will be encountered.

Preparing and briefing the rider

The rider must understand that to safely negotiate any junction the first requirement is to know where he or she wants to go.

The second requirements is to understand the rules of the junction: Is it controlled? Who has priority? What do the signs and road markings mean?

The third requirement is for the rider to see and be seen and to give early indications to other road users of his or her intentions.

The fourth requirement is to be in the correct position and at the correct safe speed on entering, passing through and exiting a junction.

To meet these requirements it is essential that the rider looks, thinks and plans ahead.

The instructor should brief the rider on the different types of junctions that they will be experiencing, explaining any particular rules and the practices that will need to be applied to safely negotiate them.

The experience

T junctions

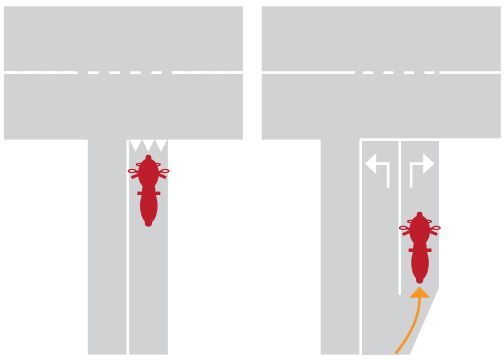
Approaching a T junction the rider should firstly check for traffic behind, signal the direction in which he or she intends to turn at the junction, begin to move to the correct position on the road and to gradually reduce speed.

The speed of the machine should progressively reduced, using engine braking, selecting lower gears and, if necessary light use of the brakes. Ideally they should only be used in the last 15 or so metres and to bring the machine to a halt.

In the course of decelerating the rider should be moving to be in the correct position at the junction. This being, if turning right, one third of the way in from the side of the road and if turning left, one third of the way in from the centre of the road. If the carriageway has two lanes the position should be in the right lane if turning right and the left lane if turning to the left.

Where road signs or road markings indicate that a certain lane is for a particular direction the rider should always comply with them. The machine's position within such indicated lanes should generally be in line with the above.

T junctions:



Whilst decelerating the rider should be looking to the limit point and also assessing the road to be joined by scanning to both the right and left. Importantly the volume and speed of the traffic that road should be evaluated.

If road signs or markings indicate that approaching traffic should stop at the junction the rider must always comply. If however the junction does not require a compulsory halt the rider should always approach it in the expectation of bringing his or her machine to a complete halt.

On reaching the junction the rider should halt if required to so so and carefully evaluate the traffic in both directions.

It is most important that the rider understands that where his or her vision is limited, by for example, a bend in the road close to the junction, or parked vehicles, not seeing oncoming traffic does not mean that there is no traffic coming. In circumstances such as these extra care must be taken.

If turning left, when the traffic is clear in both directions, the rider should smoothly accelerate, crossing the lane or lanes for traffic coming from the left and turn into the opposite lane.

On bringing the machine upright in the correct position, mid way between the edge and the centre of the road or lane, the rider should continue to accelerate smoothly, then changing gears as necessary until the correct safe speed has been reached.

If turning right the rider should ensure that the road is clear before smoothly turning into the lane at the correct position. Again acceleration should be moderate and gear changes should only be effected when the machine is upright.

If the junction does not require a compulsory halt the rider should only enter it when he or she is absolutely sure that the road is clear and it is completely safe to so do.

When the instructor is satisfied that the rider's competence and confidence is sufficiently developed the manoeuvres can be undertaken without the road being completely clear.

The rider must understand however that when there is oncoming traffic it must be at a distance from the junction and travelling at a speed that will allow the rider to join the carriageway and using only moderate acceleration, obtain the correct speed and position without causing the driver of the oncoming vehicle to reduce speed or take other evasive measures.

Crossroads

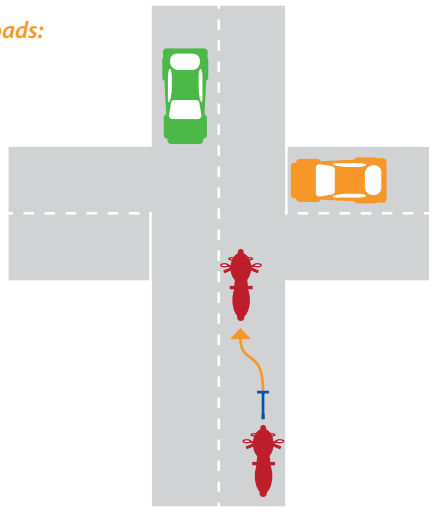
Crossroads, particularly where the rider is approaching a major road on a minor road, need particular care.

The way in which the major road should be approached and negotiated when the rider wishes to turn either right or left, is the same as for a T junction. However when the rider wishes to go straight on there are additional considerations.

If there are two lanes the rider should be in the centre of the right hand lane. When crossing the lanes for traffic from both directions the rider must not be tempted to cross in front of oncoming traffic when it is closer to the crossroads than it would be if the rider intended joining the carriageway in the same direction.

It should never be assumed that because an incoming vehicle is not signalling it does not intend to turn off the major road. If it turns into the road from which the rider is coming it can stop in the middle of the road and impede both the rider's vision and line and if it turns into the road that the rider intends to take it can end up behind the rider travelling at a higher speed.

Crossroads:



The rider must also consider the traffic coming from the opposite direction when determining if it is safe to proceed. Again the fact that the vehicle is not signalling its intention to turn does not mean that it will not be turning left or right.

Roundabouts

The rider should understand the general rule is that the traffic on a roundabout has priority over traffic wishing to enter it.

There can be exceptions to that general rule however. Where traffic lights, traffic enforcement officers, signs or road marking indicate to the contrary, the rider should always comply with their requirements.

The rider should approach a roundabout in a similar way to a T junction or crossroads. It should be appreciated however that at a T junction traffic normally comes from no more than two other directions and three other directions at a crossroads. On a roundabout it can come come four or even five other directions.

Roundabouts often have signs, mounds or shrubs on them. These often hide some of the roads, and the traffic on them, that are joining the roundabout and as such, require extra care.

