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EU: enforcement an important road safety instrument

Annually 40,000 people are killed and 1.5 million are injured in road crashes in the present member countries of the European Union. After May 2004, when the EU has grown to 25 countries, a considerable increase in the number of casualties is to be expected, especially in the 10 new member states. The EU aims to have halved the number of fatalities by 2010.

This ambitious target needs to be achieved with limited resources and with immediate effect. Various studies that were carried out in EU projects and by the ETSC have shown that there are three important causes of death and severe injury in the EU: speeding, alcohol use, and driving without a seatbelt. Reducing these offences will result in a reduction of the number of fatalities by 25%.

Although the EU has not been able to reach an agreement about the same laws for all member states, all countries have laws regarding limits and rules for speed limits, alcohol use, and seat belt use. Comparisons of the effects of such

laws in various countries have shown that just having a law leads to a reduction of the number of casualties, but that law in combination with enforcement has much better results. This is why the EU countries have decided to strongly intensify the surveillance of traffic offences.

ESCAPE

Enforcement was the main subject in the EU project ESCAPE. Enhanced Safety from Appropriate Police Enforcement, in which SWOV participated. Several aspects of police surveillance were studied. The differences in legal regulations and procedures in the different countries were

People know that speed kills, but I am not sure whether they appreciate when they are at the wheel of a vehicle, what different speeds do.

(Tom Watson, Labour MP)

QUOTE

Editorial

In the final issue of the year 2003 we report on three European projects: ESCAPE, SARTRE and HUMANIST. The EU recommendations which are also based on the results of the ESCAPE project are discussed in detail. The opinions of the Dutch motorist on several traffic safety topics can be found in the article on the results of the SARTRE 3 project.

examined. So was the way in which the police is organized, together with the extent and nature of surveillance and enforcement. The best practices were also described, as well as the future developments. In spite of the large differences in the precise approach within the EU countries, practically every country has a procedure to punish offences in a relatively simple manner. There are also similarities in the way the procedure takes place. The fine is an important means, but in addition, special 'extras' are applied. These include revoking the driving license, mandatory following of a course, fulfilling 'community services', etc. Recently, on December 2nd 2003, ESCAPE has been officially concluded with a symposium.

The purpose of this symposium was, in the first place, to involve practical experts in an intensive discussion of the results. In addition, it was intended to make an inventory of how the knowledge from this project had already contributed to developments at the national and EU levels. All EU member states were represented.

Results

It appears that enforcement works, that the number of offences diminishes, and with it the number of road casualties. The French example that was presented at the conference illustrates this. President Chirac has made increasing road safety in France a spearhead of his policy. To achieve this, the surveillance has been intensified, among other things, and a French equivalent of the Dutch Administrative Enforcement of Traffic Offences Act (known in Holland as the "Mulder Law") has been introduced. This law puts collecting the fines outside criminal law and treats it the same as collecting taxes. Figure 1 clearly shows the enormous reduction in the number of road deaths.

EU recommendations

At the EU level, ESCAPE has influenced the recommendations for effective police surveillance that the European Commission formulated on October 21st 2003 in the 'Commission recommendation on enforcement in the field of road safety'. The EU has considered the following ESCAPE conclusions of importance:

- Enforcement can rely on broad support;
- Enforcement based on deterrence is effective;
- Automated methods are effective;
- Enforcement requires dedication and commitment;
- More technological aid is necessary and ways of catching and punishing offenders must be simpler;
- There are large differences in the efficiency of enforcement within the EU.

A study of the relation between surveillance costs and the expected effectiveness on accidents

shows a very positive cost-benefit ratio. The best practice methods of surveillance studied have a ratio of 5 to 1 for speeding, 3-8 to 1 for alcohol, and 10-13 to 1 for seatbelt use.

Partly based on the cost-benefit analysis and the studies within the ESCAPE project, the European Commission concluded, among other things, that enforcement is an important and effective method to prevent road crashes, road deaths, and injured. The EU is of the opinion that speeding, alcohol use, and seatbelt use must be controlled consistently. The Commission also recommends that enforcement must be combined with campaigns in order to have an optimal effect. The European Commission hopes to achieve a reduction in the number of road deaths and injured by allowing the various member states to set up their own plans. These plans should contain the recommended measures for enforcement and campaigns to combat the most important causes of traffic death. The enforcement plans must be regularly evaluated for their effectiveness and, if necessary, be adjusted.

