PRINCIPAL ACTIONS OF ECMT IN THE FIELD OF ROAD SAFETY

1994 EDITION

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FOREWORD

In celebrating its 40th anniversary in 1993 the European Conference of Ministers of Transport can look back on the past four decades as a period in which it has been continually called upon to reappraise its activities in the light of radical changes, changes that have influenced the transport sector and, more recently, have assumed very special importance with the opening of the frontiers between Eastern and Western Europe, a process that is directly reflected in the Conference's membership in that it now comprises thirty countries instead of the earlier nineteen.

From the very beginning the ECMT applied itself assiduously to the task of resolving the existing road safety problems. However, it initially experienced quite considerable difficulties since, in a Europe where individual situations differed appreciably as regards rates of car ownership, levels of economic development, traditional approaches and mental outlooks, weather conditions and a great many other factors, the various countries did not all attach the same importance to the joint measures to promote road safety. There remained moreover a great deal to be learned by all concerned.

Notwithstanding the differences in approach and methods, the process of exchanging information and experience gradually began, providing the impetus for applied research and leading step by step to the formulation of a number of specific measures that were jointly defined and progressively implemented in the various ECMT Member countries.

It should be pointed out in this respect that the Conference is not a supranational organisation and so has no decision-making machinery to ensure the immediate and direct application of the provisions adopted. When the Ministers of Transport of the Conference meet in Council and approve a draft Resolution, they enter into a political commitment to implement the proposed measures in their respective countries. Given the institutional procedures specific to each country, the path to be followed may be shorter or longer, obstacles may be encountered, or there may even be a need to use a variant of the initial proposal. Experience has clearly shown however that, as a general rule, once a Resolution is adopted in ECMT, the appropriate steps are certainly taken by the national authorities, even if delays are sometimes unavoidable. Moreover, if a country should be unable to subscribe to a joint measure at European level, it may enter a reservation on the provision in question, although this is seldom done where road safety measures are concerned. In cases where a reservation is entered on these measures, it is primarily for reasons associated with the pattern of delegated responsibilities within the particular country.

While the ECMT Resolutions on road safety were originally policy-oriented and tended to set an objective rather than lay down the corresponding means of action, they have gradually come to focus not only on specific measures but on those which have proved particularly effective in practice. A turning point in this connection occurred sometime around the winter of 1972-73 which -- perhaps by coincidence? -- was also the time of the first oil shock and, accordingly, the period in which both policymakers and the public in general became aware of all the issues associated with road traffic.

It was then that the major legislative measures were therefore first laid down with a view to reducing the number of road casualties (compulsory wearing of seat belts, the introduction of general speed limits on roads and motorways, penalties for drinking and driving). These measures made a significant contribution towards reversing the general trend in accidents and casualties and, during an initial phase, the ECMT's specialists concentrated on strengthening and refining them, focusing in particular on the more vulnerable groups of road users. However, it soon became apparent that, if the national legislative measures were to be fully effective, they would first have to do more to make the user aware of his own responsibility -- since human error has been found to be by far the main contributory factor in road accidents -- and, secondly, they had to be gradually integrated with other matters of concern in the sphere of road transport (personal mobility/traffic fluidity/environment protection). This new approach was accompanied by a process of increasing decentralisation of responsibility for the measures at every administrative level from the central to local authorities and by the mobilisation of their partners in the private sector (medical profession, enterprises, road users' associations, etc.), a pattern of collaboration that fostered the implementation of co-ordinated road safety programmes which are recognised by all.

It can therefore be seen that there has been a transition from a national and legislative policy towards a more diversified and decentralised policy which is co-ordinated among all the partners, each according to the individual matters of concern and levels of responsibility.

This new approach to road safety policies has provided the means of developing one-off types of action which, though highly localised in scope, could never have been planned or implemented at national level but which offer very significant overall advantages when carried out in many different localities. The approach has fostered the development of new ideas, since the initiatives and proposals are not channelled simply from central government level down to the local level but also from the local level up.

It would be true to say that the work carried out within ECMT on a co-operative basis at international level -- the results of which have been broadly reflected in the measures adopted in the various countries -- has been conducive to the establishment of a whole range of provisions, primarily of a regulatory nature, which can together be considered to be the sum of what the Organisation has so far achieved in the sphere of road safety.

This publication sets out precisely that part of this work which the Conference has completed over the past ten years. It serves both to mark the ECMT's "anniversary" in the sphere of road safety policymaking at continental level in Europe and as a sequel to an initial publication issued in 1986 on the occasion of the European Communities' Road Safety Year. It is hoped that it will give some idea of the road already travelled and of the scope for further investigation.

