Nordic motorcyclists and a future 4th EU Driving License Directive

Nordic Motorcycle Council - NMR

The Nordic Motorcycle Council, NMR, is a coordinating body for the Nordic national motorcycle organizations that organize road riding motorcyclists. NMR was founded in the mid-1970s. The Council is responsible for common positions in Nordic issues and aims to increase understanding of the special problems and needs of motorcyclists in the Nordic region. NMR is also promoting contact between the Nordic motorcyclists and stimulating exchange of experience. NMR has 150 000 members in seven organizations and are representing 850 000 motorcyclists in Scandinavia. All Nordic motorcycle organisations are also members of FEMA.

Members of NMR's are:

BLS Sniglar, Iceland	*www.sniglar.is*
Danske MotorCyklister, Denmark	*www.dmc-org.dk*
MC Touring Club (MCTC),Denmark	*www.mctouringclub.dk*
Norsk Motorcykkel Union (NMCU), Norway	*www.nmcu.org*
Moottoripyöräkerho 69 (MP 69), Finland	*www.mp69.fi*
Suomen Motoristit r.y. (SMOTO),FinlanD	*www.smoto.fi*
Sveriges MotorCyklister (SMC), Sweden	*www.svmc.se*

Chapter 1. Introduction

Despite all imaginable road safety efforts, riding a motorcycle can never be made totally risk free. This is obvious to all motorcyclists. That is one of the most important reasons why motorcyclists are in favour of cost-efficient basic training of high quality.

But, motorcyclists are not in favour of a complicated and expensive training and testing regime with questionable road safety benefits, which might limit access in a negative way. It can also lead to a considerable number of untrained people riding motorcycles on the European roads without a licence. This is the reason for this document. NMR wants to replace the current complicated framework, described in the present 3rd Driving Licence Directive, with a new directive, focusing on the content of initial rider training.

Basic training is essential

A motorcycle is probably one of the most demanding vehicles to ride on a road. To be able to ride a motorcycle you need an acceptable level of safety, arriving from knowledge, a certain level of

handling skills and a focused attitude embracing a conscious behaviour. Thus, no one should start riding a motorcycle without having undertaken structured, relevant and cost-effective basic training. Initial rider training programmes vary enormously from country to country I Europe, from virtually non-existent to extensive, compulsory and very expensive ones. It is not necessarily true that very advanced and expensive training gives the greatest road safety benefits. Expensive programmes may also lead to untrained people riding motorcycles without valid licences.

Most initial rider training schemes are influenced by the existing licence test. Thus, the quality of training inevitably reflects the quality of the licence test. Some rider training programmes may be criticised for just "teaching the skills needed to pass the licence test", instead of teaching the essential skills and knowledge needed to survive on the road. Thus, it is vital to identify the key factors in basic training that effectively make the novice rider capable of safely operating a motorcycle in normal traffic situations on public roads. This document will identify these key factors and in detail describe the structure and content of a cost-effective European initial rider training scheme.

It is also very important to keep in mind that although the quality of the initial and continuous training is essential, most motorcycle accidents are not caused by the rider, or happen in such way that the rider could not entirely have avoided it. A comprehensive improvement must take into account all road users and notably infuse the car drivers with an accurate understanding of what the two-wheelers are about and how fragile they are. NMR's proposal focuses on the riders, but that can only be a part of the solution and have to be included in a wider scheme.

Instructor and examiner competence

The quality and effectiveness of training is highly dependent upon the instructor's competence. Thus, no one should be allowed to offer training if not having participated in a recognised instructor's training programme. In a road safety and consumer perspective one might say that if basic rider training comprises a precise syllabus and methodology and competent instructors, more is learned in a shorter period of time, e.g. the society benefits from a better trained, safer rider and the consumer gets "value for money". Instructors' education varies enormously from country to country in Europe, from virtually non-existent to official requirement of a two-year education at college level. European motorcycle safety would benefit largely from basic guidelines for education of motorcycle instructors and examiners.

To teach something, it is important first to know it and then to know how to teach it. While all official motorcycle instructors also hold their A license, not all actually use a two-wheeler, in extreme cases some haven't been on one in decades. The instructors and examiners should be strongly encouraged to be riders themselves and to be re-educated on a regular basis.

Licence test

The main purpose of the licence test is a quality assurance of the candidate's basic skills and knowledge, meaning the minimum skills and knowledge needed to safely operate a motorcycle on public roads. Thus, it is of great importance that the licence test is designed to do exactly that. Unfortunately, most European test regimes still expose candidates to some rather peculiar exercises with absolutely no relevance to real-life road safety. As a consequence, perfectly competent candidates may fail the test, while questionable candidates, who have "learned the tricks", may pass. Female riders, usually shorter than men, are forced to do a test on motorcycles where they hardly reach neither the ground, nor the handlebar they fail the rider test more often than men, and often require more hours of training - even though once on the road, they are proven to be safer than men.

All initial rider training schemes are influenced/steered by the existing licence test. Thus, the quality of training inevitably reflects the quality of the licence test. The task of evaluating an A licence candidate requires a "trained eye". It is questionable whether a person without extensive motorcycle

experience is able to do the job properly. European motorcycle safety would benefit largely from basic guidelines for a truly quality assuring motorcycle licence test with a minimum level for every Member State. This document will describe a future licence test that is more in accordance with a high quality European initial rider training scheme.