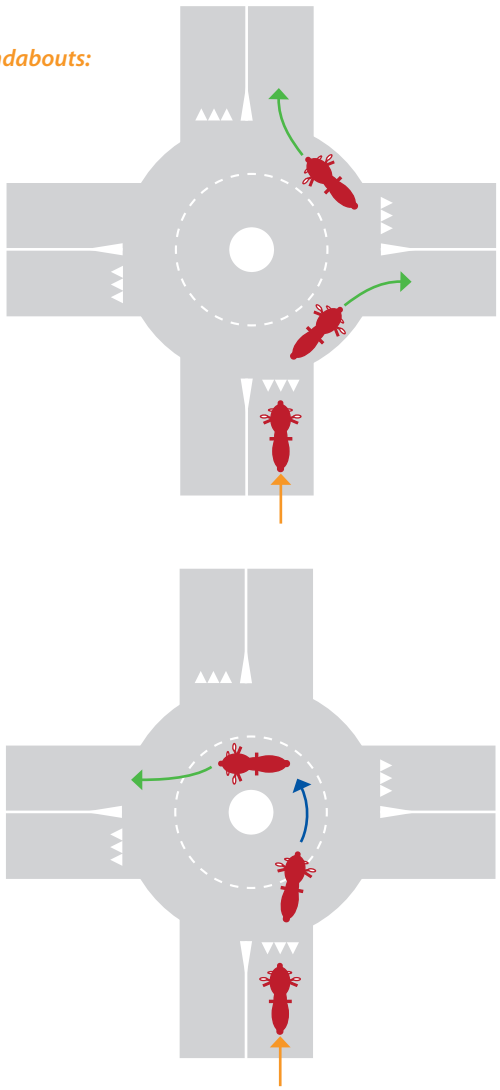
What is markedly different from other junctions however is that on a roundabout all the traffic is going in the same conflict between traffic is generally limited to when vehicles are entering and exiting the roundabout.

The rider should also appreciate that there is a relationship between the size of a roundabout and the likely speed of the traffic on it. Where a roundabout has been put in place of crossroads in an urban area often its circumference is not great and as such traffic speed is slow.

On a large roundabout over a multi-lane dual carriageway however, the speed of the traffic can be high, sometimes illegally so, and again extra care must be taken.

Whilst mini roundabouts are often installed as a so called 'traffic calming' measures. Often they are no more than circles painted on the road and as such vehicles entering them sometimes barely reduce speed. Also the paint used may not have good adhesive properties and their sometimes raised construction require particular care by motorcycles and scooters.

Roundabouts:



The correct position to be in on entering a roundabout with only one lane is in the centre of that lane and on the roundabout that position should be maintained through to the exit with the line taken by the rider only being flattened slightly on entering and exiting.

If there are two lanes the rider should be in the centre of the right lane if turning the right or going straight on and in the centre of the left lane if going to the left. If going to the left that

lane and the correct position in it, should be maintained until the exit before the one the rider wishes to take, when the line should smoothly take the rider into the right hand and the exit.

At an early stage in the approach to the roundabout the rider should check behind then signal his or her intended direction. If that is to the left the signal should be maintained until the desired exit is the next one when the rider should check behind and activate the right hand indicator.

The rider should be looking to the limit point and accordingly adopting a safe speed. The other roads entering the roundabout should also be scanned, as should the road surface at the limit point and, if necessary the line should be adjusted to avoid, for example, inspection covers, poor repairs and diesel spillage.

Controlled junctions

The approach and position practices for the other road junctions also apply when the junctions are controlled by traffic lights. They also apply to other situations where traffic lights can be employed, for example at road works or level crossings over railway tracks.

When approach traffic lights however the rider should also be monitoring their sequence and the consequent movement of traffic. The lights facing the rider should be given priority but the lights controlling traffic from other directions and pedestrians can give indications of impending changes to the lights controlling the approaching machine. This could enable the rider to co-ordinate his or her arrival at the lights and avoid either last minute braking or acceleration.

Similarly monitoring the other lights when waiting for the rider's light to turn green can help the rider to be ready to move. This however should not be at the expense of the wider monitoring of other vehicles and pedestrians.

Under no circumstances should the rider either cross a red light that has just changed from green or a red light that is expected to go green.

The instructor must ensure that the rider knows the national rules governing the signals given by a traffic enforcement officer when controlling traffic.

When encountering such a situation the rider should always comply fully with the instructions given by the traffic enforcement officer without unnecessary delay.

Side junctions

The instructor should explain to the rider that a major cause of motorcycle accidents arise from another vehicle turning out of or into a side road and violating the rider's right of way.

When either a right or left hand junction is identified at the limit point, the rider should evaluate and monitor it. The extent to which traffic on it can be seen and if a vehicle can be seen, what it is likely to do should be considered, and if necessary speed and position should be adjusted.

The rider should never assume that because he or she has seen another vehicle, its driver has seen his or her scooter or motorcycle or, even if the driver has, that the speed of the motorcycle or scooter has been judged correctly.

Similar consideration should be given to a situation where the rider has identified a side road on the right and there is also oncoming traffic. The oncoming vehicle or vehicles should be monitored for the possibility, with or without a signal, of them turning into the side road in front of the rider.

The rider should understand that in no circumstances where he or she thinks that he or she has not been seen by the driver of another vehicle, should the lights of the machine be flashed as a warning. Such a signal can easily be misunderstood as the rider conceding the right of way.

When the rider wants to turn from a major road into a minor road he or she should check behind, signal intention and begin to reduce speed at a safe distance from the junction.

If turning left the oncoming traffic should be carefully monitored and the manoeuvre should only be completed if it is safe to so do. If the rider has to stop the overall width of the road should determine the safe position to be in. If the road is wide enough to allow traffic to pass safely on either side the rider should stop just to the right of the centre of the road. If the road does not allow any traffic from behind the rider to pass safely on the inside, the rider should stop in a position approximately one third from the centre of the road.

Evaluation

The instructor must be satisfied that the rider can safely and competently approach and negotiate the range of junctions.

Particularly that the rider's visual focus is correct and that he or she is looking for the limit point and for other traffic and the condition of the road.

The early recognition of other road users, including pedestrians, by the rider and an appreciation of their likely courses of action, should be apparent.

The rider's judgement of the safe speed, line and road positioning should satisfy the instructor, as should the rider's ability to identify potentially hazardous situations and monitor their development.

Most importantly the instructor should be sure that the ride has the right attitude and that his or her behaviour is responsible always shows due concern for the safety of other road users.

5. Overtaking

This aspect looks at how a rider can safely pass other vehicles.

Preparation and planning

For this aspect the instructor should seek suburban or rural roads with reasonably straight stretches, some of them being dual carriageway and having a moderate level of traffic. They should provide opportunities for instructor and rider to stop safely to for advice and evaluation.

Legal and safety requirements

The rider must be suitable dressed and meet all legal requirements. The instructor must ensure that the rules and road signs and markings that regulate overtaking are understood by the rider.

Preparing and briefing the rider

To overtake another vehicle the rider must know that it is permitted and that can be safely completed within the speed limit.

Importantly the rider must understand that he or she should be able to see past the vehicle to be overtaken and also be seen by the driver of that vehicle and that these requirements will influence the position in relation to, and distance from, the other vehicle.

The instructor should brief the rider on possibilities such as traffic emerging from side roads or hidden hollows in the road ahead and the effect of side winds and turbulence and spray from the vehicle to be overtaken.

