

# Motorcycle Vision Zero

The Swedish Motorcyclists' Association



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## **1. INTRODUCTION**

It has been twelve years since Vision Zero was adopted in Sweden, and it's time for new intermediate goals to be formulated. Everybody working with road safety in Sweden is aware that motorcyclists have been missing from Vision Zero up until now. The purpose of this document is to present motorcyclists' view on Vision Zero and how the goals are to be achieved. It is meant to be a living document, which is updated through statistics and research among other things.

The Swedish Motorcyclists' Association (SMC) was founded in 1963. Early in the history of the organisation, members realised the necessity to work with road safety and to inform members, authorities and decision makers in order to influence decisions. SMC for example pursued demands for a helmet law, obligatory dipped headlight and that the motorcycle license didn't come with the license for cars. Already in 1973, the SMC started to work with voluntary further training for motorcyclists. One might say that SMC has pursued a Vision Zero work for around 30 years in our own ways and with our own methods.

### **1.1 Introduction to Vision Zero**

The Swedish Road Administration's (SRA) website reads: "Vision Zero is the image of a future in which no one will be killed or seriously injured in traffic. Vision Zero is a moral attitude but also makes out a strategy to shape a safe road transport system. In Vision Zero it is maintained that it is unacceptable that road traffic takes human lives.

Vision Zero is the foundation of road safety work in Sweden and has been approved by the Swedish parliament, the Riksdag. The decision had led to changes in the road safety politics and the way of working with road safety. Road safety work in the spirit of Vision Zero means that roads, streets and vehicles to a larger extent is to be adjusted to the conditions of people. The responsibility for safety is shared between those who design and those who use the road transport system.

The road safety work according to Vision Zero assumes that everything is to be done to prevent that people are killed or seriously injured. At the same time as measures are taken to prevent accidents, the road transport system must be designed in consideration that people do make mistakes and therefore cannot be avoided completely. The perfect person does not exist. Vision Zero accepts that accidents do happen, but not that they lead to serious personal injuries."

The Swedish National Society for Road Safety (NTF) produced in connection to the breakthrough of Vision Zero the publication "The road to Vision Zero", which was a fact booklet and education material for the implementation of Vision Zero in Sweden.

"Vision Zero is constructed on three fundamental thoughts:

1. It's not necessarily the accidents that are to be eradicated, but rather the consequences of the accidents that are going to be reduced. 'A mistake should not be punishable by death'.
2. The human body has some tolerance to outer force; this tolerance should dimension the design of the road transport system, for example when constructing roads, vehicles and when passing legislation. Special care should be taken of the least protected.
3. The system designers must take a larger responsibility for road safety. This means that we who are using the system have the right to make demands, but that also we need to follow the rules and accept some restrictions. Together we create road safety."

### **1.2 Where are the motorcyclists in Vision Zero?**

There were many and heated discussions when Vision Zero was approved in 1997 if it at all was accepting of motorcyclists on the roads. Today there is a total consensus that the motorcyclists should be allowed. But motorcyclists as road-users have not been considered at all when designing the road transport system.

The thoughts on collision force and reducing injuries instead of preventing accidents are not consistent

with the way that motorcyclists as road-users must think and act in traffic. This is why SMC has produced a Motorcycle Vision Zero with our suggestions to how the amount of killed and injured motorcyclists can be reduced and to achieve the intermediate goals in Vision Zero.

### **1.3 Prevent accidents or injuries?**

An accident that only cause metal damages on a car can injure a motorcyclist seriously and result in lifelong suffering or even death. Therefore, the idea of Vision Zero to reduce the consequences from an accident is insufficient for those who travel on two-wheeled vehicles.

Vision Zero assumes that the human body can cope with a certain form of collision force at a speed of 30 km/h when unprotected. Motorcyclists ride faster and therefore have to prevent both injuries and accidents. This relation is also true for other system designers and other road-users. Motorcyclists are unprotected road-users with completely different demands than for example car drivers. Therefore, SMC's Motorcycle Vision Zero deals with how both accidents and injuries can be prevented.

### **1.4 A shared responsibility for better traffic safety**

SMC recognises four pillars of the Motorcycle Vision Zero that has to work together for an increased road safety for motorcyclists. These are the motorcyclists themselves, other road-users, the road transport system and the vehicle. Some sections are divided into how accidents and injuries can be prevented to improve motorcyclists' safety.

## **2. THE MOTORCYCLISTS' RESPONSIBILITY**

Naturally, it is the driver of a vehicle who has the responsibility when he or she travels on the road. This is more true for motorcyclists than for any other group of road-user. The motorcycle is a vehicle that is hard to ride as it only has two wheels. It is definitely the rider who has the largest possibility to prevent both accidents and injuries and he or she must do everything possible to avoid situations that can lead to an accident. Motorcyclists are generally well aware of the risks involved when riding a motorcycle.

