

Proposal for a point demerit system in Hungary

R-94-13
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Leidschendam, 1994
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Foreword

The Hungarian Research Institute KTI has asked the SWOV to develop a proposal for a point demerit system in Hungary. The point demerit system is intended to serve as a supplement to methods of enforcing the traffic rules. In addition to a fine or other penalty which a road user may receive for a traffic offence, points are also allocated. The decision has already been made that the road user's driving licence will be retracted for a period of time, when a maximum number of points is exceeded. The system should therefore only apply to drivers who need a licence to operate their vehicle.

Although the decision to introduce such a point demerit system has already been taken by the Hungarian Ministry of Transport, the actual definition of the system is subject to numerous alternatives.

KTI has asked SWOV to make a proposal to outline the principles of the system, in such a way that it will have the greatest possible contribution to traffic safety. The task of SWOV is to utilise the knowledge gained with point demerit systems on an international basis and to draw up a proposal in consultation with KTI that is geared to the Hungarian situation.

1. Introduction

The design of a point demerit system in Hungary as presented in this report is based on knowledge of the operation of point demerit systems in countries where they are already operational and analyses of road hazard in Hungary.

The chapter which contains the design for the Hungarian point demerit system is therefore preceded by a general chapter on point demerit systems and a chapter about the road hazard as encountered in Hungary.

In the process of drafting the design, expertise was also applied concerning the effect of road safety measures. Further conditions can be deduced from these effects, in order to maximise the effectivity of a point demerit system. It is not the intention to copy a system that is already functional in a particular country. The prime intention of a point demerit system is to prevent traffic offences. The types of offence and the underlying motives as these apply to Hungary therefore represent the point of application. With the assistance of other supporting measures, undesirable behaviour must be tackled as efficiently as possible and desirable behaviour must be encouraged. With respect to such supporting policy, recommendations are made in this proposal.

In order to draw up the design of the Hungarian point demerit system, SWOV performed significant consultation and exchange of knowledge with KTI and held a joint conference with KTI. In addition to representatives from KTI, this conference was also attended by representatives from the Ministry of Transport, the Traffic Inspectorate of this ministry and the police. Based on the Hungarian accident data and the current Hungarian legislation, SWOV presented a draft proposal at this conference, which then led to supplements and proposals for amendment. It was shown that parts of the system are still in the process of debate in Hungary. Nevertheless, it was decided that SWOV should make a complete proposal, where it will be noted which alternatives are feasible and what arguments can be put in favour or against these alternatives.

2. The influence of a point demerit system on road safety

2.1. Introduction

The traffic regulations control the way in which road users relate to each other. They organise traffic by imposing restrictions on road users with respect to their presence, speed and direction.

The traffic regulations are also designed to enable vulnerable road users to participate in traffic by protecting their safety.

In addition, traffic legislation includes rules about behaviour which is essential to personal safety (e.g. wearing a seat belt or helmet) and/or about the (lack of) safety of other road users (e.g. driving under the influence).

Many of these rules are violated on a large scale, however. Although no study has been conducted into this subject, it can be argued that there are differences between road users with respect to the frequency with which they break the traffic regulations, and it is likely that there are road users who have been repeatedly charged for a broad range of offenses. To date, previous related convictions were only considered when determining the severity of the penalty for drink-driving offences. When sentencing people charged with other traffic violations, the question of whether similar offences have been committed previously is not considered.

This note responds to the question of whether, and under which conditions, a positive effect on *road safety* can be anticipated when extra penalties are imposed on road users who have been repeatedly apprehended. Other considerations besides road safety which could support heavier penalties for repeat offenders do not fall within the scope of this note.

An essential instrument for the detection of repeat offenders is their registration by means of a central database. Various countries already apply such a system (based on point demerit registration), which is only utilised for licensed drivers (insofar known). Depending on the severity of the offence, demerit points are allocated and added to previously accrued points. When the points limit is exceeded, a 'penalty' is imposed. This penalty may be in the form of a refresher course, or an alternative punishment may be the temporary retraction of the driving licence. These applications can be regarded as 'increased penalties'.

A point demerit system is generally applied for two purposes. On the one hand, it is intended to deal with licensed drivers who represent a greater risk to themselves and others. The point demerit system is then used as a *means of selection*. The assumption is that by keeping such a system, a reliable impression is obtained of driving behaviour, while in addition point accrual has a predictive value, offering an indication of the probability that these licensed drivers will be involved in future accidents. On the other hand, the system is intended to have a *general deterrent effect*. In other words, it is assumed that all drivers, out of fear for additional punishment, will break the traffic rules less frequently and therefore behave more safely.

This note emphasises the effect of punishment on driving behaviour, because point demerit systems generally impose an additional penalty when a certain points limit has been exceeded. However, not only punishment can lead to behavioural changes. Rewards can also have such an effect. From a theoretical perspective, drivers who are not booked for traffic offences can be rewarded, which might have a positive effect on road safety under specific conditions.

It is anticipated that the effect of a point demerit system and the associated increased penalty will reduce the number of driving offences and make traffic safer. This expectation is based on the following assumptions:

1. An unequivocal relationship has been established between safety and traffic offences.
2. Traffic offences can be (permanently) reduced by imposing an extra penalty on top of already existing penalties (general deterrence) which is more effective than other - deterrent - measures.
3. The registration of booked offences offers a predictive instrument to assess a driver's potential involvement in accidents (selection effect).

2.2. Offences and road hazard

Based on empirical research, it can be concluded that there is a positive, albeit weak, relationship between offences and the occurrence of accidents. This relationship seems to be strongest for transgressions with respect to:

- driving sober,
- wearing seat belts and helmets,
- waiting at a red light,
- use of lighting in order to be seen,
- use of the road in accordance with the function of that road.

Examples of road use in conflict with the designated function include:

- presence of slow traffic on the motorway;
- unexpected movements of fast traffic on the motorway;
- speed offences by fast traffic on a road carrying slow traffic.

If the point demerit system specifically enables these rules to be more strictly adhered to by all road users, a safety effect can be anticipated.

It is questionable whether the correlation found has a causal relationship in all cases. Although research has shown that certain offences do lead to an enhanced accident probability, exposure is also considered to be an explanatory factor. Is it true that as people drive greater distances, more accidents are caused and more offences are committed?

Research has indicated that the more kilometres people cover, the more frequently they are charged with traffic offences, although proportionately, this group of drivers is not associated with greater road hazard. In fact, the more people drive, the safer they become (relative to the number of kilometres driven).

This does not apply, however, to drivers who have little experience. Study has shown that exposure has a modifying influence on the relationship between the number of demerit points and road safety. In cases of limited exposure (little experience), a positive relationship is found between acci-

dents and traffic offences, while at higher exposure levels (much experience), this relationship is not present.

Based on the existing knowledge about repeat offenders, it seems advisable to take 'special action' in such cases, since these drivers (as a group) appear to be associated with a higher accident probability.

High risk groups include:

- young (novice) drivers who have been booked *and*
- drivers who, despite driving relatively infrequently, are still caught offending relatively often.

2.3. Deterrent effect of increasing penalties

There are no indications that, if the probability of being apprehended is reasonably small and remains static, a penalty increase will have a deterrent effect. Therefore, the introduction of a point system which *only* implies a more severe penalty in cases where the driver is guilty of repeat transgressions, may also be assumed to have a limited deterrent effect.

A more severe legal penalty could have a stronger inhibitory effect if it is combined with a reasonably large subjective risk of being apprehended. This subjective probability seems to be determined to a large degree by the extent to which one is personally confronted by police controls, and even more by the degree to which friends and acquaintances are confronted by such controls: in other words, by an actual increase in the objective risk of being apprehended. Offences which are outside the driver's control, due to a lack of experience or loss of function for example, will not be reduced by more severe legal penalties.

It is anticipated that a more severe penalty associated will be less effective in reducing offences the more transgressors:

- primarily offend as a result of personal restrictions, such as lack of experience, loss of function etc.;
- have experienced they were not penalised for offending against the traffic code;
- do not adhere to personal standards which condemn offences;
- are not exposed to public standards which condemn offences.