The rider should also be advised that when contemplating overtaking more than one vehicle, the possibility of one of the vehicles also pulling out must be considered.

The experience

Approach, position and distance

Ideally the initial overtaking manoeuvres should be undertaken on a dual carriageway. This will enable the rider to develop the correct approach, position and distance practices without having to worry about oncoming traffic.

The rider should remain in the right hand lane until making the overtaking manoeuvre. On approaching the vehicle it is important to check behind and continue to do so at frequent intervals and before starting to overtake. The rider should also be looking to the vehicle to be overtaken and scanning beyond it.

If for any reason the rider feels that it may not be safe to overtake then he or she should never attempt to so do.

The closing speed to the vehicle in front should be evaluated and the rider should gradually reduce speed to match the speed of the vehicle when arriving at the correct distance from it and in the correct position relative to it.

The distance should never be less than than it would take to stop at that speed using only moderate braking (remember the 2 second rule, 3 seconds if the road is wet).

The correct position is where the rider can be seen by the driver of the vehicle to be overtaken and other vehicles and where the rider has the maximum view of the road in front of the vehicle to be overtaken. This will be close to the left hand side of the lane without moving into the outside lane.

When the checks behind indicate that it is safe to overtake without impeding any faster vehicle in either lane, the rider can indicate his or her intention and pull out smoothly, using moderate acceleration to pass the vehicle without undue delay.

Overtaking safely

When overtaking another vehicle the rider should be in the middle of the left hand lane. If however it is wet and the vehicle being passed is generating spray the rider should move further out.

The same response should be made if significant turbulence is experienced and particular care should be taken on reaching the front of the vehicle if there is a strong crosswind.

When the vehicle has been passed the rider should remain in the left hand lane until the right hand lane can be resumed with a sufficient safe distance between the rider and the vehicle that has been overtaken.

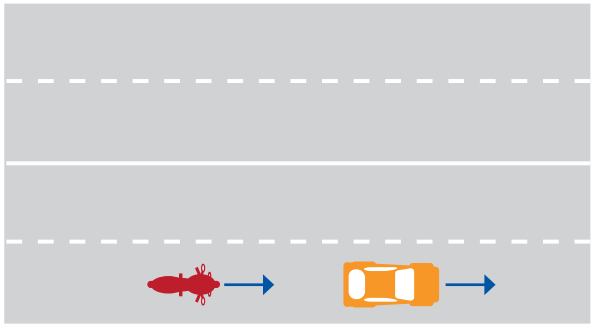
When this is so the rider should again check behind, signal the intention and smoothly return to a position in the middle of the right hand lane.

Overtaking a number of vehicles that are travelling close to one another requires particular care by the rider.

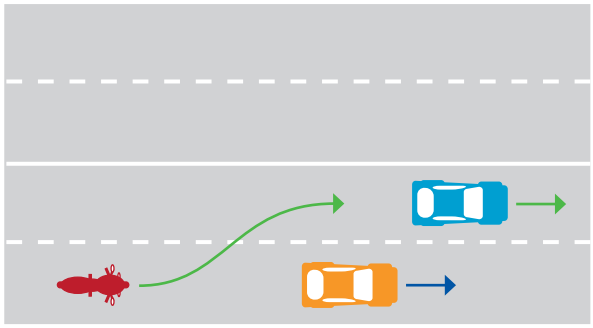
If there is sufficient space between the vehicles to enable the rider to safely return to the right hand lane and maintain correct distances then this should be done. The correct position being where the rider can be seen by the driver of the next vehicle to be overtaken.

If however there is insufficient space between the vehicles the rider should remain in the left hand lane until the lead vehicle has been passed.

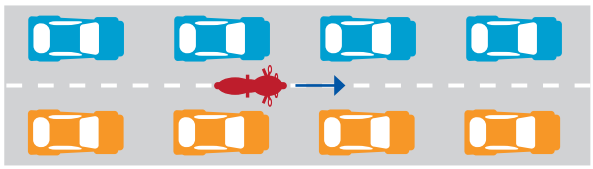
Position and distance:



Overtaking safely:



Filtering:



Rider < 15 Kph

Traffic < 10 Kph

In these circumstances the rider should pay particular care to one of the vehicles pulling out. Should this happen the rider should not accelerate through what would be an ever narrowing gap but should brake and then assume the correct distance to the vehicle that pulled out.

Under no circumstances should the rider exceed the permitted speed limit to complete an overtaking manoeuvre.

Oncoming traffic

When the instructor is confident that the rider can competently and safely manage overtaking situations on dual carriageways the experience can be extended to dealing also with oncoming traffic.

The rider must understand that when overtaking on a dual carriageway the primary visual focus is on the vehicle being overtaken. When overtaking on a single carriageway however it is the oncoming traffic that is the crucial focus.

This does not mean that the rider can ignore the vehicle that he or she wishes to overtake. Indeed all the skills and knowledge previously applied are needed in addition to the crucial requirement of looking for oncoming traffic.

The correct distance from and position in relation to the vehicle to be overtaken are essential to enable the rider to see oncoming traffic at the earliest opportunity.

So placed the rider should be looking to the limit point and only when that is at a sufficient distance to enable the vehicle to be overtaken safely and only when the opposite lane is completely clear of oncoming vehicles, should the rider consider overtaking.

Before initiating the manoeuvre the rider should have checked behind and double checked that there are no oncoming vehicles, paying particular attention to the possibility of them being hidden by a dip in the road or emerging from side roads.

When satisfied that the road is clear and that the vehicle can be overtaken safely, the rider should signal the intention and pull out smoothly, using moderate acceleration to pass the vehicle. At no point should the speed limit be exceeded or road signs or markings ignored.

It sometimes possible on long straight roads where there are no restrictions to the rider's vision, to safely overtake a slow moving vehicle when oncoming traffic can be seen in the distance.

However the rider should only consider such a manoeuvre when he or she has carefully evaluated the closing speed of the oncoming vehicle and is sure that its distance is sufficient to enable the manoeuvre to be completed within a significant safety margin.

In no circumstances should the rider pull out to overtake if there is any possibility that the driver of the oncoming vehicle would have to reduce speed or take any other evasive action.

On long, straight roads the rider should pay particular attention to the possibility of oncoming traffic being hidden by a dip in the road, recognising that such a hollow can also contain a side road, from which traffic can emerge.

The rider should also understand that adverse weather conditions, such as rain and fog, and at dawn and dusk, can make it more difficult to see oncoming traffic, particularly if the lights of the vehicle are not on. In such circumstances the rider must take particular care and make allowances for such eventualities when making decisions.

Filtering

Filtering, that is when a motorcycle or scooter moves through lines of stopped or slow moving traffic, is not allowed in all countries. Where it is allowed, by regulation or by usual practice, it should be explained and, if possible, experienced by the rider. Where national rules or guidelines exist they must be followed by the instructor and rider.