WAYS OF INFLUENCING HUMAN BEHAVIOUR WITH A VIEW TO IMPROVING ROAD SAFETY

1986

RESOLUTION No.48 ON WAYS OF INFLUENCING HUMAN BEHAVIOUR WITH A VIEW TO IMPROVING ROAD SAFETY

[CM(86)16]

The Council of Ministers of Transport, meeting in Paris on 20th and 21st November 1986:

HAVING REGARD TO the Report on Ways of Influencing Human Behaviour with a view to Improving Road Safety [document CM(86)15];

CONSIDERING that, despite the progress that has been recorded in recent years, Governments must sustain their efforts to make further progress towards improving road safety;

CONVINCED that road safety policies can not have any substantial lasting effects except as part of overall preventive strategies based on the simultaneous improvement of the behaviour of road users, the design and maintenance of vehicles and the quality of infrastructures and on the modernisation of emergency services for road casualties;

NOTING, however, that human factors are the source of the vast majority or road accidents and accordingly that particular priority in the future needs to be given to influencing the human factors causing road accidents;

INVITES MEMBER COUNTRIES:

1. To improve their systems for collecting and processing accident data, to conduct more detailed studies, surveys and research so as to have a reliable basis for assessing the extent to which human factors are involved in road accidents and, on this basis, to devise suitable preventive and dissuasive measures and penalties as means of influencing the behaviour of road users.

2. To ascertain more clearly in this way the importance of the main human causes of accidents such as excessive speed, drinking and driving, dangerous manoeuvres and non-compliance with traffic lights and road signs.

3. To implement, in their entirety, its previous Recommendations as regards speed limits, penalties for drinking and driving, the use of seat belts and the wearing of protective helmets, so as to establish a set of compulsory requirements that are clear, coherent and, if possible, harmonised at international level.

4. To maintain an adequate level of traffic supervision in order to secure proper compliance with road traffic regulations by making sure that there are always enough members of the traffic surveillance services on the roads, including during off-peak periods and on secondary roads.

5. To arrange, as far as possible, for the surveillance services to be equipped with automatic equipment for recording offences, particularly those of exceeding the speed limit or going through a red light, as well as reliable apparatus for ascertaining whether drivers have been drinking.

6. To ensure that the appropriate penalty is imposed as soon as possible once the offence has been established and that flexible procedures for penalising offenders are introduced so as to relieve the courts of the burden of having to deal with a vast number of minor offences.

7. To make wide use of the possibilities offered under national law to apply the more dissuasive types of penalty in cases directly involving the safety of others, such as the suspension or withdrawal of the driving licence, the temporary withholding of the vehicle registration document or the temporary immobilisation of the vehicle.

8. To give extensive publicity to operations designed to monitor and penalise dangerous behaviour and so serve as a deterrent.

9. To improve the systems of road safety education so as to provide ongoing road safety training from the earliest years and continuing after the driving licence is obtained.

10. To encourage meaningful instruction in schools on basic road safety rules and behaviour, including a minimum of practical training.

11. To improve the quality of instruction in driving schools and the standard of driving instructors and examiners.

12. To study the possibility of introducing graduated systems of driving instruction --particularly for progression to the more powerful types of motor-cycle -- and of making arrangements for administrative and training institute follow-up for the learner or novice driver.

13. To support schemes aimed at providing refresher courses and further training for drivers, particularly those who have been found guilty of a series of offences.

14. To mount information campaigns for road users on the major risks and main causes of accidents and promote the wide circulation of information, particularly to local authorities, road safety organisations, educational establishments, the medical profession and insurance companies; further, to take steps to ensure that the entry into force of new regulations is systematically backed up by a widespread information campaign aimed at road users.

15. To encourage contributions of all kinds from private road safety organisations so as to increase the effectiveness of the action taken by the authorities and, where appropriate, to help them increase the number of safety measures undertaken within their own sphere of competence.

INSTRUCTS the Committee of Deputies to keep track of developments in this particularly important area concerning the role of human behaviour in road accidents and to report back, in due course, in the light of the experience acquired in the various Member countries.

REPORT ON WAYS OF INFLUENCING HUMAN BEHAVIOUR WITH A VIEW TO IMPROVING ROAD SAFETY

[CM(86)15]

SUMMARIES OF CHAPTERS

Chapter I. The problem in General Terms and an Analysis of the Main Causes of Accidents

Road safety measures fall into three main categories: improving road user behaviour (by means of education, information, regulation, monitoring and supervision, and penalties), improving vehicle safety, and developing safer road infrastructures. All contribute in their own way to reducing accidents and casualties. The extent to which they do so depends on the key factors in accident causation. Chapter I gives an overview of the means available to determine the main characteristics of road accidents in each country and describes the factors to be taken into account when remedial measures are being planned.

Analysis of national accident statistics allows the main problem areas to be investigated: where and when accidents occur, whom they involve, what the circumstances are. But international comparisons are complicated by differences in the type of record, definitions of injured and killed, and in complementary date -- vehicle mileage for example. Within a given country, accident rates provide more insight than aggregate totals, particularly injury accidents per kilometre of travel or per head of the population. Time trends may also allow the effects of specific measures, such as seat-belt legislation, to be evaluated. But such data cannot at present be assembled on an exactly equivalent basis across all ECMT countries, and it is necessary to construct an outline picture from what is available for individual countries. A common feature that persistently emerges is the problem of vulnerable road users -- pedestrians and cyclists.