The set-up and philosophy of a point system should agree with the 'current moral order', or mobilise powers which reinforce the moral order with respect to traffic offences. It can mean the difference between a 'hardly effective' penalty increase due to an inadequate level of police enforcement, and an 'effective' deterrent, in response to the public disapproval of traffic offences, thereby reinforcing social control.

This means that the following should be studied:

- the public acceptance of traffic offences;
- in what manner a point system should be presented to the public;
- which resistances will arise and how these can be neutralised.

An increase in punishment can also have a negative effect. This can assume various forms. Although it cannot be certain in advance which side effects will result, the following responses may be anticipated:

- A relatively heavy punishment, such as a (temporary) retraction of the

driving licence, can lose its inhibitory effect if it becomes apparent that in practice one can still drive with an invalid driving licence without fear of being apprehended.

- A penalty can also be so severe that offenders will go to extreme lengths to avoid punishment. Although no study into this phenomenon has been performed, it is likely that the following offences will increase:

- ignoring stop signals by police;
- not stopping after an accident.

2.4. Proven efficacy

How great is the deterrent effect in practice, and what is the effect on road safety? Germany, France and the United States have carried out evaluation studies. These studies demonstrate that with regard to young drivers, the introduction of a point system can realise a 10% reduction in offences, and possibly an associated accident reduction of 5%. In France, the introduction of a point demerit system for all drivers (regardless of age) has led to an accident reduction of 7 to 12%. Whether this accident reduction is in fact *attributable to* the measure has not been investigated (as yet). All the accident reductions reported occurred immediately after introduction of the measure and data about the 'risk of apprehension' are not available. The question is under which conditions this pattern can be sustained over a longer period, or whether the deterrent effect will 'wear off' over time.

The deterrent effect on offences is most marked amongst those groups of drivers (all ages) who have accumulated the highest number of penalty points and are in the danger zone. The deterrent effect seems to be virtually absent amongst the group who have accrued a small number of points. It would therefore seem advisable to consider imposing 'potential penalties', even at lower penalty point scores.

Effects of various forms of punishment

Various effects can be anticipated from the type of penalty imposed. The most expensive punishment may not be the most effective, and may have a different effect on the willingness of drivers to adhere to the rules, depending on the category of road user. A limited licence suspension appears to be an effective punishment. However, there are indications that men are less put off by the threat of being penalised than women, and only change their behaviour after they have personally experienced such a punishment.

2.5. Means of selection

By registering the frequency of offences and accidents based on the offender's name, it is possible to identify those drivers who exhibit 'problem behaviour'. This group can then be selected and subjected to a 'driver improvement' programme, which is intended to reduce the frequency of accidents and offences committed by the 'treated' persons. The question is to what degree - based on the accumulation of penalty points (resulting from offences committed and/or accidents caused) - drivers can be identified who are likely to be involved in an accident in the future. This depends on whether the accumulation of demerit points represents an expression of a 'permanent' driving style and is not a reflection of a transient

driving style. It also depends on whether the frequency of offences and/or accidents has a predictive value for potential involvement in accidents. It was concluded that the accumulation of demerit points is related to a driving style, in the sense that demerit points accumulated in the past have a predictive value for demerit points accumulated in the future. The predictive value of demerit point accumulation in the past with respect to the likelihood of becoming involved in accidents in the future is too small, however. Also for novice drivers, the predictive value is limited, although there are indications that this group should be subjected to a 'treatment' even if they have committed one or two offences.

2.6. Efficacy

Due to the limited differentiating potential, the efficacy of the system is also restricted. Only a small proportion of the total number of accidents can be prevented on the basis of a point demerit system, and only when the treatment is 100% successful, i.e. none of the drivers selected is again involved in an accident. However, the true impact of the 'treatments' is uncertain. Evaluation results relating to the efficacy of driver improvement courses indicate there are no courses which realise significant positive changes in the accident rate. Further study is required to design courses which lead to better results. Systematic evaluation studies are essential, as it has been shown that courses may even have a negative effect on road safety. Other forms of 'punishment' are (sometimes) effective. Cautionary letters and temporary withdrawal of the driving licence have been reported to have a positive effect.

In conclusion

- Only a limited number of drivers who are noted for their involvement in accidents and/or frequency of offences will be involved in another accident in the future.
- In order to 'treat and/or punish' this small group, an extremely large group of drivers will have to be subjected to the treatment.
- Novice drivers should be 'treated' even at a low transgression frequency, as well as those who do not drive often and are nevertheless guilty of a relatively large number of offences.
- If the 'driver improvement' courses are selected as a means of treating problem drivers, these courses will have to be carefully evaluated in order to assess efficacy. The negative effects which may result from such courses will have to be guarded against.

2.7. Conclusions

In view of the study results, point demerit systems are likely to have a limited, but positive effect on road safety. This is due to the low correlation between booked offences and road safety. Such correlation may be enhanced by increasing the subjective and objective risk of apprehension (general deterrent effect), where emphasis is placed on serious offences. Under these conditions, an extra effect may result from a point system, in addition to the effect resulting from the greater risk of apprehension. The magnitude of the additional effect and its lasting quality over time can not be assessed at present. An increase in punishment alone is unlikely to have a significant deterrent

effect, unless the measure has a large and genuine public base of support. In that case, social control and social rejection of offenders may have a deterrent effect.

Based on the study results, it is not anticipated that the selection and identification of problem drivers via a point demerit system will have an effect on road safety. The application of driver improvement courses as 'punishment' should be performed with caution, given the findings that courses may also have a negative effect on road safety.

3. Hungarian accident data and observed behaviour in traffic

3.1. Introduction

The question addressed in this chapter is: "What features of a point demerit system are essential in order to facilitate a decrease in accidents in Hungary?"

To answer this question an overview will be presented of the accident patterns (par. 3.3). Assuming that some of these accidents are a result of 'willfully' and knowingly violating traffic rules, violations are proposed which should lead to point accrual.

The presented analysis is based on data collected and reported by KTI and the Secretariat of the National Accident Preventive Committee.

3.2. Mobility

Surveys of traffic safety patterns indicate that accident frequency is related to the mobility patterns in a country. Within countries changes in mobility lead to changes in accident patterns. Most often, decreasing mobility leads to a corresponding decrease in accident involvement.

Therefore the following data on mobility patterns in 1991 and 1992 in Hungary are of importance.

National traffic

In the Annual Report 1992 the following data on mobility were presented:

- 50% decrease in private cars annual kilometres
- 10% decrease in passenger kilometres
- 30% decrease in goods/ton kilometres

However another source states (Hollo, personal communication) that the data on the decrease in private car mobility is a strong exaggeration. "The average daily traffic on the 30.000 km so called national road network-being managed by the Ministry of Transport, Telecommunication and Water Management - representing 70% of the country's public road traffic, developed as follows (measured data):

1990 = 100%
1991 = 95,5%
1992 = 101,3%
1993 = 97,6% "

KTI expects that the local traffic decreased to a smaller degree than that of the national traffic. In the National Traffic Safety Programme of Hungary (NTSP) it is mentioned that between 1991-1992 fuel consumption decreased with 25%.

No data are available whether or not also shifts in the modal split have resulted from the decrease in motor vehicle traffic.

International traffic entering or leaving Hungary

Decrease foreign passenger cars 10%
Increase foreign trucks 37%

(Source Annual Report 1992, p.3)

3.3. Accident patterns

3.3.1. Introduction

For the present report, annual Hungarian accident data were used as the main source. As a consequence the present analysis is strongly affected by the way the source data were gathered and analyzed and in the end were presented in several reports.