If however filtering is permitted but its practice is not codified, the rider should only filter when taking extreme care and giving due consideration to the other vehicles.

When the lines of traffic are moving at speeds of 10 kph or more the rider should stay within the line. If however the traffic is moving intermittently and when moving does not exceed speeds of 10 kph, the rider can carefully ride between the lines. If there are more than two lines of traffic the rider should go between the two furthest lines to the left.

The rider should have his headlight on and indicator flashing. The rider should never go more than five kph faster than the traffic through which he or she is moving.

The rider should always be aware of the possibility of a vehicle changing lines without checking behind. As this will often mean that the vehicle will not be able to fully join the intended line the rider should always be able to safely brake to a stop if it were to happen.

When the driver of another vehicle, having seen the rider, makes room it is good practice and manners to acknowledge this with a wave of the hand or foot.

Evaluation

The instructor must be satisfied that the rider can safely and competently overtake.

That the rider is correctly judging the speed of other traffic and is taking the correct position to it at a safe distance.

The rider should be looking for and seeing oncoming vehicles, the vehicle to be overtaken and vehicles behind, and is making sound judgements having due regard for his or her safety and the safety of other road users.

6. Motorways

This aspect considers the practices for safely joining, riding on and leaving a motorway.

Preparation and planning

In some countries access to motorways are prohibited to riders who have not passed their licence test or to riders of machines below a specified engine size or performance.

If this is the case, or where there is no motorway close by, the instructor should seek to find a stretch of dual carriageway road which has features similar to a motorway, in particular one that has access and exit slip roads with acceleration and deceleration lanes.

If this also is not possible, the instructor should thoroughly brief the rider on what he or she can expect and what is required when they can legally ride on a motorway.

In these circumstances the instructor can point out to the rider the benefits of a motorway session with the instructor after the rider has passed the A licence test.

Where a rider is unable to experience riding on a motorway, or a dual carriageway with similar features, one thing that the instructor can consider is taking the rider on to a motorway as a pillion passenger.

Such an experience will at least allow the rider to understand the points covered in the briefing, in their context.

The instructor must ensure that such an arrangement is allowed by his or her insurance and the rider understand what is required of a safe pillion passenger (see Aspect 8).

The instructor should not forget that his or her riding skills will undoubtedly be much greater than those of the rider and, as such, should always ride at a speed that the rider can relate to and in a manner that is sets a good example and shows due regard for other road users.

Legal and safety requirements

The rider must have a licence and be on a machine which allows access to motorways and must meet all other legal requirements.

The instructor must ensure that the rules and road signs that are specific to motorways are understood by the rider.

The rider, when performing the usual safety checks, should pay particular attention to tyre condition and pressures.

Preparing and briefing the rider

The instructor should ensure that the rider understands that the speed of traffic on a motorway is generally higher than on other types of roads.

This will mean that additional care will need to be taken when assessing the speed of other vehicles. This particularly applies to vehicles approaching the rider from behind.

It also means that the rider must be thinking ahead and should plan and initiate any manoeuvre earlier than he or she would on other roads.

The experience

Joining the motorway

On joining the slip road of a motorway the rider should expect to encounter bends and should be travelling at a moderate and safe speed. Whilst some slip roads offer a gradual curve others can be convoluted with tight bends in both directions, often with tightening radii.

As soon as the main carriageway of the motorway can be seen by the rider, he or she should begin to evaluate the speed and density of the traffic on it.

As soon as is safely possible and certainly on reaching the acceleration lane the rider should check behind, signal intention and increase or reduce speed to enable the inside lane of the main carriageway to be joined safely at approximately the same speed as the traffic on it, as and when there is a sufficient gap.

During the manoeuvre the rider should frequently be checking behind and should join the main carriageway only when so doing will not require any approaching vehicle to brake or take evasive action.

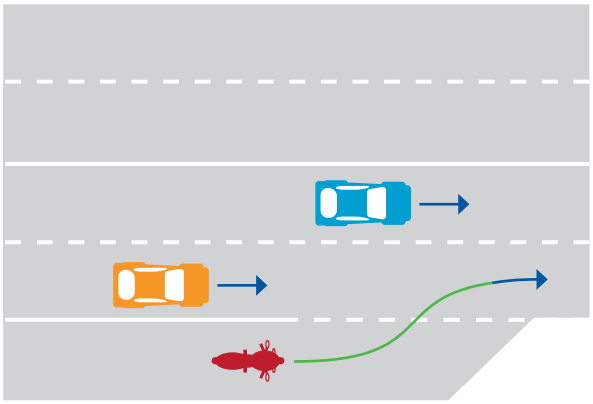
The rider should remain on the inside lane for a period of time to adjust the motorway conditions, particularly the higher speeds.

Overtaking

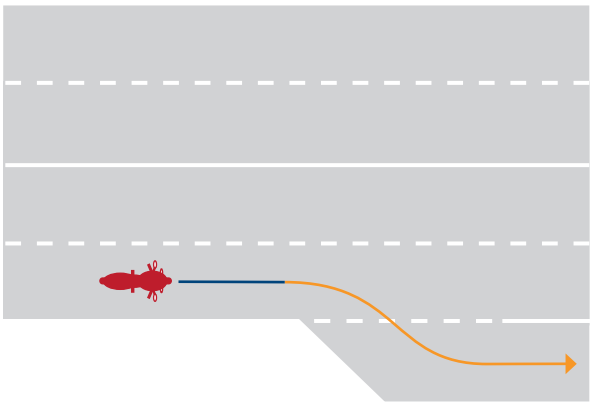
The rider should only move onto an outside lane when it is necessary to overtake a slower moving vehicle and having checked behind, is sure that it is safe to so do.

The procedures for overtaking are as described and experienced for dual carriageways under the *Approach, position and distance* and *Passing safely* headings in Aspect 5. Extra care however should be taken to allow for the higher speeds on motorways.

Joining the motorway:



Leaving the motorway:



The rider should carefully check behind and if clear, signal the intention and smoothly move into the left hand lane, if necessary using moderate acceleration to pass the vehicle, returning to the lane a safe distance in front of the vehicles.

If it is not clear behind the rider should adjust speed so as to arrive at the correct safe distance from the vehicle, at the same speed as the vehicle.

In the correct position, which allows the rider to see and to be seen, the rider should frequently check behind and when it is clear, signal intention and smoothly move into the left hand lane and using moderate acceleration, pass the vehicle.

Extra care should be taken when encountering cross winds, turbulence or spray and under no circumstances should the permitted speed be exceeded.