The Netherlands

What do the results of ESCAPE and the recommendations of the European Commission mean for the Netherlands? In this country, the surveillance of a large number of offences has recently been greatly intensified. Among these are alcohol use, speeding, and seatbelt use. For all these, the intensified surveillance is based on plans, and the result is also measured in terms of behaviour changes. The settlement has been simplified by the "Mulder Law", thus greatly reducing the pressure on the courts. Automated surveillance has increased greatly and, as a result of this, the subjective chance of being caught has also increased greatly (see also the SARTRE 3 study). If we compare this with the recommendations of the EU, we can conclude that police surveillance in the Netherlands is on the right road. ◀▶

The final report and the various sub reports of the ESCAPE project are on the ESCAPE website that can be reached via the links on the SWOV website. The final report is Deliverable 10.

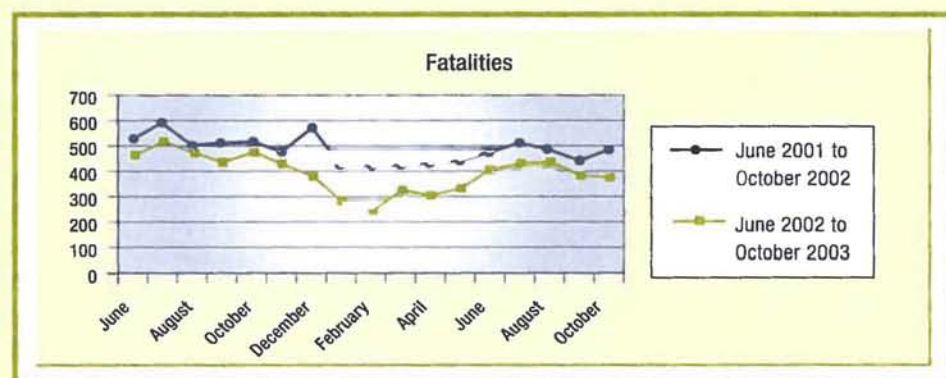


Figure 1. Reduction of fatalities after policy change in France

Advanced Cruise Control and road safety: good information needed

ACC can increase driving comfort as well as road safety. However, when used incorrectly it can lead to greater unsafety. It is also essential to provide information about when ACC should be used, and when not.

This became clear from a literature study that was based on the results of various Dutch and foreign projects. The projects studied mainly used driving simulator experiments, computer simulations of traffic flows, and, to a limited extent, field tests with cars fitted out with instruments. ACC has only recently been for sale, so that practical user information was either not or hardly available.

ACC

A sustainably safe road traffic requires sustainably-safe vehicles, as well as a sustainably-safe infrastructure. The Sustainably Safe vision emphasizes understanding of the human driver with all his/her capacities, limitations, and motivations. For a long time now, traffic and transport experts see an important role for intelligent transport systems when creating a sustainably safe road traffic. This includes the Advanced Driver Assistance Systems (ADAS) that support the driver's driving task and thus increases the driving comfort. An important development in this is the Advanced Cruise

Control (ACC). It is also often called the Adaptive Cruise Control and Intelligent Cruise Control. ACC, an initiative of the motor industry, works as follows. If there is no vehicle directly in front of the ACC vehicle, the system maintains the intended speed set by the driver, consistent with the conventional cruise control. When a vehicle in front is detected, the ACC vehicle's speed is adjusted until again the distance equals that set by the driver. If the vehicle in front disappears, the ACC vehicle accelerates to the above-mentioned intended speed. SWOV's literature study showed that using ACC has advantages and disadvantages.

Advantages

The presently available ACC systems can have a positive road safety effect if they are used on motorways, outside the rush hours, and with good visibility weather. An advantage of ACC is that by increasing the user's comfort, he/she becomes less tired.

ACC also has a moderating effect on the speed, and the percentage of very short headway times gets smaller. An additional positive effect is that the fuel consumption drops. Moreover, learning to drive with ACC is easy, and the system is easy to use.

Disadvantages

As well as advantages, the existing ACC systems also have a number of disadvantages. Using ACC on winding, urban provincial roads and on congested motorways is not desirable because, under these circumstances, the safety actually decreases. Vehicles in front, by going round a bend, can disappear from view, thus preventing the system from functioning properly. In addition, ACC drivers seem to accept smaller

distances between themselves and oncoming vehicles while overtaking. They also seem to

effects of diminished alertness, ACC should, for example, be able to detect stationary vehicles.



react later to traffic on the right that has priority when approaching an intersection. ACC should also not be used in traffic situations or in weather with a poor visibility.