Training and testing facilities

The quality and effectiveness of rider training would benefit to some extent if designated and safe areas for training were available. By the very fact that most training schemes in Europe are operated by privately owned companies, one could say that investments in training facilities are the responsibility of the training providers. However, it is a fact that very few companies are in a financial situation that allows such large investments.

Test areas are being closed in several European countries, which make training and testing more expensive for both the consumers and traffic schools. In a road safety perspective, it could therefore prove cost-effective if governments and local authorities would assist in providing for training facilities. Such training facilities could be used for initial rider training, licence test and voluntary post-licence training.

It would also improve the safety and quality of training, since for lack of adapted training sites, many motorcycle schools have to make do with areas that are too small and/or not safe enough for this purpose.

Reference: FEMA: European Agenda for Motorcycle Safety

Chapter 2. Riders' views on the present Driving License Directive

A cost-efficient basic training of high quality is what NMR, and probably what every country in Europe wants. But, the present directive and the near 30 national regulations that have been implemented as a result of it, do not focus on this. We have already stated that a motorcycle is a demanding vehicle but the special skills to ride a motorcycle safely, should be addressed in the rider education, not by limiting access to a category of vehicles through age and several tests in a complicated framework.

If the driver license education and tests becomes too complicated and expensive, there is a risk that citizens do not bother to get a license at all. It is for example a fact that in the Nordic countries, 25 % of the killed motorcyclists in Sweden 2005-2010, and Norway 2005-2009, did not have a valid license.

Age limits

Driving or riding a vehicle is a complex task integrating psychomotor, perceptual, and cognitive skills. The present directive considers that you have these abilities to drive a car or/and a lorry at 18 years. However, the same directive does not consider 18 years old enough to be able to choose the motorcycle of his /her choice. We state that the same age considerations must also be valid for access to a motorcycle; otherwise the present directive is counterproductive.

The essential about a directive is to harmonise the driver licenses in the entire EU/EEA area. But, the directive has actually failed this objective. The access ages are not harmonised and each Member State can decide when a person is allowed on a motorcycle. Two neighbour countries can have a difference of two years at the earliest access age, 16-18 years, as for example Denmark and Germany/Sweden.

The sooner young people are allowed to ride two-wheelers, the more experience they get by the time they are older and allowed to ride a superior category vehicle, hence the safer. The starting age

for mopeds varies from 14 to 18. Young teenagers of 14 are much more likely to listen to their parents and trainer, and become safer riders than those you start at a later age. A good training system will give better results with young person since they are listening to trainers more carefully and their parents can also put a pressure on teenagers who want to ride a moped. Restrictions might be applied for young teenagers like no pillion passenger.

The experience gained on two-wheelers is not age-defined. One can start riding at 40 and have less experience than an 18-year old with 4 years mopeds and 125cc practice behind him.

Categories

The directive specifies three different license categories, A1, A2 and A. But the directive also has special demands on the test vehicles in each category, A1, A2 and A. At the moment the demands on the test vehicles are being reviewed and the outcome of this is even higher demands on test vehicles. The effects are that the safest riders will have most difficult to pass the test. Traffic schools will close parts of, or in worst case all education, since they cannot afford to meet the new demands. It is even harder to understand the strict demands on test motorcycles, when compared to the demands for a test car, of all sizes and power output, “a four-wheeled category B vehicle capable of a speed of at least 100 km/h”.

This system makes it difficult for traffic schools in smaller cities to offer education to motorcyclists in all categories. Numerous traffic schools have closed in the Nordic countries. There are actually traffic schools, where you need to buy your own motorcycle and bring it there in some way, to be able to be trained by an instructor. In practise, there is no difference in riding a motorcycle of A1, A2 and A. They have different style and performance, just like cars, but still they are still all motorcycles with two wheels.

The present scheme discourages youngsters from start riding on a small vehicle and gets the most important known factor in terms of road safety, namely experience, early on. We do not want to believe that this is the purpose of the present scheme. The fact that you may have to pass three tests on three different vehicles, make youngsters wait until a later stage and start riding on the most powerful motorcycles, without any experience on smaller bikes. In the financial crisis in Europe, where especially young people are unemployed, it is almost unaffordable to pass the stepped access scheme for motorcycles.

The use of smaller, lighter, more energy-efficient vehicles should be encouraged, yet the new directive will force learners to use from the very start overly big and powerful motorcycles, with no pedagogic relevance, and even some discriminative features for the smaller persons. There is time later in life to move on to bigger vehicles according to one’s morphology and use, with no other testing or training needs than having gained experience.

Test manoeuvres

The directive is detailed about different manoeuvres in low speed, a situation where there are no fatalities or serious accidents. A direct result of this is extremely difficult tests through national regulation in Member States, were actually the safest riders don’t pass the test. These manoeuvres also have to be repeated, if you fail the test and if you start with A1 or/and A2. The directive requires areas that cannot be offered within reasonable distances all over Europe, especially excluding persons living in areas with low population from doing the riding test.