Leaving the motorway

One of the first things a rider needs to know to be able to safely leave a motorway, is where he or she wants to go. Knowing the exit number from having consulted a map is important, rather than relying on a place name, which can often appear on three or more exits The exit number is also valuable in that it allows the rider to count down to the exit he or she wants to leave the motorway at.

When the rider knows that the next exit is the one and is not in the inside lane, he or she should smoothly move into it, having first checked behind and signalled the intention.

When in the inside lane the rider should match the speed of its traffic or reduce speed slightly if so doing will not impede any following vehicle.

The instructor must ensure that the rider understands that the deceleration lane is where he or she should reduce speed to the safe level to negotiate any bend or curve and subsequently join the non-motorway traffic.

Where there is a bend or curve it is usually indicated by a series of arrows and often the is a sign indicating the maximum speed at which it can be safely taken.

The rider should always treat the indicated maximum speed with caution as it is often a safe speed for a car but one that would test an inexperienced motorcycle or scooter rider.

This is particularly important in that the rider must understand that his or her judgement will likely still be influenced by the higher motorway speeds and having decelerated to a speed that feels safe it could still be too fast for the approaching bend.

This should also be born in mind by the rider on returning to non-motorway roads and traffic. The rider should always take extra care and ride careful until the effect of the higher motorway speeds dissipate.

Evaluation

If the rider has been able to ride on a motorway the instructor must be satisfied that he or she is able to safely join and leave the main carriageway, having judged the speed and frequency of the traffic and adjusted speed accordingly.

The rider must be able to adjust to and from the higher speed of the traffic, identify situations at an early stage and monitor their development, particularly with regard to vehicles approaching from behind the rider.

The instructor must be sure that the rider always behaves in a safe manner and with a responsible attitude, showing due regard to his or her safety and to that of other road users.

If the instructor has only been able to relate the experience of motorway riding to suitable dual carriageway roads, or to carrying the rider as a passenger on a motorway on his or her machine, then the instructor should ensure that the rider fully understands the differences between that limited exposure and the real thing.

In the event of the instructor only having been able to address motorway riding in theory, then the rider should be able to explain to the instructor that he or she understand the the skills and knowledge the the demands and challenges of riding on a motorway will bring.

7. Anticipation

This aspect addresses the rider's understanding of the possible behaviour of other road users and pedestrians and the likelihood and consequences of hazardous road and traffic situations.

Preparation and planning

The instructor in preparing for this aspect should realise that actually exposing the rider to situations where he or she can actually anticipate the behaviour of other road users and potential hazards in traffic situations, will not be easy.

This does not mean however that the aspect should be mainly addressed through the briefing of the rider. The instructor should seek routes where the road layout, the traffic volume and mix, and interface with pedestrians will enable his or her briefing to be explained to and understood by the rider in context.

As this will require extensive explanation and evaluation breaks on the routes chosen, they should have features that enable this to be undertaken in safety.

Legal and safety requirements

The instructor should, as usual, verify that the rider and machine meet all legal requirements and ensure that the rider is suitably attired and has conducted the safety checks on his or her machine.

Preparing and briefing the rider

The instructor should extensively brief the rider before commencing to ride this aspect. The rider should understand that anticipating behaviour and situations is a key skill in riding safely and that it can only be developed by thinking beyond the immediate situation and understanding it from the perspective of other road users and pedestrians.

The instructor must explain that it is very rare for a crisis situation to just happen. There are usually a number of indications or a combination of circumstances, which if the rider is aware of them, can warn the rider to pay particular attention and moderate his or her behaviour.

The rider should understand that when an anticipated situation does not develop or when other road users do not behave as anticipated, it does not negate the value of anticipation. Because a child doesn't run into the road after a ball one time doesn't mean that another child will not on another occasion. Being aware that something could happen is the prerequisite to safely managing it when it does.

The experience

The instructor and the rider should ride together in a range of locations and/or circumstances where the instructor can explain the process of identifying potentially hazardous situations and anticipating developments within them.

Having ridden a location or experienced a situation, when it is safe to so do, the instructor should stop and talk it through with the rider. In this debriefing the instructor should seek to understand what was seen by the rider and the extent to which potentially hazardous situations were identified and their possible developments appreciated. Examples of locations and situations are given below.

Riding in town

Buses and pedestrians

When following a bus the rider's distance from it and position to it is important. Not only must it be sufficient to allow safe braking it should also allow the rider to see beyond the bus so that he or she can identify, for example, an approaching bus stop, pedestrian crossing or traffic lights.

In addition the rider should be monitoring the bus itself and be aware not only of obvious indications, such as turn signals and brake lights but also of clues to likely manoeuvres.

For example if a passenger is seen to rise from his or her seat that can be an early warning that the bus will be stopping. Another example could be when a bus is stopped and the rider is intending to pass it. Obviously the direction indicators must be monitored as should be the front wheel as often it can be seen to turn before the driver indicates or moves off.

When close to buses that are at or approaching a stop the rider should also be monitoring the behaviour of pedestrians. Firstly for any indication that that they may want to catch the bus and not take due care in their haste to so do and, secondly, for the likelihood of one or more trying to cross the road from in front of the bus where the rider would would not have seen them until they emerge. Due care should always be taken, with speed and position being adjusted, particularly when schoolchildren are in the vicinity.

Children

Children should always be closely monitored as it is possible that they will do something unpredictable. Particular attention should be given to small children, the toddler with his or her mother and a baby brother or sister in a pushchair always merits a rider's particular attention.

Children in the vicinity of a school must also be closely monitored and not only in the area of a pedestrian crossing that is usually right in front of the school and is likely to be controlled by a warden.

The junctions that the children must cross on their way to school are less likely to be supervised and the child that is late or hurrying to get home to see a favourite television programme will often forget the dangers that stepping onto a road can hold.

Children at play, in areas both formal and spontaneous, require close attention on the part of the rider. A ball coming onto the road is likely to be followed by a child intent only on retrieving it.

Heavy traffic

Even though there is a relationship between traffic density and speed and it is usual for traffic to move at a slower speed the denser it becomes, the rider should understand that this can often result in drivers of other vehicles being prepared to take risks and not comply with traffic rules and regulations.

The rider should be aware of this and increase attention and adjust behaviour accordingly.

For example the driver of a car who has been waiting to join a stream of virtually continuous traffic for some time becomes increasingly likely to force a way into it, particularly when an approaching motorcyclist is seen as not occupying all of his or her part of the road.

Often it is in the best interests of the rider to reduce speed and indicate to the car driver to join in front of the motorcycle. Such an action not only avoids a potentially hazardous situation developing it will also often result in the driver repaying the courtesy to other motorcyclists.

Controlled junctions

On entering any junction, particularly one where traffic lights will require the driver of a vehicle or a pedestrian to wait until the the sequence allows them to proceed, a rider should pay particular attention.