### **2.1 Preventing injuries**

One might say that motorcyclists best prevent accidents before they mount the motorcycle. The motorcyclist must prepare his or her ride as thorough as possible in order to minimize injuries in a possible accident.

### **2.2 Personal safety equipment**

The only obligatory safety equipment when riding a motorcycle in Sweden is a safety helmet, according to a law that was passed in 1975. Even so, most motorcyclists use full personal safety equipment; protective suit, gloves and boots. Virtually all safety equipment on the market today has CEN-certified protections at the most exposed places on the body. Many motorcyclists also add a certified back protector to prevent back injuries. At the motorcycle practical test a full protective suit and back protection is obligatory. Motorcyclists spend large amounts of money to improve his or hers own safety. Some insurance companies demand that safety equipment is to be used at all times in order to take out insurance.

***SMC is of the opinion that current legislation regarding motorcyclists' personal safety equipment is sufficient, but that it can be combined with information campaigns for motorcyclists and dealers.***

***Goal: More information can increase knowledge on quality, certified protection and the use of these as well as the need to replace equipment regularly which can lead to fewer injured and killed motorcyclists.***

### **2.3 Visibility**

To be visible in traffic is important. Motorcyclists can improve their visibility by wearing safety equipment with reflective colours. It is also possible to wear a high-visibility vest or bring one in case the motorcycle breaks down, and wear it in order to increase visibility on the side of the road. Always using dipped headlights at all times goes without saying. It is also possible to attach reflective stripes

on some parts of the motorcycle in order to increase visibility. SMC has campaigned for many years, that motorcycles should be allowed to use three-point lights so that other road-users will see motorcyclists with another light appearance. Regrettably, recent research on the issue is not available. ***SMC is of the opinion that the current legislation is sufficient, with the exception of the three-point lighting, which only is permitted during daylight. There is however, great need of research in the area of for example the effect of colour and reflexes on protective clothing, the effect of wearing a high-visibility vest, the effect of various types of lighting, the effects of three-point lighting and the effect of using headlight during the day.***

***Goal: Research would provide knowledge and new legislation that could lead to increased visibility and improved safety for motorcyclists, leading to fewer injured and killed. Three-point lighting should be allowed at all times of the day.***

## **2.4 Caring for the vehicle**

Most people who ride a motorcycle do it during the seasons when the road conditions cause minimum wear on the vehicle. During the winter it is stored safely and is maintained in order to be able to start come spring. Statistics from Bilprovningen (Swedish Motor Vehicle Inspection Company) show that year after year, motorcycles are the vehicles that least often fail the inspection. The most common fault, noise, is a problem that probably is best tackled at flying inspections.

Sweden has generous rules when it comes to customize and build special vehicles, which gives us new unique vehicles on the roads every year. Insurance statistics show that motorcycles with side-cars and choppers are involved in fewer accidents than other motorcycles. The SRA's in-depth studies and other European studies show that virtually no accidents happen due to technical faults on the vehicle.

***SMC is of the opinion that the legislation on the right to customize and build vehicles is working fine and without risking road safety.***

***SMC is of the opinion that if inspections are to be abolished for any type of vehicles in Sweden, it should be motorcycles. Flying inspections could prevent the problems with noise, which fails the most motorcycles at Bilprovningen.***

***Goal: That technical faults on motorcycles that cause injured and killed motorcyclists is maintained on today's low levels.***

## **2.5 Other users of the motorcycle**

The SRA's in-depth studies into fatal motorcycle accidents in the period 2000-2003 show that 27% of those killed drove a vehicle that was borrowed or stolen. In 17% of the cases, the owner relation was unknown. These figures show that inexperienced motorcyclists run a great risk when riding a vehicle that they cannot handle.

Locking the motorcycle with both the existing lock on the motorcycle and with certified accessory locks could effectively prevent theft. SMC has also pointed out that at motorcycle parking places, there should be arrangements where a chain can be fastened. Producers could also develop alarms and locks on motorcycles to make them harder to steal. Insurance companies demand two locks and sometimes even a garage for an insurance to be taken out.

When it comes to riding other people's motorcycle it is important that everyone who owns a motorcycle to lend are aware of the risks. No one should ride a motorcycle that he or she isn't able to handle. Here, the SMC consider that much more information is needed for motorcyclists and dealers.

***SMC is of the opinion that the current legislation is sufficient, but that there is a need for an information campaign for dealers and motorcyclists. The campaign should illuminate the risks when it comes to theft and lending motorcycles.***

***SMC feels that there is a need for more motorcycle parking spaces with rigid arrangements to which motorcycles can be locked.***

***Goal: That thorough information campaigns decrease theft and illuminate the risks of lending motorcycles to inexperienced riders and more motorcycle parking facilities with special lock arrangements.***

## **2.6 Preventing accidents**

One might say that motorcyclists best prevent accidents before they mount their vehicle to ride it. The motorcyclist must always do everything possible to avoid an accident taking place.