Important features of the source data are the following:

1. No correction for exposure. There is no information available on the amount of traffic participation by age group and role in traffic. As a consequence the risk of an accident per kilometre by age group and role in traffic cannot be determined, and changes in accident frequencies due to mobility shifts cannot be studied.
2. Data on the number of persons killed or injured as a result of accidents by age groups and their role in traffic are available (Annual report 1992, p.36), and therefore the injury risks of the different age groups can be determined (Annual report, p.38).
3. Often in categorizing accidents the cause of the accident is stated thereby referring to the legal rules that were violated. This leads to a high frequency of accident types that were caused by human error, and relatively few that are related to the road infrastructure, e.g. obstructed sight, unpredictable curves.
4. In the Annual report 1992 the concept of 'cause of the accident' is used. In Hungary the accident records are based on police reports. The police officer determines the cause of the accident, with the prime objective to clear the problem of responsibility. Because of the fact that the majority of the accidents are of a multi-causal nature, there is the possibility to indicate on the accident records several accident causes, differentiating primary and secondary ones. Those included in the Annual report 1992 are primary ones.
5. To overcome the inherent biases of the registration of accident causes, KTI has introduced the category 'accident type', in order to investigate in what situations accident occurred rather than who or which rule violation caused it.
6. If a person dies *within 30 days* after the accident occurrence, according to official statistics this person is considered to be fatal accident victim.
7. The expression 'driver' includes: cyclists, moped riders, motorcycle riders, automobile drivers referring to passenger car drivers and truck drivers, bus drivers and other vehicles (Annual report 1992, p.17). So all traffic participants with the exception of pedestrians.
8. The expression 'speeding' is used to describe relative speeding meaning excessively speedy progress if compared to existing circumstances, it includes 'overspeeding' meaning violating the speed limit.

3.3.2. General

The Hungarian accident data of 1992 show the following patterns (Annual report 1992):

Total number of accidents with injuries	24 623
no of persons killed or injured	34 678

According to traffic counts and fuel sales statistics mobility decreases slightly since 1990. In spite of this drop, there is no decrease in the num-

ber of accidents in which one or more persons are seriously injured or killed.

Main features of the accident data are:

- a high involvement of pedestrians in accidents (27%), mainly children and senior citizens
- a high proportion of accidents in the weekends (46%)
- a high proportion alcohol related accidents (16%)
- accidents at railway crossings, whereby the accident is most often a result of the drivers' negligence.

Accident cause in rank order of frequency:

- speeding
- rules related to change of direction proceeding and turning
- violations of priority rules
- overtaking
- pedestrians crossing the road

In the NTSP (p.10) it is stated 'The unfavourable traffic safety situation of Hungary is primarily due to the outstandingly high severity level of accidents and not to their high number in itself'.

Demographic data

A closer look at the injury/death frequency in relation to the number of inhabitants in each age group (Annual report 1992, p.38) shows that in all age groups males are more at risk than females. Both in the group males and females there is a marked increase in accident involvement from 15 years of age onward, peaking in the age bracket of 19-22, decreasing sharply until to the age bracket 31-35, and coming down to initial levels at the age of 60. It seems that the age group of 15 to 30 are especially in need of application of safety measures.

3.3.3. *Role in traffic/ Mode of transport*

PEDESTRIANS

From the total number of accidents (24 623) in 5581 accidents a pedestrian was hit. This is about 27% of all accidents.

Pedestrian accidents most often (88%) happen in built-up areas (4895). Most often pedestrians are hit in accidents which were 'caused' by drivers (2800) which is about 50% of all pedestrian accidents (5581) (Annual report 1992, p.16). Inappropriate speed (753/ 27%) and failure to yield the right of way (895/ 32%) appear to be the prime driver errors responsible for pedestrian accidents.

The other half of accidents are related to pedestrian errors of which 'careless sudden leaving of the sidewalk' is the most prominent one (43%). About 1906 of pedestrian accidents happen at marked pedestrian crossing. It is the most 'accident prone' location (34%).

10% of the injured pedestrians die (within 30 days after the accident). The most severe accidents happen in the age group over 36. In addition the data a high mortality rate of the group over 65. Of the injured pedestrians over 65, 18% dies, as a result of the high vulnerability of this age group.

In about 10,7% (n = 423) of the alcohol related accidents (3945) pedestrians were held responsible.

CAR DRIVERS

General

In 1992 drivers of passenger cars caused 61% (15 141) of all accidents (24 632) (Annual report 1992, p.19). The NTSP reports: 'The number of accidents caused by passenger car drivers, however was increasing more quickly than the passenger car population. Compared to 1986, the basis year, by the most critical year 1990 the number of passenger cars showed a 25% increase, while that of accidents caused by their drivers an approximately 80 per cent increase' (p.11).

2974 accidents (12%) have been attributed to be a result of careless and inattentive driving (Annual report 1992, p.27).

In almost 60% (n = 2305) of alcohol related accidents (n = 3945) automobile drivers were 'responsible' (Annual report 1992, p.32).

Young and novice car drivers

This analysis is based on presentation by P. Hollo at the seminar on Safety of young drivers (1- 12 October 1993 Tel-Aviv)

He has related age and experience to accident causation.

1. *Speeding*

For males, speed as a cause of accidents is a problem only marginally related to experience. Age seems to be the most important factor, the younger a driver is the higher the frequency of speed related accident involvement is. Only between 31 and 50 years of age this type of accident decreases significantly.

For females speeding seems to be related to both age and experience. However the relationship is not linear as in the younger age groups experience seems to have a positive effect (17-24 year), while in the older age groups experience seems to have a negative effect on speed related accidents.

2. *Yielding (priority rule violations)*

For males, experience has no effect on this type of accident cause. Age seems to be the prime factor. There is a steady increase with age in accident involvement of this type.

For females there is an interaction in the sense that the older a driver is and the more experienced she is, the more frequent this type of accident appears to be.

Foreign car and truck drivers

In about 7% of the total number of accidents, foreign drivers - i.e. drivers of foreign citizenship - were involved.

The relatively high proportion of fatal accidents rate may be due to an overinvolvement of heavy vehicles in accidents of foreign drivers. As it has been mentioned that there is a high incidence of international freight traffic in Hungary.

Primarily the weight of the freight vehicle is responsible for the seriousness of this type of accidents, not the actions of the drivers involved.

	Percentage accidents	Total number foreign drivers	Total number accidents
Fatal accidents	12%	216	1849
Serious injury	7%	735	9886
Injuries	6%	769	12888
Total	7%	1720	24623

Rank order of nationalities of accident causing drivers:

- Yugoslavia
- Rumania
- Germany
- Austria

In two border provinces (Szabolcs-Szatmar-Bereg) and Hajdu-Bihar about 30% of all accidents 'is caused by eastern tourist traffic' (Annual report 1992, p.5).

There is a marked increase in accidents 'caused' by foreign drivers. Fatal accidents caused by foreign drivers have doubled since 1988 as have severe injury accidents (Annual report 1992, p.42).

No data were presented on:

- the type of vehicle driven by the foreigner
- the total number of kilometres driven by this group (mobility data)

PASSENGERS

Of the total number of seriously injured or killed persons (14 095) 4000 (28%) were passengers. If also the lightly injured are included (12 035) 34% of all the casualties are passengers. This includes the following means of transport: cycles, motorbikes, busses, passenger cars etc. In road traffic about twice as many people are injured or killed as passengers than as pedestrians (Annual report 1992, p.35). The age group 15 to 22 are highly at risk. 30 % of all passenger victims are in this age group. Additional information can be found in the National Traffic Safety Programme: 'Children under 14 years of age lose their lives mainly as car passengers and not as pedestrians or cyclist, as the case used to be earlier. The proportion of children killed in passenger cars has risen from 33% to 63% in the period in question (1986-1992), as compared to the total number of casualties under 14 years. The insufficient use of the devices of passive safety has contributed to the above increase in the number of persons (both adults and children killed in passenger cars' (NTSP, p.19). If an accident happens, the most risky means of transport from a passenger's point of view are busses. In 1000 accident with busses 694 passengers get injured/killed.

CYCLISTS

The annual report contains information on the number of accidents which were caused by cyclists and not on those events where the cyclist was an innocent participant. The number of these types of accidents shows a rise of 15% (24) in *fatal* accidents since 1991, while the total number of accidents remains stable (Annual report 1992, p.20).