For road safety reasons SWOV advises against using ACC in busy traffic, when there is congestion. ACC drivers have the inclination to drive faster than desirable in such situations. The ACC system is switched off because the driver has to brake more often himself. A simultaneous increase in road capacity and road safety is, therefore, not feasible with the current ACC systems.

It is worrying that the driver does not always react adequately in critical situations, or that the ACC system fails. To compensate for the negative

The future

The road user must be well informed about when it is safe to use ACC and when it is not. SWOV advises good information, and sees driving lessons as one of the ways to provide such information. Other information agencies could inform road users about the safe use of ACC. The information should also emphasize the fact that the driver should regularly control the ACC system that it is still working properly. ◀▶

The report 'Advanced Cruise Control and road safety; a literature study' (R-2003-24) [in Dutch with an English Summary]; can be consulted and downloaded on the SWOV website under 'Publicaties'.

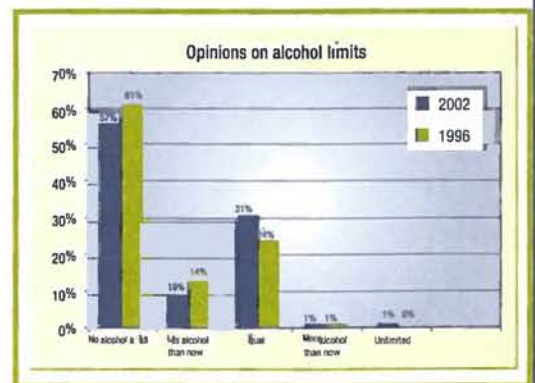
SARTRE 3: support for enforcement

A majority of the Dutch drivers supports the present traffic measures or believes extra measures must be taken in order to improve road safety. This is one of the results of the third SARTRE study that was carried out in 2002 in Europe. Measures that find a lot of support are more police surveillance lower alcohol limits for new drivers, introduction of a black box in the car, improvement of driving education, road improvements, and more information.

In each of the 23 participating countries, a representative sample of approximately 1000 car driving licence holders was asked about speed limits, drinking and driving, police surveillance and their opinions on traffic measures. SARTRE, an abbreviation of "Social Attitudes to Road Traffic Risk in Europe", was carried out in 23 European countries, including the Netherlands, and also took place in 1991 and 1996. Some of the Dutch results are discussed below.

More enforcement, better driving education, more information, better roads

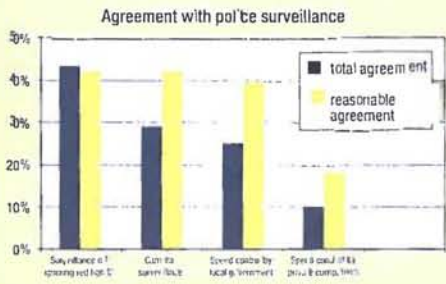
The participants were asked which topics need to be given more attention by the government in order to improve road safety. It appears that 65% is in favour of an increase in enforcement, 76% thinks the driving education needs to be improved, and 68% believes more publicity campaigns are necessary.



Enforcement: speeding and alcohol

Almost half of the drivers reported ever having been fined for speeding. Despite these fines, 65% of the motorists believes that there should be more police surveillance. There was considerable support for the use of cameras, both for speed and for ignoring red lights. To prevent speeding, a speed limiting device may be

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effective. 41% is in favour of installing one in the vehicle. According to a majority, speed limits, especially urban and provincial ones, hardly need to be changed. 75% of the motorists indicated that urban and provincial speed limits had to remain the same.

Opinions about speed limits on motorways are divided: 50% think that the limit should go up, while 44% believe that the present limits should stay the same. 3% believe that limits on motorways should be abolished, while a similar percentage wants to lower the limits.

Use of alcohol when driving is clearly not acceptable: almost all motorists in the Netherlands feel that drinking and driving should be punished more severely. The majority also thinks that the present limit of 0.5‰ should be stricter. 57% think that no alcohol should be consumed at all before driving. According to 31% the limit should

stay the same, and 10% think the limit should go down further, to 0.2‰ for instance. For novice drivers the limit should be 0‰, according to 70% of the Dutch drivers.