Unfortunately they are not always prepared to wait, particularly if the light has just changed against them. Such behaviour can pose problems for a motorcycle with its quicker acceleration and the rider should be aware.

As part of the process of monitoring the vehicles entering and within the junction the instructor should ensure that the rider pays particular attention to vehicles who appear to not be sufficiently moderating their speed on approaching the junction.

Attention should be paid to vehicles that are in the middle of a junction waiting to turn across a stream of traffic.

Pedestrians who are less likely to be familiar with the sequences of the lights should be closely watched. Even where there is provision within the sequence for pedestrians to cross, they can often act on changes to the lights that are directed at the traffic.

Monitoring the road surface

The instructor should explain to the rider that applying anticipatory skills also extend to monitoring the road's surface for potentially hazardous situations.

Examples that could be shown can include areas where buses frequently stop and start and where there is a resulting residue of oil on the road. Such locations can also have deep ruts in the road surface caused by the weight of the vehicles.

Roads needing repair, with potholes and uneven surfaces, together with roads that have been poorly repaired, such as with smooth bitumen, should be looked for by the rider. Also roads where the markings have degraded or inappropriate shiny paint has been used can be pointed out by the instructor.

The rider should understand that having identified a potentially hazardous situation he or she should anticipate the possibility of being required to brake or take other evasive action and adjust speed and line.

Roundabouts used by many heavy goods vehicles, particularly when situated close to a service station, require particular attention as spilt diesel fuel could be encountered. If it is then there is a high likelihood of losing control. If such a possibility is anticipated and speed and line adjusted accordingly, actually finding spilt diesel can be safely managed.

Wet roads always require care on the part of the rider, particular problems should be anticipated when the rain has not been sufficient to wash the residue of oil and rubber from the road.

Riding in the country

Anticipation is also as important when the rider is enjoying the pleasures of riding in more rural settings. These can bring the rider into contact with situations and vehicles that are unlikely to be encountered in town.

Narrow, winding roads

Rural roads are usually narrower than their urban counterparts. This requires care from the rider as it is not unusual to find an oncoming vehicle well over the centre of the road. This particularly applies to commercial, articulated lorries.

Country roads frequently have many curves and bends and there is often a temptation for drivers and riders to enjoy them and to flatten the curve or bend as a consequence. As was covered in Aspect 3 flattening a bend can have the benefit of extending the rider's vision. This however can be limited when the road is closely bordered by high hedges and trees and banks.

The instructor should ensure that the rider understands these considerations and approaches any situation, where width is restricted and vision is limited, on the basis of anticipating meeting an approaching vehicle encroaching on to his or her side of the road.

The rider should also be looking for the earliest possible indication of oncoming vehicles. Where the level of a twisty road also rises and falls it is sometimes possible to see beyond the immediate limit point and when this occurs the rider should scan for both oncoming traffic and indications of the direction the road may take.

Any information that the rider has gained however should not be taken as more than an indicator to assist anticipating possible developments.

If the road was seen to be clear it does not mean that there is not an articulated heavy goods vehicle blocking the road between the rider's present position and where he or she was able to see and although the road may be going at 90 degrees to the left of the rider's present position, that does not mean that there is not a series of S-bends to negotiate before the point seen has been reached.

Farms and agricultural vehicles

The rider should appreciate that farms and agricultural vehicles require particular care on the part of other vehicles and especially powered two-wheelers.

The instructor should explain that field entrances through which farm vehicles have to pass, are usually narrow and often require a tractor and trailer to swing wide, using both sides of the road.

Farm trailers often have high and wide loads which not only leave the farmer blind to traffic behind but can also hide the direction indicators on the tractor and if, as is sometimes the case, the indicators are not working on the trailer, then there will be no warning of turning into a field or farmyard.

Farm vehicles often leave substantial deposits of mud on the road. If it is raining the result can be a very slippery surface and

braking and other avoidance manoeuvres can prove very hazardous. Also if the motorcycle is following closely behind another vehicle the resultant spray can severely restrict the rider's vision.

Even when dry the deposits on the road from farm vehicles can cause problems for motorcyclists. Hitting a large and solid sod of earth which has come from the deep groves in the large tyres of a modern tractor can cause real problems for the rider, even at low speeds.

The instructor should stress the need for care in the vicinity of farms. Overtaking farm vehicles requires attention and the need to anticipate the possibility of unsignalled manoeuvres and sudden changes to the condition of the road surface should be appreciated by the rider and speed and position should be adjusted accordingly.

Weather and the road surface

Whilst country roads often suffer similar maintenance and repair problems as those that can cause problems for riders in urban areas, they are also susceptible to a number of particular hazards arising from weather conditions.

Not least of these can arise from heavy rain washing gravel and sediment into the road. The road itself can sometimes become a watercourse itself, due to the absence of a drainage system.

Following storms and heavy rain, even after the road has dried, the rider should be monitoring the road's surface and should anticipate the possibility of patches of unstable material which could make braking and cornering difficult.

The effect of strong winds are not only a problem when they blow across a road and the rider loses the shelter of a bank or hedge.

Leaves and branches blown from trees can also pose problems. The rider should understand that this can especially be a problem in the autumn when trees are naturally losing their leaves.

A carpet of leaves on the road, particularly if damp, have the adhesive characteristic of ice or spilt diesel and the rider should exercise care when approaching trees which overhang the road, particularly when the road curves.

If leaves require particular vigilance in the autumn then in the following months the rider should anticipate ice, especially black ice which, as its name implies, is difficult to see and often forms on the road close to or under trees. Ice will also often form on bridges.

When it is close to or below freezing the rider should anticipate ice forming and recognise it as more likely on rural roads as they are less likely to be treated than roads in towns.

Evaluation

The instructor will recognise that this aspect is one of the more difficult on which to asses the rider's performance and development. Anticipation is as much about an attitude of mind, almost a philosophy, as it is about managing a motorcycle.

The rider should understand that this aspect's intention is to provide a sound foundation of basic anticipatory skills and knowledge that can develop with experience.

The instructor should explain that accident research generally shows that it is during the first eighteen months or so after a rider has obtained an A category licence that he or she is most vulnerable. During that period the rider becomes progressively more experienced in managing potentially hazardous traffic situations.

If the rider has acquired a basic anticipatory skills and knowledge base it will have the effect of reducing the rider's initial vulnerability in that period and give a much better chance of maturing as a rider without personal injury or machine damage.

Whilst the instructor should be able to read from the speed, positioning, attitude and behaviour of the rider whether or not a potentially hazardous situation has been recognised, this should be able to be confirmed in the debriefing.

The rider should be able to talk the instructor through a recent experience. If a busy town centre has just been ridden through the rider should be able to refer to particular situations. For example the mother and child waiting and then crossing the road, or the bus slowing to allow another bus at a stop to move away.