The age groups 'under 14' (413) and 'over 60' (596) are causing 44% of the cycle accidents .

In about 15% (543) of the alcohol related accidents (3945) cyclists were held responsible.

The proportion of cyclists among all fatalities is 14% (293 of which 291 were riders and 2 persons were passengers).

MOPED RIDERS

The Annual report 1992 contains information on the number of accidents which were caused by moped riders and not on those events where the cyclist was an innocent participant. In the period investigated (1988-1992), the number of accidents decreased by 5% and that of fatalities by 6%. 8% of all alcohol related accidents were caused by moped riders. Inappropriate speed and violation of rules of changing direction, road use and turning are the main accident causes.

MOTORCYCLISTS

Accident involvement of motorcyclists is steadily falling since 1989. Although there is a sharp decline in motorcycle ownership between 1988 and 1989 of about 60%, the increased safety cannot solely be explained by these changes, as safety is still increasing while ownership has stabilized. As mobility data of motorcycles are absent, it cannot be conclusively decided upon whether these changes reflect more safe conditions or a sharp decrease in motorcycle kilometres. Assuming that motorcycle mobility follow similar patterns as that of private cars, it is to be expected that the latter is the case.

The proportion of motorcyclists in the rate of all alcohol related accidents is 3,8%.

3.3.4. *Where and when do accidents happen?*

Most accidents (70%) happen in built-up areas (17 277). Only 30% of all accidents happen in open areas (7346) (Annual report 1992, p.18). The hours between 13 hr and 20 hr are the hours in which almost half the number of accidents happen. In the open area 2970 (40%) out of a total of 7346 and in the built-up area 8239 (48%) out of a total of 17 277 (Annual report 1992, p.18).

Marked differences in accident types are the following:

- Accidents related to reversing and capsizing are absolutely and proportionally much higher in open areas, than in built up areas. About 1/3 of all accidents in the open areas are of this type.
- In the built-up areas hitting a pedestrian is the second most frequent accident type. About 1/4 of all accidents are of this nature, while about 1/2 of all accidents involve a collision of vehicles.

Thereby the pedestrian accident is also the most serious one, more often leading to death or serious injuries than the other types of accidents (Annual report 1992, p.14). This holds true for both the built-up area and the open area. But in the open area the pedestrian accidents have even more serious consequences than in the built-up areas. So, pedestrian collisions occurring outside built-up areas as a result of high speed limits are outstandingly heavier than those taking place within built-up areas.

3.3.5. *Accidents and alcohol*

Accidents and alcohol: about 16% (n = 3950) of all accidents are alcohol related.

58% car drivers
15% cyclists
15% pedestrians
2% truck drivers
3% motor cyclists
10% moped rider

51% of the alcohol related accidents take place in the weekends (Friday, Saturday, Sunday/ 2035). In comparison to 1991, there is a decrease in alcohol related accidents of about 1,5% and a decrease of seriously injured and persons killed of 7,6%.

3.3.6. *Accidents resulting from stop signal violations*

Only 2% of all accident resulted from a stop signal violation. Within this the number accidents related to the violation of stop signals given by a policeman or traffic lights were 82%, and stop violations resulting in accidents at rail/road crossings (with lifting barrier or traffic signal) were 10%.

Although the proportion of these types of accidents are relatively low, since 1988 there is a 40% increase of this type of accident, within this there was a rise of 15% between 1991-1992.

Especially between 1991-1992 there was a significant rise in accidents related to violation of signals given by a policeman or a traffic light of 23% (78), whereas the accidents related to violations of stop signals at rail/road crossings decreased with 26% (18)

3.4. **Legislation**

Since March 1, 1993 a modified highway code is in force:

- a general speed limit in built up areas: 50 km/h
- obligatory use of daytime running lights on semi-motorways and main roads outside built-up areas
- obligatory use of safety belts outside built-up areas on the back seats of passenger cars, where available.

In addition fines were increased (3 to 5 times on average) and police enforcement intensified (NTSP, p.27).

3.5. **Traffic violations**

With respect to traffic violations a distinction should be made between the period prior to January 1993 and after January 1993, because of the new

legislation and intensified police enforcement. No information is available on the previous level and present level of police enforcement. Furthermore, a differentiation can be made between fines for more serious violations, mostly implying legal procedures, and fines which are given on site and which are usually levied for lighter violations. More serious violations are: speeding, driving without a licence, drunken driving, and driving in the dark without headlights on.

Period 1988-1992

This period is marked by a dip in total number of fines in between 1988 and 1990. The decrease amounted to about 35% for the lighter violations and 38% for the more serious violations (Annual report, p.40). In 1992 the number of fines for serious and minor violations has almost doubled in comparison to 1990.

Rank order frequency of fines for more serious violations:

- 17% of all fines for more serious violations (175.229) are related to speeding: frequency of fines decreased by about 30% in 1990. Fine frequency rose and reached initial levels in 1992.
- About 1/10 of all fines are related to driving without a licence. There is a rising tendency. Since 1988 this number of fines has doubled.
- About 6,5% (11.402) of all fines (175.229) are related to drunken driving. There is an increase since 1988 of 44% .
- In less than 1% a pedestrian is fined, and this frequency is falling steadily (with about 3/4).
- In 1992 there is general increase of about 5% in comparison to 1991 in the number of hit and run accidents (omission of helping)

Over the period of 1988-1992 we can only rely on data on fine frequency with respect to driver behaviour. These data however are confounded with a second variable and that is police enforcement. The number of fines can thereby not be taken as a measure of actual driver behaviour.

Period from January 1993 onward

Over this period empirical data on driver behaviour are available. The following behaviours have been observed: speed, belt usage and the use of daytime running lights (memorandum Holo and Ecsedy).

1. A reduction in *average speed* (March-April 1993) by approximately 10% inside the built-up areas and the speed dispersion became more homogeneous.

2. Overall, a doubling of *belt usage* on the front seats of passenger cars (rose from 34% to 75%).

Belt usage in relation to the degree of inhabitation of the area:

- in inhabited area a rise in usage: from 30% to 67%
- in uninhabited area a rise in usage: from 42% to 77%.

3. An increase in *daytime running lights* (42% to 90%) outside built up areas on semi-motorways and main roads outside built-up areas.

Effects of new legislation, fine rise and intensified police control on accidents

There is a 40% reduction in the number of all persons killed in accidents (100% = total fatalities) which is primarily due to the fact that in built-up areas the number of fatal accidents decreased by 33,4% (100% = number of fatal accidents in built-up areas.).

However:

- the effect on accidents in May and June lessened
- road/train level crossing accidents doubled
- young driver accidents at places of amusement are still numerous and serious.

It is unlikely that the accident reductions are primarily caused by reductions in mobility, as a comparison between 1991 and 1992 has already shown that the mobility reduction of passenger cars of 50% has not led to any accident reduction.

3.6. Repeat offenders

Driver improvement courses were introduced in 1 January 1992. Their objective is 'to reveal the real problem of an individual, while the programme renders the guidance to a safe traffic participation possible'. Up to now (between January 1992 and March 1993) 15.000 have taken part in the driver improvement courses (2/3 due to drunken driving).

3.7. A point demerit system

Especially unprotected road users (cyclists and pedestrians) are at risk in Hungary (42% of all persons killed in traffic accidents). 61% of all accidents are caused by passenger cars. As unprotected road users are most vulnerable in accidents with fast moving, high mass vehicles it is to be expected that the high number of fatalities under unprotected road users is caused by accidents with motorized vehicles especially passenger cars. In addition, a high percentage (23%) of the total number of fatalities are passengers. This implies that 65% of all persons killed in accidents are within a group that either by their behaviour do not endanger others (cyclist and pedestrians) or do not participate actively in traffic (passengers).