## **2.7 Children on motorcycles**

Few children are killed and injured on motorcycles. This is probably due to responsible parents who themselves are motorcyclists and realise the problems when riding with passengers. There is no Swedish minimum age for riding on the pillion on a two-wheeled motorcycle or in a side-car. SMC's recommendations are that a child who rides on the pillion on a motorcycle should be able to read the foot-pegs and sit behind the driver.

Smaller children in side-cars should sit in a car safety seat, while larger children should use a safety belt when applicable. Children should of course always wear fully covering safety clothing when riding on the pillion of a motorcycle.

***SMC is of the opinion that the current legislation is sufficient, and statistics show that a majority of Swedish parents take responsibility for both their own and their children's safety when riding motorcycles.***

***Goal: That motorcyclists continue to be aware of the risks when riding with a child and take all measures to reduce injuries and preventing accidents.***

## **2.8 Alcohol and drugs**

The SRA's in-depth studies 2000-2003 show that a fifth of all fatal motorcycle accidents were alcohol or drug related. Most of those killed were 20-29 years old. Statistics also show that around 20% did not own the vehicle they were riding. Of those who didn't wear a helmet or hadn't fastened the helmet correctly, 90% were influenced by alcohol.

That alcohol and drugs combined with motorcycles is a fatal combination is a well-known fact among motorcyclists. Most are careful not to drink alcohol when riding. On many motorcycle meets, breathalysers are provided to prevent driving under influence the day after a party. This contradicts the results of the SRA's in-depth studies 2000-2003 where almost 20% of those killed were influenced by alcohol or drugs. SMC therefore believes that some accidents in the in-depth study involve people under influence who have seen a chance to steal a vehicle. At a party, an intoxicated person might lend his or her motorcycle to a friend who also is under influence. It is obvious that helmet and safety clothing is ignored in these cases. Statistics show that most killed are young men, who are risk factors independent of vehicle.

An alcohol safety interlock device on motorcycles would prevent many unnecessary accidents. Before there is a technology that works on motorcycles, and above all a directive that demand interlock devices on all European vehicles, SMC believes there are more efficient methods to prevent alcohol and drug related accidents: more breath tests Friday-Saturday nights 00.00-06.00 and obligatory interlock devices in all vehicles owned by the most serious risk group; people convicted of drunk driving.

***SMC is of the opinion that the current legislation is sufficient, but that the problem should be raised in connection with the coming risk training for the motorcycle license.***

***SMC is of the opinion that alcohol safety interlock devices are positive for road safety, but before an EC-directive, more breath tests should be taken during weekends, and interlock devices installed within the risk group.***

***Goal: That no motorcycles are killed or injured due to alcohol or other drugs.***

## **2.9 Basic training**

SMC believes that the most crucial part in getting safe motorcycle riders is to give them a good basic training. Even if Sweden has a high standard of training compared to other European countries there are things that can be improved. A basic training with compulsory theoretical and practical elements that connect is an example. Compulsory risk training for motorcycles and introductory training for accompanying drivers is also needed. The SRA has recently compared the Swedish driving license training with other European countries and points out, like the SMC, that the training is too focused on passing the test, not to correspond to the content in the curriculum.

When it comes to training for motorcycle license, there is a levelled access that should be encouraged without new demands on practical tests between the different levels. At the OECD-conference in Lillehammer, Norway, in June 2008, the world's leading road safety experts gathered to discuss motorcycles and road safety. A top-20 list was made with the most important factors to improve motorcyclists' safety. On first place came training, which is not compulsory today to get a motorcycle license.

***SMC is of the opinion that there are parts of the Swedish motorcycle license training that can be improved to give better road safety. A consistent basic training with obligatory theory, practice and risk training is needed in connection to the implementation of the third driving licence directive.***

***Goal: A cost-efficient basic training for motorcycle driving license that give safe and risk aware motorcyclists.***

## **2.10 Further training**

SMC has organised further training for motorcyclists since 1973. The content has constantly been developed and now, SMC is one of the largest organiser of courses for motorcyclists in the world. Further training plays a natural role in improving safety for many motorcyclists. Further training gives increased knowledge and abilities but can also be customised according to the types of drivers who attend; motorcycle license included, new on motorcycles, women, men, sport bike riders, custom bike riders, off-road riders and so on. Regardless of the motorcycle, and who rides the motorcycle, further training gives improved safety.

In-depth studies in Linköping, Sweden, showed that in all fatal accidents, incorrect braking technique had been used. One-motorcycle accidents often happen in bends where the rider loses control over the vehicle. SMC believes that virtually all motorcyclists can improve their brake and curve technique. A problem that remains is that there is a lack of places where both basic and further training for motorcyclists can be pursued. A study is currently undertaken within the SRA to evaluate SMC's further training programme for sport bike riders. The OECD-conference in Lillehammer pointed out that training is the most important factor to improve safety for motorcyclists. This concerns both basic and further training.