The directive clearly states that riding in traffic should be a major part of the test. But this is not the case in several member states. If you for example put your foot down once during the manoeuver test at slow speed in the closed area, you have failed and you are not allowed to carry on with the test.

Conclusion

Our conclusion is that the 3rd Driving License Directive it's not addressing the real challenge, namely to increase road safety among motorcyclists. Instead it is discouraging young people to take up riding a motorcycle in a legal way. This is the reason for FEMA and the national member organisations to demand a new directive as soon as possible.

Chapter 3. Riders' views on Initial Rider Training

In many countries, Initial Rider Training (IRT) is just seen as a tool to pass the license test. Within NMR however, initial rider training is seen as the starting point of a life long safety education, providing the rider with the skills and attitudes necessary to survive in a demanding traffic environment. That is why it is so important that the IRT teaches the right elements from the very beginning. If vital elements are taught wrong or missing, the rider will struggle and be in potential danger until hopefully helped by fellow riders or getting an appropriate post-license training.

High quality, cost-effective initial training of all road users is probably the most important motorcycle safety measure of all. However, IRT is less about a complicated framework than about a precise and cost-effective content.

"Content is King"

NMR has identified four key factors in effective initial rider training:

1. Learning and understanding the intentions of laws and regulations intended to promote and maintain road safety.
2. Learning automated precise and effective machine control skills, based on the laws of physics, enabling the rider to be in control of the motorcycle when accelerating, cornering and braking, the only three manoeuvres a motorcycle is capable of.
3. Learning basic rider traffic strategies, such as rider attitude, interaction with other road users, speed adaptation, lane positioning, visual directional control and active hazard perception, in order to make correct tactical and operational choices when riding in traffic.
4. Awareness and acceptance of own skills and limitations (self-awareness)

The identification of these four key factors is based on both relevant research and years and years of accumulated experience within the motorcycling community. The riders' organisations and their partners have systematised the experience-based knowledge in several key documents, and NMR wants to point in the direction of these documents.

In this context it is important to remember that riders are extremely conscious road users and in fact true experts on motorcycle safety. Thus, documents prepared by experts from the motorcycling community should be regarded as true key documents. The Initial Rider Training Programme is such a key document.

The Initial Rider Training Programme

As explained, training is recognised by the motorcycling community as a key element to improve motorcycle safety. OECD members recently confirmed this view, putting training programmes on the top of their priority list: "Countries have different training needs, based on their vehicle fleet and training resources. Motorcycle training should therefore build on existing standards, focus on risk awareness and risk avoidance, and develop an understanding of the rider/motorcycle capacities and limitations."

The efficacy of rider training within the European Union, indeed the very existence of rider training in a number of Member States, are areas of consideration that have manifested as a consequence of the development of a harmonised European driving licence. Whilst the means by which a person acquires the knowledge and skills to satisfy the defined criteria is not yet addressed, it is an area of considerable interest. 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. However, today's training programmes overwhelmingly concentrates on machine control skills to the detriment of hazard awareness and rider attitude and behaviour. An innovative approach was therefore developed by acknowledged experts.

The Initial Rider Training Project, developing an European approach to the training of motorcyclists was finalised in 2007, creating an European Initial Rider Training Programme (IRTP) which includes a modular approach to initial rider training, the essential elements and aspects for initial rider training, a method and approach to support initial rider training, and a comprehensive manual for use in a range of situations.

The IRTP was jointly funded by the Directorate-General for Energy and Transport of the European Commission, FEMA, FIM, ACEM and Vägverket (the Swedish national road traffic authority). The content was developed by active motorcyclists representing the riders' organisations, the industry, the police and the research community.

This new approach to training delivers 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, a real improvement over many of the pre-licence training presently available to riders within the European Union.

FEMA wants the Initial Rider Training Programme to be a platform for the content of a future cost-effective initial rider training.

The GDE Matrix (Goals for Driver Education)

A constructive way of describing the different stages in an initial rider training programme is the Finnish GDE Matrix, developed at the University of Turku, and initially published in 2003.

The four levels of the matrix are:

Level 1: Vehicle manoeuvring

Level 2: Mastering traffic situations

Level 3: Goals and context of riding

Level 4: Goals for life and skills for living

There is also talk about a possible future Level 5, bringing Cultural differences into the equation.

Level 1: Vehicle manoeuvring. The first and lowest level in the framework is focusing on the vehicle and its properties, with emphasis on skills that have to do with vehicle control and manoeuvring. This includes not only basic skills such as knowledge of controls, driving off, braking, gear shifting, etc., but also more complex knowledge such as keeping the vehicle under control, evasive manoeuvring, free space requirements, understanding the concept of traction, etc. Driver education on this level focuses in a sense on the interaction between driver, vehicle and the physical environment in a more direct sense than on the other levels.

Vehicle manoeuvring is the traditional cornerstone in driver education. Although goals and motives on a higher level have been emphasised, the importance of basic vehicle manoeuvring skills should by no means be underestimated as they have an executive role in relation to the higher levels. The components that are found on this level can basically be learnt through repetition. Bit by bit, from single items to combinations, from basic to complex, and in different settings and on different road

surfaces. Basically it is a question of motor learning, of doing things over and over again until they can be done automatically without conscious effort. Sufficient repetition is needed in order to achieve automatism of performance.