If the rider is regularly failing to identify potentially hazardous situations the instructor should spend more time briefing the rider and they should stop more frequently for debriefing. If an effective instructor to rider communication system is available then the instructor can give a commentary, identifying situations to be monitored and likely developments to be anticipated.

As the rider gains experience he or she should be able to identify a number of potential hazards within a situation. For example at a busy junction, where both traffic and pedestrians are controlled by lights, the rider should be able to describe to the instructor's satisfaction, aspects of the mix of traffic from various directions and remember in some detail the type and number of vehicles waiting to turn to their left in the centre of the junction and whether pedestrians were waiting to cross or actually crossing.

8. Riding together

This aspect considers how to safely carry a pillion passenger and how to ride in a group.

Preparation and planning

This aspect does not require a great deal of planning on the part of the instructor.

For carrying a pillion passenger a thorough explanatory briefing and a demonstration followed by a ride on a not very busy road should be planned for.

If however, due to either national regulations or insurance limitations, it is not possible for a rider without a full licence to carry a passenger on public roads, then the instructor should consider organising an appropriate session on a training ground.

For riding in a group the instructor should plan to thoroughly brief the rider. Should it be felt advisable to give the rider an experience of riding in a group then the number of inexperienced riders involved should not be more than three and then ideally there should also be a second instructor or experienced rider.

Legal and safety requirements

The instructor must ensure that all the national regulations concerning carrying a pillion passenger and riding in a group are understood and complied with and that his or her insurance cover and the insurance cover of the rider cover such eventualities.

As always the rider must be suitable attired and he or she and the machine must meet all legal requirements.

Preparing and briefing the rider

The instructor must ensure that the rider has been thoroughly briefed and does understand the main principles and likely consequences of both carrying a pillion passenger and riding in a group before he or she actually experiences them.

Importantly the rider must understand that the weight and movement of a pillion passenger can and will effect the handling of the machine and the importance of the passenger also understanding how they should behave.

The rider should also understand that group riding requires additional skills and that distance and position are crucial when riding with other motorcyclists.

The instructor must emphasise the importance of all the riders knowing the rules and what is expected of them, this being essential to ensure that group riding is an enjoyable and safe experience.

The experience

Carrying a pillion passenger

The instructor should explain that the first thing is for the passenger to be able to do is to safely mount and dismount and demonstrate to the the rider how to so do.

The machine should be with both wheels on level ground with the engine switched off.

The instructor sitting on or standing over the machine,should have both feet firmly on the ground and the handlebar brake lever held fully on. Whether the instructor sits on or stands over the

machine will primarily be determined by his or her stature and ability to hold the machine steady as the rider/passenger mounts.

The machine should be firmly braced by the instructor's arms and legs and, when safe to so do, the rider should be instructed to mount as a pillion passenger.

If facing the right side of the machine the rider/passenger should firmly grasp the instructor's right shoulder, placing his or her right foot on the pillion footrest with toes facing forward. When the instructor indicates that he or she is ready, the rider/passenger should rise up and swing his or her left leg over the saddle and then place the left foot on the footrest and sit on the saddle, close to the instructor.

If mounting from the left of the machine the instructor's left shoulder should be grasped and the rider/passenger's right leg should be swung over the saddle.

The hands of the rider/passenger should grasp the hand holds for the pillion passenger, or the edge of the seat or a similar bracing point and when he or she is settled and comfortable, indicate to the instructor that it would be safe to move off.

When getting off the reverse procedure is adopted. It is most important however that the rider/passenger on dismounts when the instructor has indicated that it is safe to so do.

When the rider/passenger has mounted and dismounted a number of times, from both sides of the machine, and the instructor is confident that he or she has mastered the technique, their positions can be reversed.

Then when the instructor is satisfied that the rider understands and can practice the procedure and is able to hold the machine steady while the instructor has been acting as a pillion passenger mounting and dismounting, they can move to carrying a passenger on a moving machine.

The instructor must ensure that the rider understands the importance of the passenger not making movements that will effect the direction and stability of the machine when it is moving. Importantly the passenger should not change his or her position in relation to the machine or alter pressure on the footrests or hand holds while the machine is manoeuvring.

With the rider as the passenger on the machine, the instructor should demonstrate this in a controlled and moderate way. Travelling in a straight line at no more than 25 kilometres an hour, when indicated to so do by the instructor the rider/passenger should move his or her behind to the left or right on the saddle and feel its effect on the machine.

Following this two other situations can be experienced. Again with the machine travelling at 25 kph in a straight line and on the indication of the instructor, the rider/passenger can lean his or her body from the waist, to the left or right. On another occasion the rider/passenger can put extra downward pressure on one side to the hand hold and footrest.

When the instructor is satisfied that the rider/passenger understands the effect that his or her movements can have on the machine, their positions can be reversed.

With the instructor as a passenger the rider will need to make a number of adjustments to the way he or she normally rides. The balance of the machine will be different with the extra weight of the passenger further back and higher. Also extra power will be needed when moving off and gears will generally need to be changed later than when riding alone. Braking requirements will also change with more pressure being needed to slow or stop the machine with the weight of two people on it.

The instructor should ensure that the rider understands that when braking firmly problems can be caused by the pillion passenger sliding forward on the seat into the rider. This should be avoided by the passenger sitting close to the rider and using the hand holds and footrests to brace against deceleration.

The rider should understand that in no circumstances should a pillion passenger be carried on a machine without a seat or footrest specifically for the passenger.

Riding in a group

The instructor should explain to the rider that riding in the company of other motorcyclists requires additional skills and care to that exercised when riding alone.

Importantly the rider should continue to make decisions based on his or her own judgements regarding what is a safe speeds into and through curves and bends and what are the required braking distances.

Whilst the speed and position and the distance to the riders in front should always be monitored the rider should not focus on them and depend on their speed and position judgements being right.

In no circumstances should the rider pass the point where he or she feels personally confident and competent and within the machine's performance envelope. If in doubt the rider should always slow down and maintain his or her own pace.

With very few exceptions riders look after other riders and if the riders in the group are not prepared to ride at the speed of the slower rider then they are not worth riding with.

The instructor should also explain that whilst there is not a universally agreed answer, the question of how many riders make a group is important.

Whatever the number, be it two or twenty, there are certain safe practices that should always be followed.

It should be agreed who will lead and what the approximate speeds should be. The leader should know or should have planned the route.

All the riders should know the route plan, or at least the main points on it, and where the fuel stops are planned.

The slower rider or riders should be positioned after the leader and the faster riders should be to the rear.

If the riders become separated, for example by traffic lights or at a roundabout, the leading rider or riders should stop and wait for the others at the first safe stopping place. The following riders should know that this practice will always be followed and that they do not have to ride faster to catch up.