***SMC is of the opinion that as long as the basic training can be improved, there is no reason to demand compulsory further training. Demands could be put though, on those committing traffic offences. This is to alter riders' attitude and ability to become aware of risks and hazards in traffic.***

***SMC is of the opinion that there is need for extra resources to create further training for some groups in special need: sport bike riders and those who received a motorcycle qualification together with the car license before 1976. SMC needs help to provide information to all motorcyclists in the country.***

***SMC is of the opinion that training grounds for motorcycles must be allocated where motorcyclists can perform basic, risk and further training.***

***Goal: That SMC can provide safety-improving courses to all motorcyclists and that information is sent to all motorcyclists on when, where and how this training is done every year. There should be stable training grounds for motorcycles in every administrative province. Within ten years, we***

*hope that 50% of Sweden's motorcyclists voluntarily attend further training, which will lead to fewer injured and killed motorcyclists.*

## **2.11 Speed**

SRA's in-depth studies 2000-2003 show that 40% of the killed motorcyclists were riding well over the speed limit at the time of the accident. Of these, 90% were riding so called super sport bikes. The SRA performed surveys on 24 places around Sweden in 2007 which showed that 66% of motorcyclists was riding over the speed limit. There were also roads where motorcyclists rode far below the speed limit. Many motorcyclists like to ride fast, but there is also a large group where riding a motorcycle means chugging along at speeds less than 90 km/h.

Speed is important for motorcyclists when dealing with a panic situation, an unexpected obstacle or a sharp bend, which requires a sudden brake and/or manoeuvre. The higher the speed, the longer the stopping distance will be. Some situations might be handled through a good basic training and/or further training combined with practice alone.

In other cases the speed is so high that the driver is without a chance, especially if he or she is an inexperienced driver. The in-depth studies from 2000-2003 show that those who have had their motorcycle license for less than two years make up almost 50% of those killed. Motorcyclists have to realise that speed limits are for everyone who travels on the road. The motorcyclists also have to realise why there are speed limits and what consequences speed can have in a possible accident. The police has repeatedly pointed out that there really is a small group who cause big problems. Once again it is mainly about riders on super sport bikes who don't stop at inspections, lack number plates and simply put themselves above the law. This is also the group that SMC has invested most in during the past years when it comes to training and information. The investment has been successful, as the amount of killed sport bike riders has been reduced. The OECD-conference in Lillehammer illuminated the need of a dialogue with the motorcyclists in order to spread the safety message as the sixth major factor.

*SMC is of the opinion that education and further training can improve knowledge about motorcycle riding which is the most important factor according to the OECD-conference in order to improve safety.*

*SMC is of the opinion that the current speed limits don't need to be changed, except the changes recently adopted.*

*SMC is of the opinion that speed limits on roads should apply to everybody.*

*SMC is of the opinion that more traditional police controls on the roads is the best method to improve the motorcyclists' abidance to the speed limits.*

*Goal: To increase the amount of motorcyclists who respect speed limits and to lower speed significantly within the group who ride the fastest: the super sport bike riders. This should reduce the amount of killed and injured motorcyclists within the risk group.*

## **2.12 Risk awareness**

SRA's in-depth studies 2000-2003 show that 85% of the killed riders had owned the motorcycle less than two years. 20% died during the first year they had the A-license. 40% were 20-29 years and most were male. Statistics show that there is a great need for risk training, especially for the group young males. There is also need for other efforts in the shape of information on the risks, preferably in re-occurring campaigns. The information should illuminate the most common accidents and how they can be avoided as a motorcyclist. In SMC's further training, risk awareness is included as an important part.

*SMC is of the opinion that risk training for A-qualification with particular focus on the high risk group young males is needed.*

*SMC is of the opinion that there is a need for information campaigns aimed at motorcyclists*

*about the most common accidents. These campaigns should be combined with an invitation to further training with elements about risk awareness.*

*Goal: That Swedish motorcyclists are aware of the most common accidents and how to avoid them as well as an individually adapted risk training for everybody taking a motorcycle license which can reduce the amount of killed and injured motorcyclists.*

## **INTERPLAY WITH OTHER ROAD-USERS**

### **3.1 From a motorcyclist's perspective**

Roughly half of the fatal motorcycle accidents in the SRA's in-depth studies involved collisions with other vehicles, in most cases cars. This indicates a need for a better interplay between motorcyclists and other road-users. The question of visibility has been raised earlier. In many accidents at junctions, the motorcyclists were driving well over current speed limit according to the SRA's in-depth studies 2000-2003. There are also examples of motorcyclists who have started to overtake in a junction. This is nothing a motorcyclist should do, even if it's legal. The need of special attention and awareness about the risks in junction is therefore something that should be included in the risk training. In most head-on collisions, it was the motorcyclists who had gone over in the meeting lane. The reason for this is not known, but a possible cause is that the riders had lost control over the vehicle. When it comes to overtaking accidents, motorcyclists overtaking at the same time as he or she had a meeting caused the majority of accidents. All motorcyclists can be approached through campaigns on the most common types of accidents and how to avoid them and how to increase visibility. Regularly returning campaigns on various issues was highlighted as the seventh most important factor to improve motorcyclists' safety at the OECD-conference in Lillehammer.