Automatic execution of manoeuvring tasks is crucial for safety. The more conscious effort a driver has to put into basic manoeuvres, e.g. the task of changing gear, the less capacity is available for coping with sudden, maybe dangerous events in a driving situation (a skill located on the next level up). If the basic manoeuvres are not performed automatically, the manoeuvring will strain information processing and leave less capacity to observe and predict the behaviour of other road users. The problems at this level partly relate to problems of information overflow in novice drivers. In addition to the skills needed in normal driving situations, the driver should be aware of typical mistakes when accelerating, decelerating and steering, which can lead to loss of control of the vehicle. It would not be possible to avoid making such mistakes without knowledge about them.

Level 2: Mastery of traffic situations. Focus on the second level is on competence that has to do with driving in certain traffic situations, in different conditions, and amidst other road users. This level can be described as a tactical level, as it is related to the negotiation of traffic situation and road designs. A driver must be able to anticipate and adjust his/her driving in accordance with the constant changes in traffic. Knowledge of traffic rules, speed adjustment, observation, risk perception, and interaction with other road users are typical contents at this level.

The skills learned on the level 1 (vehicle manoeuvring) are now applied in practice. The concept of speed is extended to cover appropriate use of speed, gear shifting is trained in various situations, the vehicle is kept under control on different road surfaces and in different driving conditions, and so forth.

Mastery of traffic situations is a challenge for driver education in much the same way as vehicle manoeuvring in general. The driver has to adapt his or hers individual behaviour to the behaviour of other road-users and to the traffic environment. It follows that he or she must not only be able to perceive and predict what other road-users will do, but also make his or her own behaviour predictable to them. Knowledge of traffic rules and behaving according to them is one important part of the skills on this level.

An essential problem at this level for novice drivers is that insufficient skills and insufficient automatism result in information overload and mistakes or less appropriate strategies, e.g. in observation or allocation of visual attention and longer reaction times. In addition to skills needed in normal situations, good skills for mastery of traffic situations include skills for risk-recognition in problematic situations.

Excellent skills for mastery of traffic situations are not necessarily enough for safe driving. The hierarchical perspective emphasises that behaviour in specific traffic situations is related to the driver's general tendencies and goals of the trip at hand. The high interest in vehicles and driving traditionally exhibited by males does not lead to lower crash rates even though it may lead to higher levels of skill and knowledge. Training courses focusing on technical mastery of traffic situations, and on producing relaxed and confident drivers, may make drivers insensitive to fear in risky situations. Increased technical skills are likely to lead to increased self-confidence so that the driver takes on more difficult driving tasks such as driving faster, overtaking in heavier traffic, or accepting additional secondary tasks, rather than simply to an increase in safety.

Level 3: Goals and context of driving. Level 3 focuses on the goals behind driving and the context in which it is performed, i.e. why a driver is driving on a certain occasion, where and when, and with whom. Included is e.g. planning of driving route and driving time as well as choice of driving state and driving company. Decisions made on this level have important consequences not only for traffic safety, but also for matters such as fuel economy, pollution and travelling comfort. Choices are made

e.g. between whether to go by car or walk, driving in rush-hour traffic or not, decisions to drive under the influence of alcohol or stress, etc. All such choices are related to the purpose of the trip and directed by general motives of a higher order. For example, if the personal emphasis of a driver is not on the trip from A to B as such but more on the opportunity this trip gives him (or her) to show off to friends riding along in the car, then safe driving may become of secondary importance.

Good planning of the trip may make the driving task easy, whereas bad planning or lack of planning can make it difficult. Proper estimation of travel time, selection of the easiest route or the most suitable time for the trip will not only help the driver to save fuel, but also to encounter less demanding traffic situations and thereby lessen the burden on vehicle manoeuvring skills when actually making the trip. A key aspect of planning is, of course, the major decision to drive or not to drive. Such evaluations should be included in driver training because of their direct effect on both quality and quantity of exposure and therefore on personal risks.

Level 4: Goals for life and skills for living. Whereas level 3 is connected to a specific journey, level 4, the highest level in the hierarchy, is to some extent disconnected from traffic as such as it contains the preconditions that ultimately shape a person's life in a global sense. Traffic is only one part of this total.

The hierarchical view stresses the importance of personal motives, tendencies and social relations of a driver in a broader sense. These not only include personality factors such as self-control, but also life-style, social background, gender, age, group affiliation and other preconditions that have an influence on attitudes, motives, choices and behaviour as a driver.