New measures

The majority of the motorists who were interviewed is in favour of the introduction of new measures like a mandatory course for drivers who have been caught under the influence of alcohol more than once. Other new measures which can improve road safety are also supported like an alcohol lock in the car (39%), a fatigue detector (55%), and the introduction of a black box which can record the cause of a crash.

Using the phone while driving

Approximately 30% uses the phone while driving. About 20% of the Dutch drivers makes 1 or 2 phone calls per day with an average car use. 9% makes 3 or more calls per day while driving. It is remarkable that the majority of Dutch drivers believes that phoning handsfree is less dangerous than phoning handheld. Research has shown, however, that both are equally dangerous.

Policy recommendations

The study indicates that Dutch motorists have a number of incorrect ideas on a number of specific topics. Information and education could inform drivers about the dangers of using the

telephone while driving (both handsfree and handheld) and about the use of seatbelts. Many drivers appear to have the idea that they will be trapped by the belt in emergencies. Publicity and education should also pay attention to tailgating and the risks of speeding.

The official, international SARTRE final report is being prepared and will probably be made available in early 2004. The complete report of the results for the Netherlands (in Dutch with an English summary; number R-2003-25) can be studied and downloaded from the SWOV website, under the heading 'Publications'.



HUMANIST: European Union cooperation in a Network of Excellence

SWOV will participate in the HUMANIST Network of Excellence (NoE), which is part of the 6th framework programme "Information Society Technologies". The goal of NoE is to gather knowledge and to promote cooperation between research institutes within the EU. HUMANIST is aimed at telematics in traffic.



Although knowledge of research into human limitations and abilities, and of cognitive psychology is present in the EU, it is spread among a large number of EU country institutes and there is hardly any structural cooperation. In order to change this, a Network of Excellence was recently set up. The NoE wants to bring together the most important EU research institutes in the study of the possibilities of promoting road safety by means of research of human centred design (i.e. the human as central figure) in the field of telematics and road traffic. This cooperation strives to achieve exchange among researchers, joint projects, and the use of each other's research facilities.

Telematics

The expectation is that telematics applications along the roadside (e.g. flexible speed limits that take temporary circumstances into consideration) and telematics applications that aid the driver (e.g. route navigation) can play an important role in regulating mobility and the improvement of road safety.

For this, it is essential that the telematics applications are designed in such a way that they fit the abilities and limitations of the road user. Furthermore, they will only be used when they are experienced as being useful. Apart from this, it is not to be expected that all effects of an application will be positive. In these cases, any

damaging side effects will have to be discovered in time. This means that the various telematics applications will have to be studied from the points of view of many disciplines and approaches. In this, the contribution of research of human limitations and abilities, and of the cognitive psychology is indispensable.

The expectation is that the NoE activities will have the following results:

- the potential social effects of telematics will become greater;
- it will be easier to standardize the approaches of telematics in the various countries;
- it will be possible to react quickly to new technologies;
- there will be a good overview of the state of affairs in this field;

Traffic calming

The actual implementation of traffic calming schemes may not be that easy, but is nevertheless possible.

Commissioned by the Swedish National Road Authority, SWOV carried out a literature study to provide a concise overview of knowledge of and experiences with traffic calming schemes in urban areas, both on a technical level and on a policy level.

Traffic calming refers to a combination of network planning and engineering measures to improve both road safety as well as other aspects of the residents' living environment. The study looked at various characteristics of the urban network which are relevant for meeting the objectives of traffic calming, such as the functional classification of the network, the network structure of residential areas, and the need for a safe and attractive network for pedestrians and cyclists. In addition, the report discusses the use of technical road engineering measures to achieve an appropriate safe car speed.

Different types of road

Especially in residential and shopping areas, network characteristics have to be supported by road engineering measures, so that through-traffic is avoided, and remaining motorized traffic drives at a low speed and is subordinate to the other users of the area. Traffic calming in residential areas has a large road safety effect: it leads to a 25% decrease in the number of victims. In the Netherlands traffic calming in residential areas has seen a growth of 50% since the beginning of the Duurzaam Veilig (Sustainably Safe) programme.