A United Kingdom study in the 1970's and early 80s provided useful insight into the **main factors contributing to accidents.** The results showed human factors contributed to about 95 per cent of accidents, road factors to about 20-30 per cent, and vehicle factors to 5-10 per cent. Results for France, Germany and Switzerland have a number of common characteristics in this respect. Contributory factors such as these should be interpreted with caution however. There are many interactions: for example, human behaviour is itself much influenced by the road layout and environment.

Moreover, measures aimed at improvement **must take account of how susceptible a particular factor may be to influence** and change. In general, changes in road layout -- "safety engineering" -- have a more immediate and quantifiable effect on accidents than attempts to change behaviour by publicity. Similarly, training can never equip a driver for every circumstance he may encounter, nor provide him with the skill to escape a difficult situation; it may be easier to engineer the road so that the situation cannot occur. Equally, past achievements in national terms limit future gains: if seat-belt wearing rates are already high in a country, further measures will provide diminishing returns. The potential long-term gains from changes in behaviour may be considerable, however.

One of the main problems ascertained from the statistics of most countries is **driving under the influence of alcohol**. Alcohol is closely bound up with consumer habits in almost every society, and the

extent to which measures aimed at reducing drink-related accidents are likely to be successful will depend on how effectively they take account of that. Enforcement of the law in practice can reinforce acceptable patterns of behaviour but is unlikely to be sufficient in itself to create such patterns. Two approaches may be adopted: to discourage from driving any person under the influence of alcohol, and to prevent or discourage drivers from drinking beforehand. The efficiency of the enforcement policies can also be enhanced by increasing the perceived risk of being caught by means of publicity campaigns, by changing the type of monitoring and by modernising the policing and judicial systems by administrative means and by the use of technology: breath analysis with reliable electronic devices instead of blood tests, for example.

Chapter II. Traffic Safety Education

The greatest road safety problems in Europe are to be found amongst children, young people and young car-drivers. Traffic safety education is one of many steps that must be taken to improve road safety amongst these groups.

Chapter II. demonstrates the need for measures to deal with the road safety problems faced by young people. Experience gathered from many countries shows that traffic safety education can be an effective approach. Such measures, however, can only be effective if they are focused on the most important problems in road safety.

An ambitious education programme should be developed at central or local level for the purpose of motivating parents, pre-school staff and schoolteachers to do road safety work with children and young people.

Driver training must be reformed to improve the attitude and behaviour of young motorcyclists and car drivers with regard to important road safety questions.

A certain amount of traffic safety education is provided today both in the home and the school. Educational materials with programme proposals are already available. The area most in need of improvement is the information and education provided to parents and teachers by the various authorities and organisations. Such measures must to a much greater extent be directed towards **motivating those who are responsible for educating** children and young people.

Chapter II details **two models for the education** of children and young people in road safety matters.

The first model, previously presented at the conference organised jointly by the ECMT and the Council of Europe on road safety education for children and teenagers, is concerned with improving child behaviour in traffic through training.

The second model shows how an integrated traffic safety education programme can affect the design of the traffic environment, the regulation of traffic and children's field of movement as well as improving their behaviour and their use of protective gear.

There is a need for improved **driver training** both as regards influencing attitudes and influencing driver behaviour.

The attitudes of prospective motorcyclists and car drivers can be changed to the better if all of them are required to undergo training in order to get a licence. Required goals for training programmes are an improved attitude towards drinking and driving, observing speed limits and respecting unprotected road-users.

The behaviour of new drivers in traffic must be improved. Training must be **more safety-orientated**, which for many countries means some practice in driving at night and on icy surfaces.

One measure that may improve road safety amongst new drivers is to impose certain restrictions on them for a limited period. This is being tested in many countries.

There is a strong case for **informing drivers** who have newly acquired their licences **about vital road safety matters**. They should be kept informed continuously between the ages of 18 and 24 by the authorities and organisations concerned.

Several countries have some form of **additional** voluntary or even regulated **training** for new drivers, which can be a way of improving road safety still further for this age group.

Chapter III. Informing the Public

Increasing public awareness by means of information campaigns is an essential aspect of road safety policy in all countries. **The forms of organisation** and methods of implementing these campaigns are, however, adapted to the specific needs of each country. It would seem to be recognised everywhere that it is necessary to have a central organisation with country-wide responsibility for the long-term strategies for increasing public awareness, whereas the actual information activities tend to be decentralised. Responsibility must also be assumed for financing these activities and, in this connection, it is important to ensure that steps are taken to integrate private and commercial interests.

Public information in connection with road safety is in most cases addressed to users of means of transport. Brochures and posters addressed to specific target groups are the main media used. It would seem necessary to improve the overall use of scientific knowledge for the purposes of public information.

The data sent in by the various countries shows a certain degree of consistency from the standpoint of the **campaign topics**: seat-belts, visibility, drinking and driving are in many countries the main points on which public information activities are focused. However, it is apparently often very difficult to assess the results of such campaigns, so it would seem highly desirable to develop international exchanges in this connection.