A point demerit system should therefore especially be directed at drivers of motor vehicles, aiming to discourage intentionally committed rule violations in order to protect the safety of:

- *Unprotected road users*, especially in the built-up area, with particular emphasize on the elderly and children. Marked pedestrian crossings should become more safe places.
- *Passengers*. Drivers should be held responsible for the safety of their passengers both by driving safely as well as by applying passive safety devices, especially when passengers are under 14 years of age.
- *Drivers*, especially the inexperienced young driver.

Violations related to safety

Taking the above presented accident analysis and relating the information to the general knowledge on the relationship between accidents and traffic

rule violations, the point demerit system in combination with high levels of police enforcement should:

- discourage alcohol violations;
- discourage overspeeding, especially in built-up areas;
- discourage overspeeding out-side built-up areas, especially on road stretches with mixed traffic;
- discourage red light violations (especially in built-up areas);
- encourage the usage of passive safety devices such as helmets by moped riders and motorcyclists and of safety belt use and child restraints by occupants of passenger cars, especially when passengers are under 14;
- discourage rule violations more rigorously if a driver carries passengers;
- protect all road users: discourage violations more rigorously if the driver operates a heavy vehicle (such as busses and trucks);
- discourage violations more rigorously if the driver is inexperienced (especially inexperienced drivers of passenger cars);
- encourage the use of adequate lights in darkness and poor visibility.

Violations related to the operation of the point demerit system

To operate a point demerit system, it is essential that drivers are deterred from driving unqualified (without a valid driving licence) or tamper with their papers. So one must:

- discourage unqualified and under age driving; in Hungary there seems to be a growing tendency to drive without a valid driving licence;
- facilitate identification of drivers.

Further one should take into account possible negative side effects of the introduction of a point demerit system:

- more drivers will flee from the place of the accident
- more drivers will refrain from helping the accident victims.

4. Proposal for a point demerit system in Hungary

4.1. Introduction

A decision was made in Hungary to introduce a penalty points system as an additional instrument through which to counteract traffic offences. As a consequence of this decision, penalty points will be allocated with respect to a number of offences committed when operating a vehicle requiring a driving licence; at a particular points limit, the driving licence is retracted for a certain period of time.

Retraction of the driving licence was already possible on the basis of the current legislation, but only where it concerned an extremely serious offense. The introduction of a penalty points system enables the driving licence to be retracted on the basis of a series of less serious offences. The effectiveness of the point system lies primarily in the prevention of offences. This was once again confirmed at the conference organised by KTI and SWOV about the initial draft proposal. Prevention as a primary objective also agrees with overseas experiences (see Chapter 2). The threat of losing one's driving licence must exert so much influence that fewer offences are committed. To a lesser extent, the system may have a curative function. This means that drivers who frequently offend safety rules must be detected and that they will be subjected to a treatment to change their behaviour. In Hungary the decision has been made to retract the driving license and to obligate the driver to follow a driver improvement course.

4.2. Criteria

The definition of the system for Hungary, as presented in this chapter, is performed on the basis of the following criteria:

1. The Hungarian Ministry of Transport is intent on rapid introduction. The system must therefore comply with the current legislation. It must also be as simple and unambiguous as possible, for legal reasons and with respect to the road users.
2. The system must counteract the massive number of offences, as was made clear at the conference organised by KTI and SWOV. The national road safety plan for Hungary makes the following statement: 'The lack of discipline in traffic and non-compliance with the rules have reached their worst'.
3. The system must contribute as far as possible to road safety. The risk of an offence must determine to a significant degree the number of points awarded. In order to make the system efficient in this regard, accident analyses and general knowledge from literature is used (see Chapter 2 and 3).
4. The system must be deterrent. It must communicate the message that offences are no longer tolerated. Rapid administration will make impression. In that sense, the system must in principle be rigidly adhered to. The system must be adequately implemented. The effectiveness will be greatly determined by the chance of apprehension. Measures are needed to ensure the required capacity for police participation and enforcement instruments. Furthermore measures have to be taken to prevent obstruction of the system.
5. The system should receive support from society. Penalty points should relate to behaviour with great risk. Road users should know why offences

for which they will get penalty points, increase the lack of safety with respect to themselves, their co-passengers or other road users. The road users should also understand what safe behaviour entails, related to situations and circumstances and they should know how to perform it, by means of education, training and the supply of information. Offences should be avoidable. There are traffic situations where certain offences may be provoked. For offences included in the system, no reasonable excuse should be possible. This enhances the credibility of the system.

These criteria are to a significant degree supplementary. Where they may be in conflict, an optimum solution is sought. When justifying the design of the system, these criteria will be referred to.

4.3. Definition

4.3.1. *The target group*

Driving licences

The penalty points system is aimed at all road users who are obliged to use a driving licence to operate their vehicle, as was stipulated at the conference. For the sake of completeness, it is noted here which modes of transport require a specific driving licence in Hungary:

- a cycle with auxiliary motor or moped with a capacity up to 150 ccm
- a horse and carriage
- an agricultural vehicle (with a maximum speed of 25 km/hr)
- a slow vehicle (with a maximum speed of 25 km/hr)
- an agricultural tractor (with a maximum speed of 15 km/hr)
- a motor cycle with a capacity over 150 ccm
- a motor vehicle weighing up to 3500 kg and seating maximally 9 persons
- a motor vehicle weighing up to 3500 kg and seating maximally 9 persons, with trailer
- a motor vehicle weighing over 3500 kg
- a motor vehicle weighing over 3500 kg with trailer
- a bus
- an O-bus

It should be considered from the point of view of maximal contribution to road safety to impose more points on heavy vehicles such as lorries or buses. Accidents involving a heavy vehicle tend to lead to a more severe outcome (criterion 3). For reasons of simplicity of the system (criterion 1), this element will be dropped from the proposal.

Drivers

A distinction should be made between professional drivers, novice drivers, foreign drivers, drivers who possess more than one driving licence, drivers who drive a vehicle without a licence (where a licence is in fact compulsory) and drivers who bear an increased responsibility for passengers and other drivers.

Reasons for subjecting these various categories to different criteria are given below.

Professional drivers

People who require a driving licence in the performance of their profes-

nal duties can plead that the retraction of their licence affects them more severely than others. In addition, they drive on average more kilometres than other drivers, so that the probability of committing an offence is greater. It is likely that per kilometre travelled, they are less often involved in accidents, due to their greater driving experience (criterion 3). However, a more tolerant treatment is opposed by the objective to counteract the massive number of offences (criterion 2).

In the Netherlands, for example, it is known that on average professional drivers break the speed limit more often than other drivers.

By relaxing the regulations in this case, the effect of the system could also be undermined (criterion 4). It may be argued that it is particularly the category of commercial drivers who, in view of their driving experience, should assume special responsibility to ensure they comply with the code of behaviour.

The system should, however, ensure that the likelihood of licence retraction is not determined by greater exposure only. This is unjustifiable in the eyes of professional drivers (criterion 5).

Novice drivers

Novice drivers in general are subject to an enhanced accident risk. International data have shown that a lack of experience leads to a higher accident risk, particularly when combined with a young age. A stricter approach can be considered (criterion 3). It is evident that in Hungary, novice drivers of passenger cars are also exposed to greater risk. Neither does the available data indicate whether novice Hungarian drivers commit more offences. On average, Hungarian male drivers are more often involved in speed related accidents in relation to their age, but not as much in relation to their (lack of) experience.

The National Road Safety Programme of Hungary states: 'The introduction of probational driving licences for young drivers is necessary (a condition for this is the existence of a penalty points system)'.

According to Hungarian views, for novice drivers, a lower amount maximum points should lead to the obligation to follow a driver improvement course (criterion 3). In that case, the amount of points will be reduced and the driver licence will not be retracted. That makes it possible for the driver to remain in practice.