On urban main roads, the possibilities of traffic calming are much more limited. The efficient processing of motorized traffic is one of the major functions of this type of roads. This would

- a gap in knowledge will be noticed quicker;
 - the chance of the wheel being invented yet again at various places simultaneously will be smaller.
- Apart from the mutual cooperation, it is an important task of the network to spread knowledge to individuals and organizations that will use the knowledge in applications. This means that courses will be offered, but also that active contacts will be sought with organizations such as the European car manufacturing industry and the organizations that work on normalization and standardization.

Participation

Within the HUMANIST project research will be carried out in 7 areas. SWOV participates in this research in the fields of:

require higher speeds at the road sections and, hence physically separated pedestrian and bicycle facilities. Speed reduction, however, would need to be realized at intersections and at midblock pedestrian and bicycle crossings, since at these locations, cars and vulnerable road users have to mix. At an urbanwide level, a traffic calming policy aims at a reduction of the number of car trips. Safe and comfortable facilities, for pedestrians and cyclists, reliable, dense, and cheap public transport facilities and restricted parking facilities in the city centre will make alternative transport modes more attractive. It is concluded that much is known about the technical opportunities of urban traffic calming. It is also concluded that traffic calming is effective in reducing car speeds, car traffic volumes, and road traffic crashes.

Policy

A successful traffic calming policy has many advantages for road safety, the environment, personal health, and more generally, to the liveability of a town or city. In other words, traffic calming provides many opportunities to make urban life more attractive for the residents. However, traffic calming may have drawbacks at an individual level, since it may be felt that it has a direct limitation of a person's freedom of choice. Therefore, a successful implementation of traffic calming schemes needs to be supported by publicity and information aimed at citizens, organizations, and action groups. Moreover, specific policy elements, which were first introduced in the Duurzaam Veilig programme, are also supportive or even a prerequisite for successful implementation of large scale traffic calming schemes:

- The conviction that the current policy was not sufficiently effective in achieving the road safety targets. Thus, something 'new' was needed: a new concept to solve the road safety problem.
- Road safety experts and the professional world

- identifying road users needs in relation to telematics. SWOV specifically aims at the needs of older drivers;
- applying ITS to traffic education, and the use and the need to pay attention to ITS in driving education;
- the possibilities and effects of speed management with the aid of ITS

Because the exchange and making available of knowledge is the central issue in a NoE, the first results can be expected after 6 months. ◀ ▶

The Network of Excellence Humanist will start on 1 March 2004 and will continue until 29 February 2008.



should express themselves in full accordance with the new concept. If experts disagree, policymakers and politicians will feel uncertain and decisions might be postponed.

- The concept has to appeal in both the short and the long term. Of course, no concept is drawn up for eternity.
- From the start the concept has to enhance creativity and not resistance. An important element with respect to this: appealing directives and no obvious drawbacks.
- Road safety organizations and pressure groups (stakeholders and actors) have to consider the concept as offering new opportunities.
- Implementation of the concept must be integrated in existing budget streams.
- Structural opportunities to connect the concept to other activities should be looked at and created: drafting guidelines for road design, education curricula for schools, etc.
- Intelligent ways to commit stakeholders have to be found.

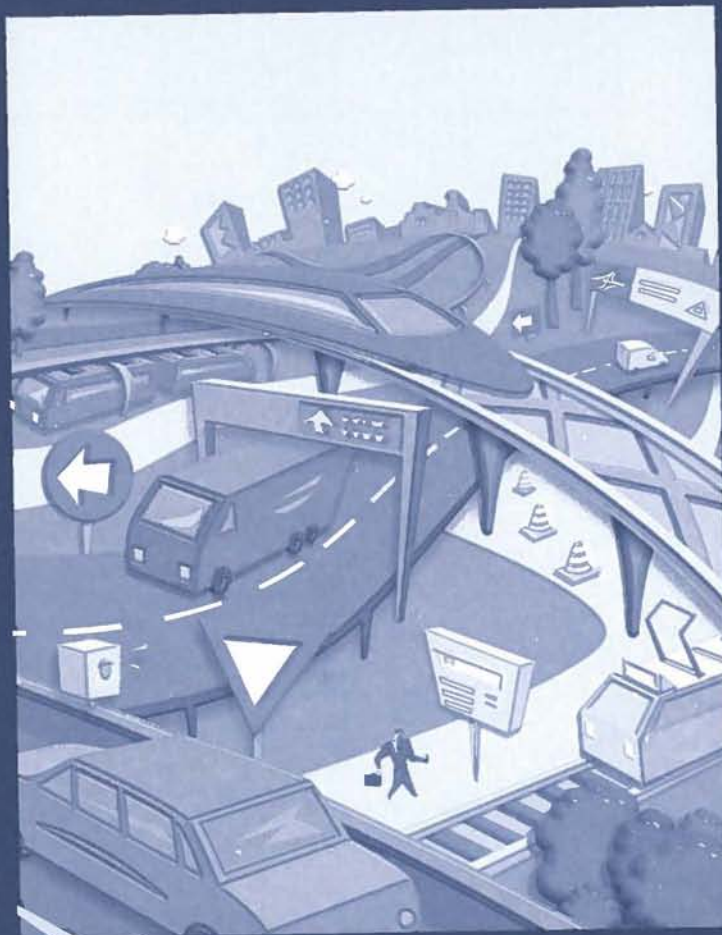
When these points, which experiences in the Netherlands have shown to be important, are met, large scale traffic improvement schemes can be realised successfully. ◀ ▶