Chapter IV. Monitoring and Penalties

The maintenance of a reasonable level of traffic monitoring and supervision is essential to road safety.

The traffic monitoring services, aside from their law enforcement task, have a major **preventive role** to play.

The effectiveness of the monitoring services depends on **their available resources** and the way they are organised, which varies from country to country depending on its administrative structures.

Penalties (fines, imprisonment, suspension or withdrawal of the person's driving licence, etc.) are effective only if they are **imposed soon** after the actual offence. They must also be proportional to the seriousness of the offence.

Accordingly, several countries are using **new techniques** such as removing the need for less serious offences to go before the courts, creating a central computer file of offenders or introducing a points-based driving licence.

Chapter V. The Rule of Non-Government Entities

In many countries the main road safety measures too often depend on action by governments alone or, especially in countries organised on a federal basis, on action by local authorities, in other words on the public authorities in any case. It is becoming quite clear, however, that in most cases the central government has every interest in increasing the **overall efficiency** of the community's road safety measures by enlisting the help of all the private entities which **serve as relay units and provide backup** to ensure that the public is better informed in connection with road safety.

Such entities are primarily the mass media, vehicle manufacturers and importers, insurance companies, user associations, the medical profession, enterprises, and joint advisory bodies.

These entities can provide **valuable support** in improving the behaviour of road users, more particularly as regards information and publicity, safety education, the collection of data, and research.

By and large, it can be said that the part played by all these private or semi-public entities could be appreciably increased in many European countries provided that governments are prepared to help towards this end.

In a number of countries, moreover, the trend does seem to have been moving along these lines for a number of years. In any event, efforts to improve behaviour must clearly be made **as close as possible to the users themselves** and so through all of these organisations which are often both psychologically and geographically closer to the actual public.

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INTRODUCTION

From the outset, the ECMT, in its work on promoting road safety, has studied numerous aspects of road-user behaviour in all its various forms. Thus, within the framework of the Conference, the Ministers of Transport have already adopted a good number of Resolutions aimed at helping Member countries in the complex task of persuading road-users to behave more responsibly. In the course of this work, particular stress has been laid on the training of children and young people, which is considered of vital importance in this field.

An analysis of the various causes of road accidents clearly demonstrates the preponderant role played by the human factor. This aspect thus constitutes a fundamental component of danger on the roads and has become even more important in relative terms due to the significant progress achieved in recent years in the other relevant spheres of action which are -- traditionally -- the improvement of the road network (including traffic management) and of the active and passive safety of vehicles.

It is true that behaviour patterns can be influenced indirectly, as for example by physical changes to roads or their environment. However, although this approach can achieve highly favourable results, it would seem sufficient in only a very few instances. It is therefore vital to improve directly the behaviour of the road user himself, whatever measures are undertaken in other fields.

This being so, the Road Safety Committee thought it advisable to prepare a comprehensive report covering the various aspects of the human factor in road accidents. Given the importance of the topic, it wanted, in this way, to give the ECMT the opportunity of making a contribution to Road Safety Year, as 1986 was designated by the European Communities.

This report was drafted on the basis of contributions made by various delegations.

Chapter I, prepared by the United Kingdom Delegation, gives a general description of the subject before continuing with an analysis of the main causes of accidents. It also deals with the particularly worrying problem of drinking and driving, information on which was provided by the Netherlands Delegation.

Chapter II, prepared by the Swedish Delegation, covers the vast field of traffic safety education.

Chapter III, entitled "Informing the public", was drafted by the German Delegation.

Chapter IV, dealing with monitoring and penalties, is based on a contribution by the Belgian Delegation.

Lastly, Chapter V, analysing the role of non-government entities, was prepared by the French Delegation.

A small Drafting Group was given the task of coordinating and harmonising the presentation of the different contributions which were, in most cases, based on information gathered by the various member countries.

Lastly, a summary of the main conclusions from a practical standpoint is set out in the form of a draft Resolution submitted for the approval of the Council of Ministers.

Chapter I

THE PROBLEM IN GENERAL TERMS AND AN ANALYSIS OF THE MAIN CAUSES OF ACCIDENTS

1. Possible methods of improving road safety

There are many aspects to improving road safety. They fall into three main categories:

-- improving **road user** behaviour: through education, information, regulations, controls and sanctions;

-- improving **vehicle** safety: through design, maintenance and testing requirements;

-- developing safer **road infrastructures**: in particular by taking safety considerations into account when designing, modernising and maintaining road networks.

These approaches all contribute in their different ways to reducing accidents and casualties.

2. Statistical analysis of road accidents

2.1 Classification of accidents

An analysis of national statistics on road traffic accidents enables us to examine the main problems and ascertain **who** is involved (the type and age of road user), **where** (urban or rural area, road layout), **when** (day or night), under **what** circumstances. The extent to which factors involved in accidents can be identified from national statistics varies from country to country. There are differences in the accident recording systems, the definitions of "injured" and "killed", and the availability of complementary data -- vehicle mileage data for example. Detailed disaggregation is therefore not possible across all member countries taken together.