*SMC is of the opinion that motorcyclists can improve the interplay with other road-users by risk training, information and aimed campaigns.*

*Goal: To reduce the amount of collisions with other vehicles through increased knowledge and experience. SMC will create a website to collect and spread facts on the issue.*

### **3.2 Inattentive car drivers**

Far too many motorcyclists are killed and injured every year because of inattentive car drivers. It is simply hard to see a motorcycle in the traffic environment. Research shows that it isn't impossible to see a motorcyclist, but that the car drivers have to learn to look out for motorcyclists. Drivers who lack the ability to see a two-wheeled vehicle in traffic should have their driving license revoked intermediately. It should be self-evident that all driving license education gives knowledge on how motorcycles move in traffic, knowledge about the specific risks at junctions and knowledge about the consequences for unprotected road-users when not using indicators and mirror at sudden lane changes for instance. During all driving license education it would be desirable with a few hours of riding in a motorcycle simulator to give an experience how it is to ride a motorcycle or moped in a risk-free environment. Annual campaigns aimed at car drivers in the spring when motorcycles come out in traffic again is a method which is used in many countries around the world.

The OECD-conference identified a general education to improve attention and acceptance of motorcyclists for all vehicle drivers as well as attention campaigns as two of the ten most important issues to reduce collisions between cars and motorcycles.

All technology that warns drivers that they are too close to other road-users, motorcycles among others, is positive for motorcyclists. This technology already exists today and should be developed for both cars and motorcycles to avoid collisions. When the car driver doesn't see the motorcyclist, a warning system is activated and warns the driver, which could avoid a collision. Regrettably, the SMC sees cases every year where car drivers cause the death of motorcyclists and aren't even being trialled. Prosecutors dismiss cases without any investigation to be made. Even so, the motive is often that the motorcyclist was driving too fast. This is not acceptable and doesn't create understanding to why citizens should follow the rules that are in force. It is reasonable to expect that every traffic accident that cause the death or serious injury of a motorcyclist to result in a thorough police

investigation, where the prosecutor has an objective basis to make a decision on.

***SMC is of the opinion that attention towards motorcyclists should be included in all driving license training.***

***SMC is of the opinion that all technology that warns when a driver is too close to another vehicle can reduce the amount of killed and injured motorcyclists.***

***SMC is of the opinion that campaigns aimed at car drivers, which illuminate the problems, should be run annually.***

***SMC reckons that every accident that kills or seriously injures a motorcyclist should be investigated thoroughly objectively.***

***Goal: To get more attentive drivers through better understanding in the basic training and campaigns. Development of new technology reduces collisions. The risk of penalty increases attention among all road-users. All things put together should lead to fewer killed and injured motorcyclists.***

### **3.3 Driving in queues and motorcycles in bus lanes**

A motorcyclist is capable of filtering through queues between lanes and/or in the same lane as a car. As long as the motorcyclist overtakes on the correct side, rides at an appropriate speed and with a safe distance, this is also legal according to Swedish law. Regrettably this is being misused by a small group of motorcyclists who zig-zag between cars at high speed in rush-hour traffic. At the same time, many car drivers find it hard to accept that another vehicle can get through faster and do everything to not let any other road-user through. In the Netherlands a code of honours has been created with common rules on consideration when driving in queues to improve safety for the motorcyclists.

In Stockholm the motorcyclists have the right to ride in certain bus lanes within the City of Stockholm. It started as a trial and was made permanent when it became clear that it improved safety and reduced the amount of accidents. SMC has applied at the county administrative board in Stockholm to extend this to all bus lanes in Stockholm but was rejected. In many European countries more and more bus lanes are opened for motorcyclists for one single reason: it becomes easier for other road-users to see the motorcyclists and it reduces the amount of accidents. In several countries, all bus lanes are open for motorcyclists by law.