The full report entitled Traffic calming schemes: Opportunities and implementation strategies (R 2003-22) may be consulted and downloaded on the SWOV website www.swov.nl.

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American visitors

On October 2nd, Michael Halladay and Michael Griffith of the U.S. Federal Highway Administration (FHWA), Don McNamara of the American Association of State Highway and Transportation Officials (AASHTO), and John Almborg visited SWOV. They were part of the Traffic Safety Information Panel, a group of experts who were on an international trip visiting renowned traffic safety institutes in order to gather ideas and information about designing and developing traffic safety information systems. ◀▶



Variety in crossing facilities leads to confusion

Crossing facilities must be safe and understandable for everybody. However, the large variety in types of crossing is responsible for confusion.

Sustainably Safe makes high demands on the safety of the traffic engineering design. However, there are considerable gaps in the knowledge of urban road safety aspects. This also applies to crossing facilities.

An accident analysis (of registered crashes) has shown that a considerable number of crashes involving mopeds, bicycles, and pedestrians occur on urban crossing facilities. That is why SWOV has studied the various types of crossing facilities on urban road segments. The focus in this study was on how the right-of-way on different types of crossing facilities was handled by road users.

Variety

In a detailed study of the safety effects of various types of crossing facilities, data was gathered of 121 crossings that were meant only for cyclists, only for pedestrians, or for both. The selected

crossing facilities appear to show a wide variety in use, layout, boarding, and marking.

On crossing facilities for both cyclists and pedestrians, the right-of-way regulation is sometimes different: e.g. pedestrians have right-of-way and cyclists do not, or pedestrians have a regulation with traffic lights and cyclists do not. This is very confusing for both those crossing over as well as for motor vehicle drivers approaching the crossing.

The right-of-way behaviour was then observed on a number of crossing facilities that had been made sustainably safe, the Sustainably Safe Pedestrian Zebra Crossings (SS-ZC) and a number that had been laid out differently (non SS-ZC). This showed that pedestrians at a SS-ZC have less confidence in a correct giving of the right-of-way to pedestrians than pedestrians at a non SS-ZC. This lack of confidence, however, leads to fewer potential conflict situations. No explanation can be given for this unexpected result. The approach speed at a SS-ZC also appeared to be slower than at a non SS-ZC, which leads to a safer situation. In spite of this,

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Colophon

Research Activities is a magazine on road safety research, published three times a year by the SWOV Institute for Road Safety Research in the Netherlands. Research Activities contains articles on scientific projects carried out by SWOV and by others.

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the speed at a SS-ZC is also faster than 30 km/h. This is the speed whereby the mixing of traffic types is permissible according to the SS starting points.

Recommendation

At crossing facilities for pedestrians and cyclists the road authority should choose the same right-of-way regulation for both groups: both pedestrians as well as cyclists should, or should not, have right-of-way, and for both the crossing should have traffic lights or not.

It is possible that if road surface marking which indicates one has to give right-of-way is placed just before a crossing facility, it would clarify and emphasize the right-of-way obligation for drivers.