However, the general situation regarding road accidents in ECMT member countries can be summed up as follows:

-- while there are fewer accidents outside built-up areas, they are on average more dangerous than accidents that occur inside built-up areas;

-- main roads, and in particular motorways, are much safer, per kilometre travelled, than minor ones;

-- accidents occurring at night are much more serious;

-- the categories of user most at risk are essentially pedestrians, cyclists and moped and motorcycle riders;

-- young novice drivers are over-represented in road accident statistics.

Broad statistics can give only a rough guide as to the problems. The risk of accident may be quantified by relating numbers of occurrences to some indicator of exposure to risk: vehicle distance travelled, length of network, population, built-up area or not. As an example, deaths per head of population for different countries and classes of road user are given in Table 1. This table also demonstrates the extent to which vulnerable road users emerge as a problem in each national context. Table 2 gives some examples of casualties per kilometre travelled for several ECMT countries. So although the raw accident totals indicate the national scale of the problem, it is the rates which indicate the real seriousness of the situation.

2.2 Trends

Both casualty numbers and rates change with time according to the various trends in travel patterns and accident risk. The monitoring of trends can allow the effects of specific measures to be determined. For example:

-- the introduction of legislation on drinking and driving;
-- seat-belt wearing in cars;
-- crash helmet wearing for drivers of motorised two-wheelers.

Long-term trends in vehicle usage also change the pattern of accidents -- for example, the increasing popularity of cycling and motorcycling in some countries in recent years has led to increased numbers of casualties, but not rates per kilometre.

2.3 Main causes of accidents

By way of example, the relative contribution of road deficiencies, vehicle defect and human failings were estimated in a major United Kingdom study by the Transport and Road Research Laboratory in the early 1970's. The general findings are still relevant, although a more recent study in 1978-81 has indicated some differences in detail.

The main contributory factors in accidents in these studies are summarised in Table 3a. Swiss, French and German accident statistics allow factors to be separated into the same categories, and equivalent figures are shown in Tables 3a and 3b. For the United Kingdom the total human factors contributed to 84 per cent of all accidents, road factors connected with the road and its environment to 13 per cent and vehicle factors to 3 per cent. The Swiss figures show a similar pattern, with 96, 3, and 1 per cent, respectively. The individual human errors are grouped in descending order of frequency in the table. The manner of executing the driving task heads the list, the majority of the errors being deficiencies in actions and only a very small per cent of the total being ascribed to deliberate aggressiveness and irresponsible behaviour. The next most important group relates to perceptual errors, and the physical state of the driver comes third. There is far less evidence of how to deal with the first two than with the third. Moreover, it is much more difficult to influence human behaviour in general than to correct deficiencies in roads or vehicles. Furthermore, the interactions between these different factors are important. An example of such interaction is given, for the United Kingdom, in Table 4.

The human factor thus remains by far the most important element in road accidents, and more particularly:

-- speed inappropriate to traffic conditions;
-- failing to give way to other road users having priority;
-- improperly overtaking or following too close;
-- a variety of perceptual errors or misjudgment;
-- drinking and driving;
-- lack of road craft or skills.

Both road deficiencies and vehicle defects identified as contributory factors are less numerous proportionately; notably there were fewer deficiencies related to road design, or inadequate signs, lighting and markings; and fewer brake defects associated with accident occurrence.

Such analysis is not possible across all countries taken together. But it seems reasonable to suppose that there will be some features in common. Table 4b shows a similar type of analysis for accidents in France and Germany.

But without further qualification, the figures for contributory factors can mislead. It is too easy to conclude that all efforts should be applied to influencing human behaviour directly, without taking into account the detailed circumstances, the multiplicity of factors which lead to accident occurrence, and the chances of success of measures applied.

3. Difficulties relating to remedial measures

3.1 The search for ways of influencing behaviour

When considering remedial measures to reduce accidents it must be borne in mind that the most effective remedy is not necessarily related directly to the main "cause" of the accident and may even lie in different categories of road, vehicle or road user. This is particularly true of accidents in which the road user fails to correctly analyse all the factors in the road environment; in many accidents the primary cause may be said to be the driver's lack of skill or ability, but engineering remedies to improve the road or to make it safer are often cheaper, easier to effect and have a proven track record. Training the driver to the necessary degree of skill for all circumstances is extremely difficult. Further, even in circumstances in which human error or the physical state of the driver has been judged to be the sole contributor, it may be possible to influence human behaviour more readily by engineering means than by education or enforcement of legislation.

This is not to say that attempts to influence human behaviour within a given infrastructure should not be pursued. Although it is the most difficult area to effect safety measures, when achieved the result can be most dramatic. The extent to which accident statistics are susceptible to measures aimed at modifying behaviour in this way will vary according to country. If seat-belt wearing rates are low, effective measures to increase the wearing rate are likely to reduce deaths and serious injuries considerably; but if the rate is already very high, there will be little scope for further reductions in deaths and serious injuries from such measures.

The scope for reducing casualty rates thus depends to a large extent on what has already been done.