Complete understanding of behaviour (e.g. fast acceleration) is impossible without understanding the goal or motivating factors (e.g. time pressure or wish to demonstrate the vehicle's performance). Furthermore, modification of inappropriate behaviour is not possible without modification, or at least, awareness of personal goals. Mere awareness of the behaviour itself is according to the hierarchical view not possible in that the motives that dictate the behaviour has overriding authority. As far as driver training is concerned, we therefore need to emphasise methods that are capable of dealing with motivational and other factors connected more widely with drivers' strategies, motives and skills for life. The clientele in driver education consists mostly of youngsters who are in some respects still in the midst of an identity-creating process. The task of driver education becomes therefore partly one of arranging support for young persons in this development so that they could mature in a more safe way. Even though it cannot be expected that driver education can radically change a young person's life goals, it should make that person conscious of such personal tendencies that affect driving behaviour.
The highest level in the hierarchy (or level 3 for that matter) is not accessible through teacher-centred methods like lecturing. Active learning methods are needed, which make use of the learner's own experiences.

FEMA wants GDE Matrix to be a platform for the content of a future cost-effective initial rider training.

Norwegian Initial Rider training

Norway implemented a new driver and rider training system for all driving license categories in 2005. The new training model is largely based on research related theories on driver and rider training development. The GDE matrix, (Hatakka, Keskinen, Gregersen & Glad, 1999; Hatakka, Keskinen, Gregersen, Glad & Hernetkoski, 2002) served as the basis for the development work. The model describes what the driver or rider must learn at four different hierarchic levels.

The new category A curriculum is also based on this matrix as far as training content is concerned. This is specifically expressed by having the training organized into our general four-step curriculum model with emphasis on the following seven subjects:

1. Legislation and road traffic as a system
2. Maneuvering a vehicle.
3. Road traffic skills.
4. Economical and environmentally friendly riding.
5. Planning and preparation for riding.
6. Behavioral and judgmental tendencies.
7. Knowledge of one's own competence and of one's personal behavioral and judgmental tendencies.

The new motorcycle training program is characterized by its focusing on basic technical riding skills that have specifically been placed in the first part of the training. However, continuous emphasis has also been put on precise technical riding skills throughout the *entire* training process.

Any particular type of training that might lead to excessive confidence in one's own skills has deliberately been avoided. A four-lesson mandatory safety course in precise riding techniques has therefore been included. For this course we have developed four technical riding exercises that emphasize the rider's ability to understand that skills in braking and steering the motorcycle in a correct and precise manner are the basis of safety on the roads. The training methods have been developed to give the student experience rather than a conformist training in mastering all situations.

The student's technical riding skills then form the basis of the concluding traffic training in step four of our general curriculum model. Here behavioral and judgmental tendencies, self-knowledge as well as planning and preparation for riding form the central elements. A mandatory eight-hour category A course in safe road riding, where theory and practice are integrated, is included in this last step of the training.

It is essential that riding instructors in charge of teaching according to the new curriculum possess the necessary competence for attaining the intended reduction in motorcycle accidents. A mandatory supplementary training course for motorcycle related teaching has consequently been established. The content of this one-week course is primarily aimed at understanding the curriculum's intentions, precise riding techniques, the required training methods and other related topics.

In 2013 the Norwegian initial rider training was evaluated by The Nord-Trondelag University College and in the summary the researchers Elisabeth Suzen and Silje Sitter say:

"Our results reveals that the driving teachers have a clear understanding of what to teach, and that they are able to explain and justify their practice. There is a clear relationship between the educational intentions in the general part of the curriculum and the class-specific parts in the education/teaching. The teachers act as mentors in facilitating student learning. The pupils are satisfied with their own driver training. They express that the teachers emphasize risk, road safety and the development of self-knowledge in their driver education. Upon implementation of the curriculum a continuing education for all teachers in class A was required. Our findings suggest that this further education has been an important contribution to ensuring a common pedagogical understanding among the driving teachers. Driving teachers participating in the project stated that they have a good professional relationship with other teachers in class A, both in their own school and among the other teachers in their districts. This is important in terms of development and learning opportunities in the business as a whole. Overall we assess the training conducted in Class A to be in line with the pedagogical intentions stated in the curriculum".

NMR wants the Norwegian curriculum for initial rider training to be a platform for the content of a future cost-effective initial rider training.

“Full Control”

The Norwegian IRT is to a large extent influenced by a booklet by the Norwegian riders’ organisation NMCU. The booklet is called Full Control. When NMCU carried out an accident survey among Norwegian riders in 1997, we discovered that many single vehicle accidents happened in moderate speeds and good weather with dry road surface and excellent grip. A closer investigation revealed that many riders seemed to have inadequate riding skills. NMCU consulted the Norwegian Traffic School Association and found that there were quite different opinions on how to teach candidates riding skills. Also, the industry seemed to be teaching the skills needed to pass the licence test, rather than teaching the essential skills needed to survive on the road. In addition, the then existing curriculum was vague and imprecise. This stunning lack of precision left to the novice rider to learn the necessary skills - after he had passed the licence test. It became obvious that someone had to take on the task of describing a precise and efficient technique for safely operating a motorcycle. In 1999 NMCU accepted the challenge and started producing a booklet called Full Control - a Riders’ Guide to a Precise and Efficient Riding Technique. Parallel, NMCU approached the Norwegian Public Roads Administration (NPRA) and demanded a more precise and efficient Initial Rider Training, and better qualified instructors.