Foreign drivers

It is proposed to also award points to drivers with a foreign driving licence. When the maximum limit is exceeded, this should lead to the withdrawal of their right to use their foreign driving licence in Hungary. The foreign goods traffic in 1992 increased by 37% with respect to 1991. In 1992 also, they were involved in 7% of accidents recorded in Hungary and in some provinces, 30% (criterion 3). It is assumed that their involvement in offences is also substantial. No exception should be made in their case, therefore (criterion 2). The points awarded only apply in Hungary and points accrued outside the country do not apply in Hungary. It is presently not possible to transfer penalty points from one country to another country and it makes no sense to wait for international harmonization (criterion 1). Still, the burden on the administration for including drivers with a foreign licence should be in balance with the gains to be expected. When these drivers do not drive very much within Hungary, the effectiveness of the point demerit system will not be great. So on one hand it is fair for the Hungarian drivers not to exclude drivers with a foreign

licence, but when this brings a lot of difficulties, exclusion of them does make sense (criterion 1).

Drivers whose licence is valid for several vehicle categories

Penalty points can be allocated when driving different vehicles. All points will be added up and apply to all vehicle categories a driver is allowed to use. When the maximum number of penalty points is exceeded, the licence is retracted and the driver is not allowed to use a vehicle for which a licence is needed (criterion 4).

It is important to prevent that one person obtains different licences for different vehicles.

Drivers who drive a vehicle without a driving licence, where possession of a driving licence is compulsory

When someone participates in traffic with a mode of transport requiring a driving licence, without possessing a valid driving licence, he is also liable to receive penalty points. It must be prevented that people escape these points by not having a valid driving licence (criterion 4). About 10% of all fines for traffic offences relate to this type of offence, and their proportion is increasing (Chapter 3). By introducing a point demerit system, this number of offences could increase further.

When a vehicle is driven for which one does not have a driving licence, the points will count with the driving licences he or she does possess. Insofar people do not have any driving licence at all, the points will start to count once they obtain their driving licence.

Drivers with a specific responsibility for passengers and other drivers

It is considered that additional points should be imposed on those people who transport passengers, because they bear a double or multiple responsibility (criterion 3). This could be done selectively, for example for offences carrying a certain points minimum. But may be this is not in line with current legislation (criterion 1).

4.3.2. Point demerit system

Accrual or deduction

The issue under discussion is whether a road user commences with a value of 0 points and accrues penalty points, or starts with a number of credit points which can then be deducted. The first system is the most commonly used in countries which apply a point demerit system. The proposal is based on this principle. A psychological argument supports the second choice. The road user can be informed that he is credited with a large amount of trust in the form of points. It must be worth not betraying this trust.

Gradual accrual

The system is mainly directed at a gradual accrual of points for offences which are sufficiently serious after accumulation to warrant retracting the driving licence, while not sufficiently serious to justify this individually. This fits into the objective to curb the large number of offences (criterion 3). But the point accrual system must not be determined to a significant degree by the level of traffic participation, rather than by the degree to which a road user is conspicuous by his rule offending behaviour (criterion 5).

In the present situation retraction of the driving licence is already possible for extremely serious offences. Introduction of the point demerit system should not lead to a less severe regime. According to Hungarian views, the Hungarian point demerit system however is not intended to retract the licence on the basis of one single offence. This means that the actual system remains and the point demerit system is an addition.

Points awarded

The number of points awarded for an offence increases in accordance with the severity of the offence (criterion 3).

This applies firstly to the degree of breaking a limit, e.g. a speed limit or the limit for drinking and driving. The greater the difference, the more severe the offence.

An issue under discussion is whether an offence with a serious outcome, should be awarded more points (criterion 5). Whether an offence leads to an accident is however partly dependent on chance. The behaviour of other road users may have contributed to the accident, so these have to be taken into account too.

In this way the directness of the system will be restricted (criterion 4). This argues in favour of not increasing the number of points on the basis of the accident severity.

Exception can be made however for a severe offence with serious consequences, subject to a judicial verdict. In this case the need is great to allocate more points. An initial means to do so is by increasing the points score with a particular value. Another way is to fix a separate number of points for the liability which can be ascribed for causing serious injury. This allocation only serves to replace the number of points incurred for the offence prior to the accident, and should in that case be higher than the number of points awarded for that offence.

Accrual

It is proposed to accrue points for a combination of offences committed at one time. The alternative is to only count the offence with the highest number of points. It is likely that a combination of offences increases the likelihood of serious consequences (criterion 3). In addition, this means the road user is not absolved for less serious offences.

Limitation

After a certain period the points will have lapsed. It is justified to not remain liable for an offence indefinitely (criterion 5), and it can even be considered an award for good behaviour when points are deducted.

Consequences of exceeding the points limit

When someone has exceeded the maximum number of points, it is not only true that all his driving licences are retracted, but he is also excluded from a practical driving course and a practical exam. This keeps the system consistent with respect to excluding traffic participation with a motorised vehicle (criterion 4).

A greater accrual beyond the maximum number of points could mean that the driving licence is retracted for a longer period. Another possibility is that the points exceeding the maximum will count for the next period, after when the driver gets his licence back. This is favoured in Hungary.

When a driver reaches the maximum for a second time, the retraction period will be extended.

Driver improvement course

By participating in a so-called driver improvement course, one is able to reduce the points total. This may serve to support the effect of prevention. According to Hungarian views, there will be two possibilities. One is to follow a course before the maximum amount of points has been reached. Only after two years beyond this time (the limitation period) is one offered another opportunity.

The second is an obligation to follow a course when the maximum has been reached. It is proposed to make a course mandatory, although evaluation studies throughout the world did not show effectiveness. A driver improvement course however seems to make a point demerit system more constructive. It will be necessary to learn a lot from the practice of other countries. Behavioural recommendations can also fulfill a curative function.

Legal procedures

The points score should only be credited after the offence has been dealt with, either by payment of a penalty by which the offenders admit to having committed the violation or because the judge has imposed a penalty. The number of points is awarded automatically. A judge can not interfere in this. Neither can he interfere in the decision to retract the driving licence, when the maximum number of points has been exceeded.

The road user can only appeal against points allocated against a possible mistake in booking an offence and against a possible error in the number of points awarded (criterion 5).

Implementation with respect to the road user

In order to ensure proper dispatch of law enforcement, a rapid communication with the offender is required. This implies for the points system that rapid information should be provided about points accrual and the new points total. When points have been accrued beyond a certain interim limit, a warning can be issued (criterion 4).

In addition, rapid information is required when points have become out of date. Lowering the points total can be presented as an award for the fact that the total number of points was not increased too far.

Retraction of the driving licence should be realised rapidly.

4.3.3. *Type of offences and points allocated*

There are two offence categories which lead to the allocation of penalty points. One category concerns offences which increase risk. The other category concerns offences which can undermine the effect of the points system.

Risk-enhancing offences

1. Driving under the influence

An offence against the legal rules is noted in 16% of all accidents (criterion 2, see Chapter 3). Driving under the influence increases the accident risk considerably. The accident probability increases more rapidly with increased alcohol consumption (criterion 3).

Points are awarded beginning with a blood alcohol content in excess of 0.3 parts per thousand, the threshold currently applicable for penalties (criterion 1). (In Hungary, any alcohol measured in the blood entails a prohibition on traffic participation).

Exceeding the b.a.c. limit at which the driving licence can currently be retracted should be treated in the same way as in the actual system without consequences in terms of point allocation. The same applies to refusing a test to measure the b.a.c.

Between a b.a.c. of 0.3 p.p.m. and this limit, categories are defined, e.g. with a range of 0.2 or 0.3 p.p.m. where an increasing number of points is awarded as the b.a.c. rises.

Driving under the influence of medication or drugs, where it is generally known that these have an excessive negative effect on driving performance, should also lead to penalty points.

2. Speeding offences

About one sixth of the traffic offences measured relate to breaking the speed limit (criterion 2). After a drop in 1990, the number of offences recorded increased again. With accidents related to drivers vs. pedestrians, excess speed was recorded in half the number of cases where the driver was legally pointed out as the guilty party (criterion 3, see Chapter 3).

The lowest number of points is awarded for a speeding offence in excess of 30%. For a lower offence, a fine can still be imposed. A lower limit than 30% excess is not recommended because smaller offences can, in a not insignificant proportion of cases, be due to situation and circumstances. It would affect the credibility of the penalty points system to award points for these types of offences (criterion 5).