If there are more than four or five riders in the group then they should stagger their riding positions relative to one another.

The leader should be approximately two -thirds of the way out from the near side of the carriageway, with the following rider being one-third of the way out. The third rider should be in the same position as the leader, and so on.

Whilst these positions can be maintained on straight roads or even gradual curves, under no circumstances should the group attempt to maintain the formation in more complex road layouts, for example through bends or around roundabouts.

The instructor should advise the rider of any national or traffic authority regulations regarding larger numbers of motorcyclists riding together. Official approval for a group above a certain number may be required. Such requirements can also include the marshalling arrangements.

Unless it is specifically permitted riders from within the group should not attempt to control other road users.

Evaluation

The instructor should be able to demonstrate that he or she can safely be carried as a pillion passenger and can competently control the machine with a pillion passenger on it.

The rider should also be able to explain to the instructor that he or she knows the needs and obligations of riding in a group.

9. Journey planning

This aspect addresses the need to plan for and evaluate the demands of intended journeys.

Preparation and planning

Whilst this aspect is considered within the Traffic interface element it cannot be actually addressed in the context of preparing for and undertaking a ride on a public road or indeed, on an off-road training ground.

Whilst the practical steps of planning a route can be covered by the instructor within a briefing, issues such as whether the motorcycle or scooter should be used for a particular purpose or in a particular way will need different approach.

One way would be for the instructor to discuss these considerations with the rider. Beginning each consideration with a question and developing the discussion in the light of the rider's response.

In so doing the instructor can recognise that the rider's life attitude and values will determine to a large extent influence his or her response.

Route planning

The instructor should ensure that the rider understands that when he or she has obtained an A category licence, horizons will expand dramatically.

Whilst the rider will undoubtedly know the locality and be able to find the way around and across the home town, he or she will soon be in locations that are unknown and without preparation, will be dependent upon often inadequate road signing or stopping to ask someone the way.

The rider should appreciate that such a situation can be hazardous. Looking for direction signs or street names can result in less then adequate attention being paid to the primary demands of the traffic. Seeing the searched for street name at the last moment should never precipitate a sudden and, to other road users, unexpected manoeuvre.

These problems can be minimised, even avoided, with forethought. By consulting a map the road and the junctions needed reach the intended town can be identified.

Consulting a street plan can give a good idea of the location of the final destination, particularly in relation to a major feature, such as the railway station, which will be sign posted, will all save time and stress and, importantly, the rider will be safer.

Longer journeys will require similar preparation which by their very distance will be complex and difficult to remember.

The instructor should demonstrate how such a route could be planned, identifying in sequence the main towns, considering options, such as using a motorway or taking a scenic route or using a bypass or passing through a town centre.

When a plan has been identified the rider should be able to construct it in a way that will allow quick and easy reference during the journey. This could be a list showing the essential information at each stage. For example the direction on to and the number of the road to be taken to the next town, for example left onto N4 to Wavre.

The sequential list can then be clearly written out and put into a plastic envelope and stuck with an easily removed tape, on top of the petrol tank.

Strategic decisions

The instructor should seek to raise with the rider a number of issues regarding how and why his or her machine could be used when the A category licence has been obtained.

The instructor could begin by asking the rider how he or she sees themselves. Do they have a strong, forceful personality; are they a considerate, caring person, do they believe that they are reticent or shy?

If, in the light of the rider's attitude and behaviour in the course of the initial rider training programme, the instructor feels that the rider has not been very accurate in his or her reply, this can be discussed with the instructor giving particular examples.

At an appropriate point the instructor should ask the rider if they believe that their personality will have an effect on how they will behave on the road and, if so, whether they believe that it will make them less or more likely to have an accident.

If there is a belief that the rider's personality could have a negative effect then the instructor should discuss with the rider how that could be managed.

Such a discussion could take place within a number of scenarios that could be prompted by further questions by the instructor.

For example the instructor could ask if the rider would use the motorcycle or scooter to go to a bar or club to meet friends and then discuss the social pressures that would be on to take alcohol and the possibly disastrous consequences of so doing.

The rider could also be asked if he or she would consider an alternative means of transport if their motorcycle or scooter was felt to be an inappropriate mode for a planned journey, due to, for example, the distances involved or inclement weather.

The instructor should understand that issues such as these will touch upon the rider's intrinsic life values. These will have been formed in childhood and are unlikely to be changed within the learning process required to safely ride a motorcycle.

If the rider is by nature an aggressive and selfish person, or alternatively, is timid and hesitant then these traits could materialise when he or she is riding in traffic.

The instructor should explain to the rider that understanding the dangers that are inherent in certain attitudes and behaviour does at least give the him or her an opportunity to address them.

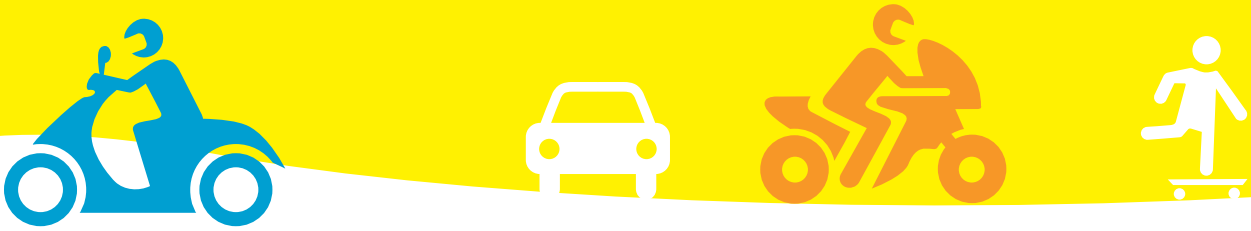
Developing a riding style which seeks to contain such behaviour is good sense. Riding a motorcycle or scooter can be as much about habit as it is emotion and good habits can constrain negative emotions.

Evaluation overall

With the Journey planning aspect addressed the Initial Rider Training should have been completed. At each aspect and element the instructor should only have moved on when he or she considers that the rider has attained a reasonable level of competency and confidence.

At this point the instructor should be satisfied that the rider has the necessary skills and knowledge to safely ride a motorcycle or scooter on today's roads and accordingly be able to recommend or authorise the rider to take the national competency test for an A category licence.

Most importantly the rider should not only be able to competently ride his or her machine but should have a good awareness of hazards that will be met and how to avoid, minimise and manage them and understand that his or her attitude and behaviour will be the prime determinate in ensuring his or her and other road users safety.



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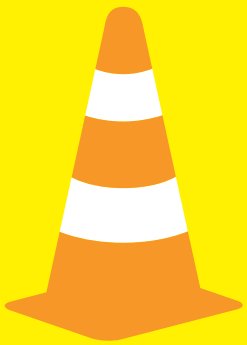

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