Obviously, the training regime that had failed could not provide the input NMCU needed to get the job done. However, we found the expertise needed within the motorcycling community. Modifiers provided understanding of the laws of physics and the motorcycle geometry. Voluntary advanced riding courses provided a precise description of an efficient riding technique. Experienced riders provided practical traffic strategies. The Full Control booklet was first published in 2001, and it was very well received by the riders.

A precise and efficient riding technique must arrive from an understanding of the laws of physics applying to a two-wheeled vehicle. By explaining the laws of physics, Full Control managed to convince the riders to trust the described riding technique. The human survival instincts trigger dangerous instinctive reactions, leading to “freeze”, target fixation etc., and Full Control describes ways to deal with these dangerous instincts. Full Control introduced systematic use of counter steering. The booklet also addressed vital concepts like broad vision, anchoring and throttle control.
Full Control did focus on the front brake being the main braking system, and the rear brake being the secondary braking system on most motorcycles. A motorcycle is only able to perform three manoeuvres, namely accelerate, steer and brake. If a rider learn how to accelerate, steer and brake, he is able to control the motorcycle in every possible situation. Full Control also proposed a series of acceleration, steering and braking exercises, both on public roads and on a secluded area.

However, learning a precise and efficient riding technique is not a goal in itself. Automated machine control is just a means, enabling the rider to carry out tactical decisions while riding in traffic. Thus, it became more and more urgent to publish a sequel to Full Control. listed the most common accident situations and asked our most experienced riders to describe how to detect and avoid these accident situations - tactical advice. We also asked these experienced riders to give their best advice on riding gear, journey planning, understanding and accepting own limitations etc - strategic advice.

The booklet Good Thinking was published in 2007 and like Full Control, it is a peer to peer project. Good Thinking builds on Full Control and shares precise, experienced based tactical and strategic advice on situations like, avoiding conflicts with motorists not giving right of way, diesels spills, riding in groups, wordless communication with other road users, etc. Good Thinking was well received by road authorities, traffic school instructors and riders.

The two booklets were merged and republished in 2012 under the title Full Control. 160.000 copies are now printed and distributed for free to Norwegian riders. The booklet is translated into “broken” English, Swedish and Finnishand shared within the motorcycling community without any restrictions, other than strictly non-commercial. Parallel with the production of Full Control, NMCU had

approached the Public Roads Administration and the Ministry of Transport and demanded a more precise and efficient Initial Rider Training and better qualified instructors. The initiative was well received by the authorities and our common objectives were written into the National Transport Plan 2002-2011.
Full Control was used as one of the elements in a total revision of the curriculum for Initial Rider Training in 2004. When the improved Initial Rider Training scheme was implemented in 2005, it was probably one of the most modern and state-of-the-art motorcycle training schemes in Europe. It is also extended and very expensive - and fully paid for by the riders themselves. However, this was less of a problem with the riding community, because the obvious advantages of learning how to ride, instead of learning how to pass a test, was explained by NMCU, and appreciated by the riders. Also, motorcycle instructors were refused to offer rider training if not having participated in a motorcycle instructors training programme. Because of these new requirements we lost some poorly qualified instructors, but they were never missed.
Full Control covers all levels of the GDE Matrix, seen from the riders' perspective, based on riders' own experience based knowledge. NMR wants the Full Control booklet to be a platform for the content of a future cost-effective initial rider training.

Conclusion
High quality, cost-effective initial rider training is by riders regarded among the most important motorcycle safety measure of all. However, there has unfortunately been done little research on the effects of training, the reason perhaps being that the research community is dominated by engineers and economists, and not educators. At present it is therefore difficult to produce scientific proof on the effects of initial rider training.

NMR's views on rider training are often challenged by established transport economic research institutes. We must admit that. However, in reply to the challenge FEMA asks the rhetorical question: "Whom do you want in the cockpit on your next flight, a pilot with no training or a pilot with high quality training"?

The Riderscan project will obviously be of great help, but qualified research focussing particularly on rider training is still much needed.

Reference: Turku University: Driver competence in a hierarchical perspective
EU/FEMA: The Initial Rider Training Programme
NPRA: Curriculum IRT category A1 , A2 and A
FEMA: The Full Control booklet

Chapter 4. Riders' views on the Licence Test

It is important to make a motorcycle license affordable for European citizens. Therefore it is crucial that the limited access to motorcycles is reviewed in a new and constructive way. The chapter above shows that the present rider test must be reviewed in several EU countries. The common rule in EU is that a driving licence shall be issued only to those applicants who meet medical standards and who have passed a practical test of skills and behaviour and a theoretical test. But, with the present directive, a motorcyclist may have passed between two and five tests before he/she reaches the A level, considering if they start with an AM license or goes straight to A. If a person fails, he/she is forced to do even more tests. Each practical test is merely a checkpoint, not a road safety measure in itself. The test situation is a situation where many students are uncomfortable, nervous and might fail during the first minutes if he/she for example puts one foot down. In the northern part of Europe, tests are only made during the summer months. One failure means that you might have to wait 6-7 months for a new test. These problems can be reduced in a number of ways.