It is recommended to base the rise in the number of points awarded on the percentage with which the limit is exceeded. This means that on roads inside the built up area that are subject to a lower limit, a smaller increase in the offence leads to an increase in the number of penalty points. The greater likelihood of an accident involving cyclists and pedestrians, the most vulnerable road users, justifies this approach (criterion 3).

Breaking the speed limit such that, on the basis of the current legislation, the driving licence can be retracted, should be treated in the same way as in the actual system.

Categories are established, for example with a range of 10%, at which an increasing number of points is awarded, starting with an excess of 30-40%. Associated with the risk of excess speed is the offence of tailgating. A particular number of points can be awarded for an offence where one drives in such a manner that braking is not sufficient to prevent a collision. This can also imply penalising driving too fast or at an insufficient distance, on the basis of driving conditions such as wet road surface, rain, mist and slippery roads.

3. Ignoring a red light

Ignoring a red light is almost always unexpected by other road users and therefore hazardous. A particular problem is presented by railway crossings. The consequences of an accident at a level crossing in general tend to be far more serious than other traffic offences (criterion 3). When ignoring a red light at such a crossing, the number of points can be separately indicated.

The problem at railway crossings is however partly related to ignoring the red light, since not all crossings are controlled in this way. Conditions must be created to make punishments for the behaviour at railway crossings credible.

4. Ignoring an overtaking prohibition

Overtaking bans are only imposed where traffic conditions do not allow overtaking, e.g. due to an insufficient view of oncoming traffic (criterion 3).

5. Ignoring entry prohibition

Ignoring an entry prohibition leads to unexpected situations for other road users and therefore clearly contributes to increased road hazard. The same applies to driving on a road with an unauthorised vehicle (criterion 3).

6. Failing to use lights when this is prescribed

It is clear that this relates to observation, anticipation potential and the predictability of situations (criterion 5).

7. Not wearing a seat belt or (fixed) helmet by the driver or an minor who is a passenger, when this is prescribed

These conditions do not relate to accident prevention, but to injury prevention. However, they make a demonstrable contribution to the reduction of injury (criterion 3).

The conference by KTI and SWOV also added the following subjects:

8. Not giving way

This offence tends to only be noted after an accident has already taken place.

It can, however, be important to check more systematically for this factor in certain traffic situations, and to link points to such offences. This applies in particular to crossings where pedestrians have right of way (criterion 2). A comment should be made in this regard.

Clearly deliberate intent should be demonstrated for unfair imposition of driver priority. In everyday traffic, there are various informal priority rules. It would detract from the credibility of the point demerit system if every offence against a formal priority rule issuing from the interplay of road users were to be penalised by points (criterion 5). One example is that priority is taken with respect to a road user who, although he is entitled to priority, only has to reduce his speed somewhat to allow the other party to pass, another example is when priority is taken over traffic leaving a road which clearly seems to be of a lower category. This excuse will not apply when a systematic policy is set up to oppose certain frequent priority offences, e.g. because it is not considered acceptable that pedestrians relinquish their priority rights out of fear of motorised traffic. It should be clear to all road users that the informal traffic rule can no longer be tolerated (criterion 5).

9. Driving with more passengers than permitted

10. Ignoring conditions about goods transport

11. *It was also recommended to award a points score for 'careless' driving*
In 12% of Hungarian accidents, these are noted as the cause of accidents. This is used in police records only if they don't find some other category for its indication. This may include offences that are not made willfully. Therefore it is better not to include 'careless' driving in the point demerit system.

Offences which complicate implementation

12. *Ignoring stop sign by the police*

This offence justifies the allocation of a large number of points, in order to avoid a very serious offence, such as a high blood alcohol content (criterion 4).

13. *Driving without a valid driving licence*

This offence also justifies a strong approach, because it undermines the effect of the points system. The same applies to tampering with a driving licence or a registration number (criterion 4).

14. *Failing to stop at the scene of an accident*

The introduction of a points system can lead to drivers not stopping at an accident which they have caused, in order to avoid punishment (criterion 4). This is a more serious offence because one could considerably reduce the consequence of an accident by offering first aid (criterion 3).

4.3.4. *Implementing measures*

The introduction of a points system means first of all that an administrative system should be set up which can rapidly process points awarded and rapidly inform the driver involved also.

When the offence has been definitely established, the number of points awarded is no longer negotiable. An appeal is only possible when mistakes have been made in administration (criterion 4).

The operation of the system is of course to a significant degree dependent on police enforcement. The level of control should be adequate. This can be realised in part through automatic registration instruments. Speeding and red light offences can be recorded on the basis of number plates. This increases the likelihood of detection considerably. The problem is that the owner of the vehicle will have to point out the offender, so that the true culprit may escape punishment. The consequence of this may be that minor offences that are recorded on the basis of number plates are excluded from the penalty point system, because the amount of fines can be extended without a great burden on the juridical administration. The threat expressed by enforcement can be enhanced through visible police enforcement, with information displayed along the road that controls are being carried out and through information campaigns (criterion 4). In this case the police can direct their attention more to serious offences and make the penalty point system more effective.

4.3.5. *Supporting measures*

Supporting measures are intended to enhance the preventative effect of the points system.

Firstly, the information about the introduction of the system and an explanation is required (criterion 4).

The mass media can be brought in to publicise the importance of the system. It may be anticipated that road users will be interested in a folder with more extensive information, to find out exactly how many points are awarded for various offences. The mass media can also be used to announce where the folder can be obtained. In order to enhance acceptance of the system, a clear and brief explanation for each points allocation is of importance.

The greatest resistance is expected to come from the commercial transport sector. Information meetings for employers (organisations) and for employees within companies can serve to enhance acceptance and increase the preventative effect (criterion 4).

Secondly, information should be given to road users about the effects of the points system and the associated measures. Road users are strongly led in their behaviour by the actions of others. In traffic, they only note behavioural adaptations in part, with associated attribution. People less likely to adhere to the rules tend to estimate the number of offences committed by others at a higher level than those who conform with the rules. It is therefore important to supply information about the behaviour of other road users.

Thirdly, behavioural recommendations are desirable.

Road users are only familiar with the traffic code to a certain level. In addition, the traffic rules do not always give an unequivocal answer to the question of how a traffic situation can best be solved. In particular, adaptation to circumstances (such as rain and mist) and to the behaviour of other road users leads to problems.

Behavioural recommendations respond to a need and can determine or reinforce standards (criterion 5). The policy is reinforced when, in addition to punishment to restrict undesirable behaviour, information is given on how to act correctly. This also provides an offensive against justification for offences committed (criterion 4).

Another step forward is to promote courses and training so that people who experience many problems in traffic receive information about suitable solutions.

It will be necessary to gear information and education policy to the target groups. Commercial drivers, lorry and bus drivers, motor cyclists and foreign drivers require different information and must be approached via different channels.

Organisations who can distribute information or add their own information include, for example, insurance companies, stations for vehicle inspection and transport or traffic organisations. They are indispensable for the transfer of information and reinforce the position of the government when they also supply supporting information. On the national border, information material should also be distributed. Foreigners can also be informed by tourist traffic information organisations. Special attention is required for

foreign freight transporters. In 1992, the number of foreign lorries was 27% higher than in the previous year (Chapter 3).

Those who are professionally involved in traffic education and the enforcement of the traffic code must be instructed about the points system and how they can incorporate these measures into their activities.

4.4. Evaluation

It is recommended that the system will be evaluated. Both objectives - the prevention of undesirable behaviour and the correction of undesirable behaviour - can be evaluated.

The principal indicator for the effects of a measure must be found through accident records. But the number of accidents is not only influenced by new measures. It is necessary to specify accident figures according to type and analyse to what degree the measures may have influenced various types of offences.