***SMC is of the opinion that a Swedish code of honours would improve acceptance and thus safety for motorcyclists. The code should be aimed at motorcyclists and car drivers alike and should have clear rules on driving and riding in queues.***

***SMC is of the opinion that all bus lanes in Sweden should be made available for motorcyclists through a change in the law and the name to be changed to motorcycle and bus lane.***

***Goal: That a better interplay between different groups of road-users and more bus lanes to be opened for motorcycles will reduce accidents in congestion and queues.***

## **A MORE MOTORCYCLE FRIENDLY ROAD TRANSPORT SYSTEM**

### **4.1 Policies for the Swedish road transport system**

Motorcyclists as a group of road-users are completely missing from all SRA documentation for development of the road transport system, for running and maintenance and working on roads. This contradicts the intentions in Vision Zero that “the road transport system must be designed in consideration that people make mistakes and therefore cannot be avoided completely”. A cooperation that will change this has been initiated between the SRA and SMC. Naturally, motorcyclists as road-users should be a group of road-users that is being considered in the road network that is being maintained by the municipalities in Sweden.

At the OECD-conference in Lillehammer it was stated that it is a fundamental condition for the safety of motorcyclists that they are included in current transport and infrastructure policies. This issue was deemed the second most important of all factors. On eighth place came the creation of guidelines for the development of infrastructure, and on eleventh place education for road engineers in creating an infrastructure with a motorcyclist perspective. According to SMC it is self-evident that all road-users must be taken into consideration regarding all aspects of the road transport system. This should be the case in everything from projecting and planning to the finished road, in road works and maintenance of existing roads. The standard of the roads should be overhauled and developed to correspond to the motorcyclists' needs for safety.

***SMC is of the opinion that motorcyclists and the motorcyclists' specific needs instantly should be incorporated in Swedish transport policies and in all policies regulating how roads are constructed and kept by the SRA and Sweden's municipalities and counties.***

***Goal: That the Swedish road transport system takes consideration to motorcyclists who make mistakes in traffic.***

#### **4.2 Specific problems**

SRA's in-depth studies from 2000-2003 show that 7% the motorcycle accidents were caused by faults in the road. In 46% of the fatal accidents, various forms of collision force on the side of the road are mentioned. The most common obstacles are trees, side barriers, posts, ditches and slopes. Statistics show that hinders at the side of the road is a problem for motorcyclists. SMC has nothing against median barriers protecting against meeting traffic. But the SMC wants the barriers put up to be safe for everybody who drives on the roads. A standard for barriers that involve demands on crash tests with motorcyclists will be developed by CEN, but there is no obligation to make use of it. Therefore, all road-users must take responsibility to make the road transport system safer for motorcyclists. When new instalments of barriers are made, the type that is safest for motorcyclists should be used.

On spots where there is a large risk for motorcyclists to drive off the road, i.e. in curves, no barriers should be put but, but the side-area secured instead. Regrettably, the SRA policies recommend the opposite, based on other road-user's needs. If a barrier has to be put up, it should be equipped with motorcycle-friendly protection in all places where there is a large risk for a motorcyclist to drive into the barrier. When older barriers are replaced, they should be replaced with motorcycle-friendly barriers, even if the cost is higher. At the OECD-conference, guidelines to include motorcyclists in the development of infrastructure were identified as an important part in improving the motorcyclists' road safety.

Within the project "10.000 km road", Sweden's most important roads for motorcyclists have been pointed out. There, accidents from STRADA are also added. In Norway, guidelines will shortly be developed as to where motorcycle-friendly protection should be placed on the road-network. Sweden should be able to learn from these experiences.

The SRA's in-depth studies show that junctions and curves are critical points for motorcyclists. That is why it is important that certain consideration is taken towards motorcyclists when planning junctions.

***SMC is of the opinion that the needs of the motorcyclists must be considered when it comes to obstacles in the road environment. Safe side areas must be used more often for the safety of motorcyclists. The roads in "10.000 km road" are an excellent start for road keepers to start with.***

***SMC is of the opinion that when any form of obstacle is placed in the road-environment, as well as when planning junctions, special consideration should be taken towards motorcyclists.***

***Goal: That everyone working with planning, building and maintaining roads in Sweden see the connection between cause and consequence for motorcyclists in case of an accident. It will give safer roads for all road-users and decrease the amount of accidents.***

*That funding is specifically given that can improve motorcyclists' safety in the traffic environment.*

### **4.3 Friction, paving and loose gravel**

Since a motorcyclist rides on two wheels, having sufficient friction is more important than for car drivers. Therefore, the choice of paving is crucial. The need for guidelines from a motorcycle perspective was raised as an important issue at the OECD-conference.

At minor repairs on roads it is now possible to remove superfluous gravel after 20 minutes. Since this greatly improves motorcyclists' safety it should naturally be included as a demand from the road keeper on the responsible contractor. At major road works, motorcyclists should be advised not to ride through the road works and be referred to an alternative route. To avoid that gravel comes onto roads through cars and HGV's that take shortcuts through bends, other proven measures should be taken, like reinforced shoulders. To avoid that that gravel comes onto roads from connecting smaller roads, tarmac should be applied a short stretch on these. When there is gravel on the road there should be warning signs until the gravel is removed.