The four key factors

The theoretical and practical tests should reflect the four key factors mentioned earlier:

1. Learning and understanding the intentions of laws and regulations intended to promote and maintain road safety.
2. Learning automated precise and effective machine control skills, based on the laws of physiques, enabling the rider to be in control of the motorcycle when accelerating, cornering and braking; the only three manoeuvres a motorcycle is capable of.
3. Learning basic rider strategies, such as rider attitude, interaction with other road users, speed adaptation, lane positioning, visual directional control and active hazard perception, in order to make correct tactical and operational choices when riding in traffic.
4. Awareness and acceptance of own skills and limitations (self-awareness)

The theoretical test

The theoretical test is a vital part of the motorcycle test. Both traffic schools and A-students need actual literature and study material that is relevant for motorcyclists as well as a modern classroom technique where there is an active safety dialogue. The motorcycle students are not a homogeny group, the ages varies from 14-70 years, which must be reflected in the language used in the student literature and the actual test. It is also important that both teachers and instructors at traffic schools as well as the A students are aware of the questions that will be asked during the test, which is not the case in all European countries. If a student fails the theory test time after time, there should be a possibility to do an alternative verbal test, provided by the testing authorities at a reasonable cost.

In the future it would be wise to use a riding simulator to do parts of the theoretical and practical test. The well-known Honda Riding Trainer is a tool that could be developed for this purpose. The user is allowed to discover and avoid critical situations on simulated roads and streets. The student can learn how to use the right riding strategy and make the right decision via computer programmes during the Initial Rider Training. At the same time it's possible for both the instructor and examiner to evaluate the student.

The practical test

At the test, the rider should be able to show that he/she is ready to take responsibility for his/her riding in the future. This cannot be done with manoeuver tests at low speed in a closed area, the test must take place in real traffic. However, some motorcyclists are never allowed to ride outside the closed area during the test.

It appears that women fails the practical test more often than men, even though statistics show that women are less involved in accidents compared to men. Thus, it is important that the practical test is neutral, regardless of age and sex of the riders. It is crucial that the focus of the test is changed from manoeuvers in low speed towards riding in real traffic and a lifelong safety learning aspect. It is also important that the regulation concerning test vehicles is reviewed. The restrictions in the current and proposed system reduce the possibilities for traffic schools to afford test vehicles. It also limits the possibilities for individuals to pass a test on their own motorcycle.

The required closed areas increase the test costs for the consumers, the examiners bodies and the traffic schools. A person who have been riding a motorcycle for two years are familiar with machine control and has the required skills also on a motorcycle of another size. Thus, NMR see no need for repetition of this test. Several member states only demand the manoeuver test during the first A-license test while it is necessary to repeat at every single test in other countries.

The directive states that the test ride in traffic should be at least 25 minutes, which is an adequate time frame. During the test, the skills and knowledge needed to ride a motorcycle safely on public roads learned during initial rider training should be evaluated. It is important that the examiner can

verify that the rider is able to make the correct tactical and strategic choices during the ride. Is the student aware of traffic rules? Is the student using the right riding technique for motorcycle when accelerating, cornering and braking? Does the student use the right lane positioning? Does the student make the right decisions in situations where most motorcycle accidents occur? As stated earlier, the motorcyclists are not a homogeny group and riders also use different riding techniques and strategies, depending on sex, age, motorcycle and experience. A practical motorcycle test can only be done in real traffic and it's obvious that the examiner needs to be a trained motorcyclist.

As stated earlier, the single most important factor that reduces the risk of accidents is experience. In practise, there is no difference in riding a motorcycle of A1, A2 and A. They have different style and performance, just like cars, but they are still all motorcycles with two wheels. However, the present scheme discourages youngsters to start ride and gain experience on a small vehicle before they continue to a more powerful motorcycle. NMR does not see the need for motorcyclists, who can afford to buy a new motorcycle, to sign up at a traffic school and then to pass a new test. If the focus of motorcycle safety is a harmonized Initial Rider Training of high quality, the stepped access scheme could be addressed in a different way.

Conclusion

NMR proposes a new perspective on the motorcycle licence testing scheme. NMR states that two years of experience on a motorcycle is considered as a better measure to improve safety compared to repeated tests every second year. The directive should only include a minimum requirement for the manoeuver test and leave the decision of how and where to evaluate machine control to every member state due to the regional differences in Europe. The directive should include a minimum requirement of evaluation of riding a motorcycle in traffic, reflecting the content of the Initial Rider Training requirements. The regulation for test vehicles in each category must be reviewed in order to minimize the difference between men and women and to make it possible for traffic schools in the whole of Europe to offer motorcycle license training.

NMR sees no need to repeat a practical test at each separate motorcycle category (A1, A2 and A). Our way forward is to accept limited access at 16 years (A1), 18 years (A2) and 20 years (A). A young motorcyclist who has gained two years of experience in each category is capable of riding a more powerful motorcycle, without passing a new test. This would give motorcyclists in the EU/EEA countries an affordable license system where a harmonized Initial Rider Training in combination with experience is seen as the most important factors to gain safe motorcyclists.