Linked to this, an evaluation of the number of offences according to types is desirable, through a comparison before and after introduction of the system. To this end, objective measurements are recommended, because the number of offences registered by the police is influenced by the degree and efficiency of police enforcement. It is most desirable to perform measurements into driving under the influence at certain times, such as weekend nights, and to stop and breathalyse drivers - with participation of the police - , to perform speed measurements on various types of road, to measure seat belt and helmet use (this does not require motorists to be stopped) and to measure the number of red light offences at certain locations, including level crossings.

An indication for the effect of retracting the driving licence or of offering a driver improvement course can be monitored by the degree to which repetition of offences occurs. The course can also be evaluated through a questionnaire about knowledge and insight, with a comparison between the results at the beginning and at the end of the course. The data obtained from research into the effect of the points system and driver improvement courses indicate that by far the greatest effect can be achieved through the prevention of offences (Chapter 2).

Evaluation of parallel policy can be realised by questioning road users about their understanding of the traffic code and their attitudes with respect to the traffic code, traffic offences, behaviour in traffic and the points system. An objective evaluation is not possible in this case. The greater the deterrence of the point demerit system for road users, the more they will tend to offer a socially desirable answer. It is however important to know whether attitudes change, whether road users consider there is a greater need to enforce the rules or whether they feel the behaviour in traffic is changing, and under which conditions they would (further) adapt their behaviour. Through such a questionnaire, support can be obtained for supplementary or new policy.

It is however necessary to evaluate more than one time. It is reasonable that the deterrence of a point demerit system is the greatest immediately after the introduction, because of the information about it. It is possible that behaviour and attitudes change as a consequence but only for a short time.

Literature

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Additional Memorandum

KTI asked SWOV to elaborate further the 'Proposal for a point demerit system in Hungary'. Such elaborated system can not be derived solely from the criteria we have formulated on page 22 of our Proposal. These are meant for designing the main elements of a system; further elaboration of these elements requires answers on many legal, practical and political questions which can not be derived from existing knowledge. Some additional help has been given in formulating a system by analysing the type of questions that should be answered and suggesting ways to find these answers.

To start with, we have distinguished three elements that are prerequisites when one wants to design a point system along the lines that we have proposed in our (draft) report:

1. a classification of offences according to 'seriousness' or 'importance' on (at least) an ordinal scale; (e.g. class I, II and III offences);
2. linking a number of penalty-units (that fit an ordinal scale) with each class of this scale; (e.g. a yellow card for each class I offense; a blue card for II and a red one for III, supposing that a red card is considered to be 'heavier' than a blue one and a blue 'heavier' than a yellow one);
3. choosing a maximum number of units that one is allowed to collect within a certain period;
(e.g. three yellow cards in a year, or two blue cards or one red card; or two yellow and one blue card).

The fourth important element is the type of sanction that will be imposed when one has collected the maximum number of units. In Hungary it has been decided already that this will be the retraction of the license, but it still has to be decided for what period.

Ad 1: As far as danger is used as criterion, most offences can be classified in two or three categories; a finer distinction is hardly possible, except when one compares different degrees of DWI with one other (and the same for speeding). This last offence can be classified in three categories but also in five or more, depending of the BAC (resp the speed). But if all the offences have to be put on one three point-scale, this finer distinction for DWI and speeding only doesn't make much sense. Therefore we would suggest just two or three classes. Enclosed we send a proposal for such classification. However, we can fully understand that the Hungarian government would prefer many more classes from a practical or political point of view.

It is evident that a problem rises when not only danger is used as criterium for 'seriousness' but also the obstruction of justice.

One could solve this problem by introducing the presumption that in such cases the driver is guilty of an offence of a certain danger-class. But our expertise in road safety does not provides us with arguments what class is mostly qualified for such cases. For practical reasons or to reach certain aims of criminal policy, one could argue that this should be the class of the most dangerous offences; e.g. a driver who ignores a stop signal of a police officer at a alcohol control, could be suspected of DWI with the highest BAC.

Another way to solve the problem is by constructing a different type of scale on which both types of offences can be scaled, e.g. a 'severity-scale' (as has been done in criminology). This scaling could be done by Hungarian legal experts, by politicians and/or based on survey's among the population. However, the consequence could be that the different

forms of dangerous behavior in traffic are ranked in a different way than according to the main criterium of 'danger'.

Ad 2: Given the final sanction of the retraction of the driving licence, after having collected a number of 'points', it is logical that one collects X points for a class I offence, Y points (if $Y > X$) for class II and Z (if $Z > Y$) for a class III offence. However, as I/II/III and X/Y/Z are ordinal variables it is difficult to argue how many points (which implies units on an interval or even ratio scale) should be linked with each class of offences. For example, if one chooses to distribute 14 points over these three categories of offences, this can be done in many different ways:

I -1 point; II -2 points; III -11 points;

I -1 ; II -4 ; III - 9 ;

I -1 ; II -6 ; III - 7 ;

etc etc.

Also this ranking of sanctions could be done by Hungarian legal experts, by politicians and/or based on surveys among the population.

Ad 3: In fact, two issues are at stake:

- under what conditions (how many previous offences) is it reasonable to use the final sanction (retraction of the licence for a certain period) as a deterrent for the relevant types of offences; this is a question of legitimacy;
- under what conditions is this deterrent effective; this is a question of efficacy.

To start with the last one: from existing knowledge it can be concluded that the threat of being punished with a sanction of sufficient importance (e.g. a high fine, detention for some days or weeks, retraction of licence for some months) can deter drivers from committing each of the forementioned offences, provided that a number of conditions are being met (a.o. that the probability of detection is sufficient). It is assumed that the existing sanctions in Hungary do not have enough importance for many drivers and therefore a point system will be introduced which adds the retraction of the licence to the existing sanctions.

If one would strive after maximization of the deterrent effect (without consideration of justice and other values), one should threaten all offenders (even when they commit just a class I offence) with the retraction of their licence for e.g. some months, in combination with an increase of police enforcement. However, because of reasons of legitimacy, the Hungarian government prefers a 'stepwise' or 'ladder' system of losing one's licence for such period. Experiences from other countries show that this means a loss of effectivity because the deterrent effect seems to be virtually absent amongst the group who has reached the first steps of the ladder. In order to minimize this loss of effectivity one could do two things: either reducing the number of steps in such a way that offenders reach the danger zone rather quickly, e.g. loss of license for some months after two or three offences of class I; or increasing the level of police enforcement still further, also for these minor offences.

One could also decrease the severity of the sanction (by reducing the period of retraction) so that it will become legitimate to threaten also recidivists of minor offences with it. In general this does not mean a loss of effectivity.

This brings us to the first issue of legitimacy; this equals more or less the question how many (detected) 'mistakes' per period does the government allow a driver before his/her

licence is retracted. The answer is important for the acceptance by the public and from an ethical point of view (a punishment that is too heavy in relation to the seriousness of the offence, is considered to be not legitimate). This demands a judgment by Hungarian experts, politicians and/or based on surveys among the population.

From the criterion (in par. 4.2.) that the point system should comply with the current legislation, it follows that the ultimate sanction in the system should be imposed right-a-way if someone commits an offence of a type that is being punished already at present with a retraction of the licence. Consequently, the sanctions for the other types of offences can be derived - to some extent - from this point of reference.

Appendix

Proposal for categorization of offences

Class I

Driving under the influence with a BAC of 0.3- <0.8
Driving while intoxicated due to medical or illegal drug
Speeding offences with an excess of the speed limit by 30-50%
Ignoring a red light
Ignoring an overtaking prohibition
Ignoring entry prohibition
Failing to use lights when this is prescribed
Not wearing a seat belt or (fixed) helmet by the driver or an minor who is a passenger, when this is prescribed
Not giving way
Driving with more passengers than permitted
Ignoring conditions about goods transport

Class II

Driving under the influence with a BAC of 0.8-<1.5
Speeding offence with an excess of the speed limit by 50-<80%
Driving without a valid driving license

Class III

Driving under the influence with a BAC of 1.5 or more
Refusing a breath test
Speeding offence with an excess of the speed limit by 80% or more
Ignoring a stop signal of the police
Failing to stop at the scene of an accident ('hit and run')