3.2 Drinking and driving: a particularly worrying problem

Drinking and driving is a particularly worrying problem in all member countries, and is thus a matter of general concern which the ECMT has already taken up on a number of occasions[1].

Driving under the influence of alcohol is closely related with social patterns of alcohol consumption.

In terms of policies, two broad approaches can be taken:

-- to discourage from driving anyone under the influence of alcohol; or
-- to prevent or discourage a driver from drinking excessively before taking the road.

Examples of the first are: to provide alternative transport -- low price public transport, or special taxi arrangements for example; and to encourage the fitting of "alcohol ignition interlock" systems. Examples of the second are: legislation controlling permissible blood alcohol levels; public information campaigns anti-drink drive instruction in education programmes in schools, colleges and driving schools; and, the encouragement of more stringent contracts for vehicle insurance.

There can be scope for improving the efficiency of implementation of existing policies. Patterns of police enforcement of existing legislation can be adjusted to increase the actual risk of being caught. The perceived risk can be further enhanced by suitable publicity in conjunction with periodic changes in enforcement patterns. It may also be possible to reduce recidivism amongst offenders by means of follow-up schemes of education and information.

Blood analysis of alcohol levels is complex, expensive, and time consuming; its replacement, as legal evidence, by breath analysis using reliable electric equipment is much quicker and may considerably improve existing enforcement. Australia, Canada, Spain, Northern Ireland, and USA have used this type of equipment for some years; in the United Kingdom legislation was introduced in 1983 and in Austria in 1986; France has had enabling legislation for some time. Legislation is planned in the Netherlands for 1987.

Information about the risk to pedestrians who have been drinking may also help reinforce general publicity of the dangers of mixing alcohol and road use.

3.3 Medicines and drugs

A further problem related in many ways to drinking and driving is that of drug taking -- for both medicines and narcotic drugs. The extent of the connection of drugs (sometimes taken in conjunction with alcohol) and road accidents is largely unknown at present, and research is needed to quantify the problem and to establish what levels of consumption and combinations of drugs significantly increase accident risk. This would provide some basis for legislative action or advice to road users.

4. Conclusions

In sum, an analysis of the various accident factors demonstrates that human factors are highly preponderant, even though a good number of accidents result from a complex of causes. However,

uniform or unilateral measures do not always lead to decisive solutions to the problems encountered. As far as possible, therefore, there is a need to:

-- define global strategies covering education, the technical improvement of the road environment, information, regulations, controls and sanctions;

-- aim the measures selected at the relevant targets, i.e. the different categories of user;

-- take better account of regional and local accident realities in order to formulate more effective prevention programmes.

Note

1. More particularly, see Resolution No.41 on drink as a factor in road accidents [CM(80)12].

Table 1. **Percentage breakdown of numbers killed by road-user category**

			Pedestrians %	On bicycles %	On mopeds %	On motorcycles %	In cars		Others[1] + Unrecorded %	Total Killed %	
							Drivers %	Passengers %			
1984	A	AUSTRIA	19.60	5.20	10.50	8.80	34.10	16.90	4.90	100	1 758
1984	B	BELGIUM	17.60	10.80	5.80	7.10	37.9031.10	16.90	4.00	100	1 893
1984	CH	SWITZERLAND	19.60	6.70	9.00	14.90	33.1032.00	15.50	3.20	100	1 097
1984	D	GERMANY	22.20	9.60	3.40	11.80	29.50	17.20	2.70	100	10 199
1984	DK	DENMARK	19.20	14.70	8.00	6.90	39.1022.20	17.60	1.50	100	665
1984	E	SPAIN	21.20	2.10	6.80	4.40	16.10	25.90	10.00	100	6 275
1984	F	FRANCE	15.30	4.00	7.50	7.10	27.80	22.60	4.40	100	12 562
1984	UK	UNITED KINGDOM	33.40	6.20	1.10	15.50	23.40	16.90	4.80	100	5 788
1984	GR	GREECE	25.20	1.60	9.90	11.50	50.00	15.80	19.90	100	1 908
1983	I	ITALY	18.10	7.50	10.70	11.40	31.00	17.30	7.40	100	8 223
1984	IRL	IRELAND	33.50	8.60		12.70	31.70	16.80	4.90	100	465
1984	L	LUXEMBOURG	18.60	4.30	1.40	5.70		20.00	0.00	100	70
1984	N	NORWAY	25.80	4.70	2.90	7.40	32.20	21.10	7.10	100	407
1984	NL	NETHERLANDS	13.10	22.30	7.90	6.00	26.10	16.20	2.70	100	1 615
1984	P	PORTUGAL					7.60				
1984	S	SWEDEN	19.00	13.90	4.00	9.40	20.10	19.20	2.40	100	801
1984	SF	FINLAND	27.40	15.90	5.20	3.50		16.80	5.20	100	541
1983	TR	TURKEY	38.10	1.80		2.50	28.10	11.90	38.10	100	7 021
1984	YU	YUGOSLAVIA	31.50	7.90	2.90	3.20		18.50	15.90	100	4 501
							34.60				
		18 ECMT countries	23.30	6.40	5.50	8.40	45.60	18.50	9.80	100	65 789[2]
							36.70				
1983	USA	UNITED STATES	16.00	1.90		9.60	36.60	17.90	20.00	100	42 500
1984	CDN	CANADA	14.40	3.00		10.20		24.30	2.50	100	4 120
1984	AUS	AUSTRALIA	19.20	3.20		13.80		26.80	0.30	100	2 822
1984	JAP	JAPAN	27.80	10.20		25.10			0.30	100	12 041
		4 Associated countries	18.40	3.70	-12.90			-51.00	14.10	100	61 483

Figures not converted to standard definition (death within 30 days).