*SMC is of the opinion that knowledge about alternative repair and maintenance methods to improve motorcycle safety should be spread to all road keepers and contractors.*

*Goal: That all who maintain roads in Sweden instead of the current methods use cost-efficient alternatives which improve motorcyclists' safety when repairing and maintaining roads. That funding is provided specifically to improve motorcyclists' safety.*

## **5 SAFER VEHICLES**

### **5.1 Technical problems and accidents**

Few accidents are caused by technical problems. This is confirmed both by SRA's in-depth studies and other European in-depth studies of motorcycle accidents. The construction of the motorcycle makes it hard to build in driver and passenger like with cars. In most accidents involving a motorcycle, the rider and vehicle are separated. Then the personal safety equipment is much more important than the construction of the vehicle. To prevent accidents from happening, it is important to get motorcyclists riding with ABS-brakes and get producers to develop combined brake systems, CBS. The SRA's in-depth studies showed that in some cases, incorrect braking technique was one cause of the accident. But the effect of ABS-brakes has to be compared with the total price of the motorcycle, especially when it comes to smaller bikes. That producers continue to develop better brake systems was identified as the sixth factor at the OECD-conference in Lillehammer.

There are also smaller details that cause a number of injuries and accidents every year. New tyres have a slippery coating that makes the motorcycle lose the grip and the rider to fall. Once the coating is removed, the problem is solved. Another simple measure is to offer all motorcycle customers crash bars or similar safety devices that stick out from the sides of the motorcycle. This reduces the risk of leg fractures and expensive damage to the motorcycle. Areas where technological development can give effect is lighting to improve visibility to other road-users and warning systems that for example warn of risk for collisions, accident frequency tiredness and similar things. FEMA, the Federation of European Motorcyclists' Associations, where SMC is member, is since March 2008 taking part of the project SAFERIDER that will study whether it is possible to develop systems for motorcycles. In section 2.1.2 SMC illuminates the problems regarding visibility. When it comes to the lighting on the vehicle, there is probably a lot to do to make motorcycles more visible for other road-users.

*SMC is of the opinion that ABS-brakes should be offered on all motorcycles.*

*SMC is of the opinion that the coating on all new tyres should be removed before delivery.*

*SMC is of the opinion that all buyers of motorcycles should be offered crash bars in connection to purchase from dealers.*

*SMC is of the opinion that lighting on motorcycles should be developed to improve the*

*motorcyclists' visibility to other road-users.*

*SMC is of the opinion that there are possibilities in new technology to make safer motorcycles, but that the driver always should be in control over the vehicle.*

*Goal: New technology and measures from producers can decrease the amount of killed and injured motorcyclists.*

## **5.2 Front number plate**

The past year, a suggestion for a front number plate on motorcycles has been brought forward. SMC doesn't believe that a front number plate will reduce the amount of killed and injured motorcyclists. In 2007 only three of 60 fatal accidents happened on roads with speed cameras. Most motorcycle accidents take place on the smaller road network with a 70km/h speed limit where there are no cameras. A front number plate can neither deduce the driver from the vehicle, since all motorcyclists wear a safety helmet with a visor and/or goggles. SMC would rather see more traditional police inspection along our roads (see section 2.2.5).

*SMC is of the opinion that a front number plate on motorcycles isn't the right way to reduce the amount of killed and injured motorcyclists.*

## **6. CONCLUSION**

There are about 300.000 motorcycles on the Swedish roads today and the amount is increasing every year. The amount of registered motorcycles has been doubled during the past decade. This development means that the motorcyclists and their specific need must be taken seriously on all levels in the traffic environment and in the society as a whole. This is not the case today, and SMC often argues against ideas that are founded on prejudices and lacking knowledge.

SMC is a unique organisation, since we represent all types of bikers. SMC is a non-profit organisation and is almost completely financed by subscription fees. SMC has unique knowledge about motorcycling through its members and networks in Sweden, Europe and the rest of the world. Based on experiences from the OECD-conference, SMC suggests that a national agenda for motorcycle issues is created. The aim is to give common guidelines for how the motorcyclists' safety can be improved on all levels and be a natural part of society.