Chapter 5. Bridge the gap of experience

As stated earlier: Despite all imaginable road safety efforts, riding a motorcycle can never be made entirely risk free. There are, however, a number of road safety measures, not yet fully utilized, that might help reduce the number of killed and injured riders to a realistic and acceptable minimum.
To be able to identify the most efficient counter measures we must have a true understanding of the most important factors causing accidents. In line with this approach the Norwegian Public Roads Administration analysed fatal motorcycle accidents 2005-2009, the aim of the analysis being to examine some of the myths associated with motorcycle accidents.
Some myths were busted: Fewer than expected were innocent victims in SMIDSY accidents, surprisingly many riders with normal behaviour crashed because they rode beyond their skills, such accident more often caused by lack of strategic skills than lack of machine control skills, the road environment was not often direct cause of accidents but quite often increased the severity of the accident. Some myths were confirmed: Technical failure was not often the cause of accidents, super sport bikes was over-represented and most important; more than 50% had less than 2 years experience.

Bridge the gap of experience

Again it was confirmed that Experience is the single factor most likely to determine whether a potentially dangerous situation becomes an accident or not. Thus, it is important to have focus on measures that will "bridge the gap of experience". The three most important measures are:

1. Cost effective initial rider training, with a strong focus on automated machine control and strategic and tactical riding
2. The safety dialogue within the motorcycling community
3. Large scale, low threshold, voluntary post licence training

Initial rider training

Closing of the gap between inexperienced and experienced starts with high quality initial rider training and licence test. Many progressive IRT schemes has, quite rightly, had a strong focus on teaching and testing an automated, precise and efficient riding technique.However, NMR believes we now need to further develop that part of rider training that enables novice riders to make informed strategic and tactical choices when riding on their own after having passed the licence test. However, it is important that the scope of training does not grow totally out of proportions. Thus, NMR demands that riding schools take steps to make training more precise and efficient in order to teach more in less time. NMR again underlines that rider training is not first and foremost a business, but a road safety measure!

The safety dialogue within the motorcycling community

When motorcyclists meet at the clubhouse or the local roadside cafe, or ride together in groups, safety issues are often brought up and debated. This safety dialogue among motorcyclists is an important, often overlooked, instrument for passing on vital safety information and forming positive attitudes towards safety. Peer-to-peer projects like the *Full Control* booklets have made the safety dialogue less anecdotal and more accurate. The safety dialogue among motorcyclists helps bridging the gap of experience and should be encouraged and developed. However, we must face that measures like "booklets and folders" have expired.A more modern method would be to create a website containing an interactive version of *Full Control*, online simulator training, instructional videos, post-licence training schedules, a discussion forum, an online question/answer service etc.

Voluntary post licence training

Voluntary post licence training is an important part of the lifelong learning process and helps bridging the gap of experience. Therefore we must develop a large-scale system offering affordable low threshold post licence training courses to motorcyclists.

Keywords for affordable, low threshold post licence training:

- should be organized on public roads
- should be unpretentious and affordable
- should offer a steep learning curve for the inexperienced riders and confirmation of knowledge for the experienced riders
- should be dialogue-based, with "low shoulders" and high fun factor
- could be encouraged with incentive from governments and/or insurance companies

An organisational platform for voluntary post licence training courses could be motorcycle clubs, dealerships and riding schools. Voluntary post licence courses require a thought through curriculum and competent instructors, and it is easy to see a role for both traffic school instructors and examiners.

Reference: NMCU: The Full Control booklet

SMC: Handbook SMC School
NPRA: Norwegian analysis of fatal motorcycle accidents 2005-2009

Chapter 5. Other areas of interest

In depth studies of fatal motorcycle accidents in several European countries show that the share of killed persons without a valid motorcycle license is extremely high. From our perspective, these persons are not motorcyclists. Even if the total number of accidents are reduced, the share of killed without a valid motorcycle license is increasing. We therefor suggest that the high proportion of illegal motorcycle riders should be investigated and compared to the historic variations of the license schemes in all EU/EES countries.

All over Europe, motorcyclists are killed and sever injured by another road user, mainly motorists. All research and statistics from European countries show that a majority of these accidents were not caused by the motorcyclists, but by someone who failed to see him or her. NMR suggests that the need in include awareness towards riders of PTW should be included in a new driver's license directive.

Today a motorcycle can have two, three or four wheels. There are few similarities between these vehicles, except for the fact that they are motorcycles according to a European directive. In several European countries you are not even allowed to ride a motorcycle with four wheels if you have an A-license.

NMR suggest that the Commission excludes motorcycles with four wheels from fatality statistics and from the driver's license scheme.

Chapter 6. Conclusion

In general, motorcyclists are safe road users and not different from others. When EU decided about a harmonized motorcycle license scheme for motorcyclists, the harmonization only considered tests, test vehicles and ages. The content of the initial rider training and the mere purpose of the motorcycle training were completely overlooked.

This is the reason for NMR to request for a 4th Driving License Directive as soon as possible, where the entire part about motorcycles is reviewed. RIDERSCAN is a possibility for the Commission to create a platform for experience, knowledge and best practises in Europe. The outcome of RIDERSCAN will provide important findings for developing a 4th Driving License Directive.

Through FEMA, the Commission has a unique possibility to involve motorcycle organisations from different parts of Europe to develop a new, and much more effective, framework and content for obtaining a motorcycle licence within the EEA.