1. Others: in commercial vehicles, buses and coaches, home riders, etc.
2. Death within 30 days.

Source: Taken from "Statistical Report on Road Accidents in 1984" ECMT.

Table 2. **Examples of casualties per 100 000 000 km travelled for several ECMT countries**

NB. Definitions of casualty differ between countries

	FEDERAL REPUBLIC OF GERMANY (1982)			
	Fatal	Serious	Slight	Total
Built up areas	4.06	73.63	210.07	287.76
Non built up areas	3.15	25.90	44.63	73.67
Bundesautobahen	0.93	6.75	19.53	27.22
	FRANCE (1984)			
	Physical accidents	Fatalities	Number	Casualties
			Seriously injured / Slightly injured	
Urban milieu				
Towns with over 5 000 inhabitants	111	3.0	27.6 / 122	149
Open country + towns with -	31	5.1	22.0 / 34	62
5 000 inhabitants	30	3.0	18.0 / 29	50
• Major roads	30	3.6	19.0 / 30	53
• Other roads				
• All roads	10	1.0	3.5 / 13	17
Motorways				
	SWEDEN (1982)			
	Fatal	Serious	Slight	Total
Built up areas	1.5	17	41	60
Non built up areas	1.5	7	12	21
	UNITED KINGDOM (1982)			
	Fatal	Serious	Slight	Total
Built up areas				
Major roads	2.5	35	136	174
Other roads (except motorways)	1.7	35	120	156
All roads (except motorways)	2.1	35	127	164
Non built up areas				
Major roads	2.5	21	46	69
Other roads (except motorways)	1.8	24	50	76
All roads (except motorways)	2.2	22	48	72
Motorways	0.70		5.5	1 723

Table 3a. **Factors contributing to accidents:**
Great Britain 1978-81 and 1970-74 studies; Switzerland 1978-81

	Great Britain		Switzerland
	1978-81	1970-74	1978-81
A. Human factors			
Manner of execution			
a) Deficiency in actions			
Too fast	16.6	9.6	16.37
Failed to look	2.1	5.4	
Wrong path or position	2.5	4.7	1.69
Improperly overtaking, following too close	5.4	4.7	10.35
aulty signalling or use of lights	1.0	2.5	4.85
ailed to give way	12.1	--	17.77
	39.8	**26.9**	**51.03**
b) Deficiency in behaviour			
Aggressive, or frustrated	0.7	2.0	
Perceptual errors			
istraction, inattention	7.7	10.9	21.07
ooked failed to see	6.4	8.3	0.18
isjudgement of speed, distance	4.0	5.2	--
iew obscured	1.5	--	--
	19.6	**24.4**	**21.25**
Physical state of driver			
Alcohol	6.8	10.0	5.83
Fatigue	2.6	1.4	0.99
Drugs	0	1.2	0.12
Illness, emotional distress	1.8	1.0	0.08
Dazzled	1.0	--	--
Glasses not worn	0.1	--	
Other			0.42
	12.2	**13.2**	**7.02**
Lack of skill			
Inexperience	2.5	4.6	2.40
Lack of road craft	5.8	3.5	--
	8.3	**9.8**	**2.40**
Other	0.9	--	10.63
Pedestrian action	2.3	--	3.09
Total human factors	**83.8**	**76.7**	**95.84**
B. Road environment factors			
Adverse road design	3.8	6.7	0.22
Unsuitable layout -- junction design, curvature			
poor visibility due to layout			

Table 3a. **Factors contributing to accidents:**
Great Britain 1978-81 and 1970-74 studies; Switzerland 1978-81

Adverse environment Slippery road Lack of maintenance Weather conditions	5.9	6.0	0.21
Inadequate furniture or markings Road signs, markings Road lighting	0.4	3.3	0.01
Obstructions Road works Parked vehicle, animal, other	3.1	2.8	0.02 2.66
Total road environment factors	**13.3**	**18.8**	**3.13**
C. Vehicle factors			
Defects Tyres Brakes Other defects due to poor maintenance Unsuitable Design Other	1.3 0.4 1.3	1.4 1.4 1.4 0.2	0.34 0.30 0.24 0.18
Total vehicle factors	**3.0**	**4.4**	**1.06**