SMC's preliminary suggestion for the content of the agenda is to:

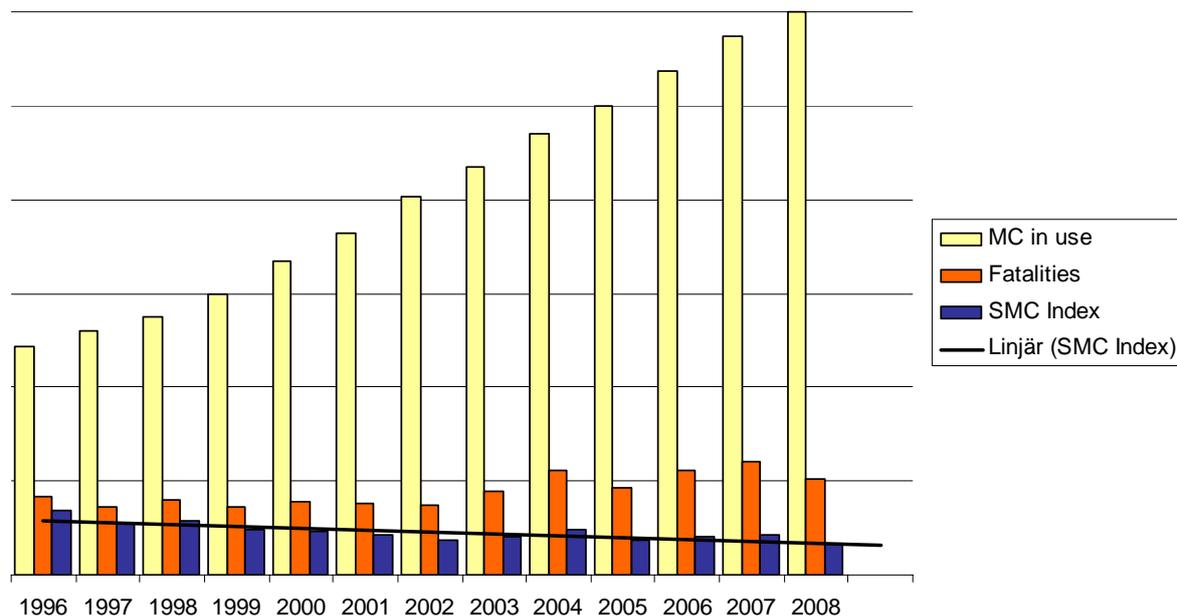
- increase the safety for motorcyclists through prevention of both injuries and accidents.
- provide guidelines for basic and further training for motorcyclists.
- provide guidelines for campaigns aimed at motorcyclists.
- provide guidelines for improvements of interplay between different groups of road-users.
- provide guidelines for how motorcyclists as road-users can be incorporated in all legislation regarding transport and infrastructure.
- give suggestion to how motorcycles can be made safer.
- initiate research where needed.

SMC offers itself to lead the work with the agenda with all relevant parties who work with motorcycle related issues in any form, for example departments and authorities, producers, dealers, media, insurance companies, training bodies and other organisations. An application for funding will be sent to the SRA before 15 September.

## SMC Index, fatalities versus motorcycles in use

Sveriges MotorCyklister / Björk, Christensen Jan. 2009

Sources: SCB, Vägverket



### *Killed on motorcycles 1980 - 2007*

<i>Year</i>	<i>M/C in traffic</i>	<i>Killed</i>	<i>SMC Index</i>
<i>1996</i>	<i>121950</i>	<i>42</i>	<i>3,44</i>
<i>1997</i>	<i>130041</i>	<i>36</i>	<i>2,77</i>
<i>1998</i>	<i>137466</i>	<i>40</i>	<i>2,91</i>
<i>1999</i>	<i>149970</i>	<i>36</i>	<i>2,40</i>
<i>2000</i>	<i>167346</i>	<i>39</i>	<i>2,33</i>
<i>2001</i>	<i>182092</i>	<i>38</i>	<i>2,09</i>
<i>2002</i>	<i>201526</i>	<i>37</i>	<i>1,84</i>
<i>2003</i>	<i>217015</i>	<i>45</i>	<i>2,07</i>
<i>2004</i>	<i>235196</i>	<i>56</i>	<i>2,38</i>
<i>2005</i>	<i>250000</i>	<i>46</i>	<i>1,84</i>
<i>2006</i>	<i>268793</i>	<i>56</i>	<i>2,08</i>
<i>2007</i>	<i>286867</i>	<i>61</i>	<i>2,13</i>

SMC has analysed the development of killed motorcyclists since 1997 when Vision Zero was adopted, in relation to the amount of motorcycles in traffic. From these figures, an SMC Index has been calculated, which shows the development of killed motorcyclists in relation to the number of vehicles. With large increases in the number of vehicles, SMC considers it to be a fairer goal if an index is used.

*With a national motorcycle agenda and an active participation from all parties, SMC's goal is to reduce the amount of killed from 2007's index of 2,13 to 1,5 in 2014. This means a reduction of index by 30%. When the national motorcycle agenda has been implemented and gives full effect SMC counts on that the index will continue to reduce even after 2014 according to Vision Zero's intermediate goals.*

SMC, The Swedish Motorcyclist's Association, is a non-profit organisation for all motorcyclists who ride on public roads. SMC has around 66 000 members. SMC's most important fields of work are road safety, tourism, insurance, consumer rights, influencing public opinion and international co-operation.