It could also be combined with a raised surface. This raised surface should be long enough for a motor vehicle take up position just before the crossing facility. SWOV recommends introducing greater uniformity in crossing facilities and further research on how they can be made safe and clear to everybody. ◀▶

The study has been published in the report 'Veiligheid van enkele typen oversteekvoorzieningen in stedelijke gebieden, Analyse van ongevallen-gegevens en gedragswaarnemingen' (R-2003-23) which may be consulted and downloaded on the SWOV-website www.swov.nl.

Sustainably Safe Zebra Crossing

The implementation requirements that a Sustainably Safe Zebra Crossing between intersections must meet (CROW, 2000) are:

- application of speed reducing measures (i.e. with a horizontal speed inhibitor such as a narrowing, or a speed bump or raised area)
- placing the zebra crossing traffic sign before the zebra;
- placing a lit zebra crossing traffic sign above the zebra (on a gantry);
- application of good street lighting that looks different;
- application of zebra marking (the zebra stripes) parallel to the carriage way;
- application of studded paving stones (but dropped crossing if the zebra is not raised);
- continuation of the zebra marking along parallel cycle paths;
- application of rough paving stones on the route to the zebra crossing;
- maintain a minimum zebra crossing width of 4 (metres);
- placing in such a way that the crossing over distance is as short as possible (possible with refuge)

A ZC should be installed on an urban distributor with a speed limit of 50 km/h and 2x1 lanes (In Sustainably-Safe there is, in principle, no 1x2 lane road). The most characteristic requirement is the application of the speed inhibitor.

Publications

Most SWOV reports are written in Dutch but they all include an English summary. Below is a selection of reports that have recently been published by SWOV. Records of all SWOV reports that were published from 1980 onward can be found on our website (www.swov.nl). Reports that were published in or after the year 2000 can be downloaded free of charge.

Looking for causes of accidents: lessons from various safety disciplines

Inventory and evaluation of research methods aimed at human errors

R.J. Davidse. R-2003-19. 150 + 270 p. € 25,- (In Dutch)

Survey of methods and approaches that can be used to obtain a better insight into behaviour-related road accident causes. The research areas examined were industrial safety, aviation safety, shipping safety, and road safety.

Traffic calming schemes

Opportunities and implementation strategies
Ingrid van Schagen (ed.) R-2003-22. 56 + 1 pp. € 11,25 (In English)

Traffic calming refers to a combination of network planning and engineering measures to improve road safety as well as other aspects of liveability for the inhabitants. This report aims to provide a concise overview of knowledge

of and experiences with traffic calming schemes in urban areas, both on a technical level and on a policy level.

The safety of various types of urban crossing facilities

Accident analysis and behaviour observations
Ir. A.C.B. de Lagen. R-2003-23. 50 + 46 pp. € 15,- (In Dutch)

Study into the safety of different types of urban crossing facilities, taking the external factors into account. Analyses were made of registered crashes, observed behaviour, and features of the design and layout of a crossing facility on a road segment.

Advanced Cruise Control and Road Safety

A literature study
Ir. A.E. Hoetink. R-2003-24. 53 pp. € 11,25 (In Dutch)
Results from a recent study into the possible influence of ACC on traffic safety. Three safety levels at which effects of telematics could apply, were examined: functional safety, driver safety, and traffic system safety.

Opinions, preferences, and traffic behaviour of Dutch motorists

The third 'Social Attitudes to Road Traffic Risk in Europe' survey, compared with other European countries and with the 1996 results
Dr. Ch. Goldenbeld. R-2003-25. 62 + 53 pp. € 17,50 (In Dutch)

Report containing the Dutch results of the European SARTRE 3 study which was carried out in 2002 comparing them with the 1996 results. The Dutch results are compared with the average results of a group of seven comparable European countries.

Reanalysis of traffic enforcement data from Victoria

A methodological study into the evaluation of safety measures
Siem Oppe & Frits Bijleveld. D-2003-6. 28 + 21 pp. € 11,25 (In English)

There is an increased interest in the safety effects of traffic enforcement measures. In Australia, monthly data of several types of enforcement and campaigns was gathered and analysed, together with background data and safety data. In this report, the Australian data has been reanalysed, using a slightly different method than the Australian one.

The role of emotions and moods in traffic

Interim report of the first phase of a research project
Jolieke Mesken. D-2003-8. 44 pp. € 11,25 (In English)
Interim report of the results in the first year of the project 'Emotions in traffic'. The results include a theoretical background and suggestions for research, a literature review, and a theoretical study and research plan for the first study.

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