Table 3b. **Factors contributing to accidents -- FRANCE (Réagir Survey)**

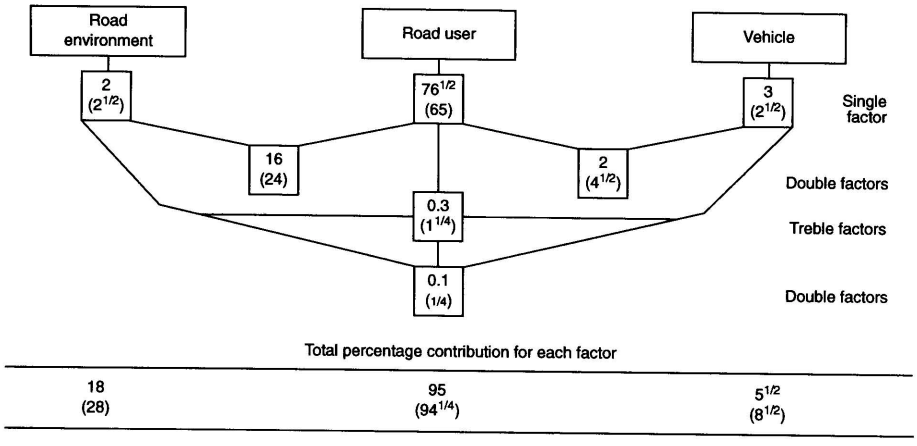
	1984	
A. Human factors		
1. Factors related to the user's condition and fitness		
Physical problems *Including :*	280	4.05
Illness	31	0.45
Effects of taking medicines	42	0.61
Faintness	120	1.74
Handicap	19	0.28
Poor eyesight	49	0.71
Fatigue	465	6.73
Alcohol	762	11.03
Fitness to drive *Including:*	398	5.76
Unfamiliar vehicle	159	2.30
Recent driving experience	175	2.53
Limited driving experience	55	0.80
2. Factors related to user behaviour		
Offences *Including:*	343	4.96
Failure to give way	85	1.23
Failure to stop at a STOP sign	40	0.58
Crossing a continuous line	30	0.43
Non-compliance with traffic signals	39	0.56
Driving the wrong way up a one-way street	9	0.13
Obstructive parking	22	0.32
Dangerous conduct *Including:*	394	5.70
Agression	10	0.14
Dangerous overtaking	94	1.36
Travelling too close to vehicle in front	32	0.46
Poor evaluation of situation	112	1.62
Inappropriate behaviour in an emergency *Including:*	336	4.86
Vehicle out of control	198	2.86
Failure to make emergency manoeuvre	76	1.10
Wrong avoiding action	65	0.94
B. Factors related to the road environment		
State of carriageway	95	1.37
Alignment design	489	7.08
Problem with vertical road signs	188	2.72
Problem with horizontal road signs	240	3.47
Problem with traffic signals	24	0.35
Problem with lighting	132	1.91
Roadworks	20	0.29
Problem related to weather conditions *Including:*	414	5.99
slipperiness of carriageway	273	3.95
Poor visibility	172	2.49
C. Vehicle-related factors		
Fault		
Tyres	247	3.57
Brakes	44	0.64
Lack of maintenance	49	0.71
Lights	83	1.20

		99.98

Table 3b. **(Contd.) Factors contributing to accidents**
FEDERAL REPUBLIC OF GERMANY

	1982	1970
Factors contributing to accidents with personal injuries		
Accident causes with respect to drivers	83.4	77.8
Under the influence of alcohol	7.5	8.6
Too fast	18.2	18.6
Following too close and sudden braking of vehicle in front	5.6	5.9
Overtaking and passing	4.3	6.6
Priority	12.4	11.4
Turning left or right, U-turn, reversing, entering the traffic stream, accelerating circulation, accélération	11.7	9.4
False behaviour with respect to pedestrians	4.3	4.4
Technical deficiencies, lack of maintenance	1.3	1.6
Accident causes with respect to pedestrians	7.5	12.2
Road conditions	6.0	6.5
Weather conditions	0.8	1.2
Obstructions and other accident causes	1.0	0.7
Accident causes total	100.0	100.0

Table 4. **Interactions between contributory factors in the United Kingdom**
Percentage contributions[1]



1. The figures without brackets refered to the study 1978/1981.
The figures within brackets to the study 1970/1974.

Chapter II

TRAFFIC SAFETY EDUCATION

1. Introduction

1.1 Definition of the term traffic safety education

Traffic safety education has always been regarded as a way of influencing the behaviour of road users. Traditional education programmes have mainly been directed at children, young people and prospective holders of driving licences.

More recently, traffic safety education has acquired a wider perspective and it is now viewed as an integrated whole.

Traffic safety education used to be limited to the training of children and young people. Nowadays it is also seen as a way of indirectly influencing traffic conditions and teaching children and young people to protect themselves, both as active road-users and as car passengers. Consequently, education programmes can have a bearing on many different road safety problems and measures affecting children, young people and new drivers.

Traffic safety education should be both theoretical and practical. Practical training is a very important form of road safety education. In its broadest sense, traffic safety education also includes information measures (dealt with in the following chapter) and further education measures (retraining and refresher courses) following basic training.

1.2 Resolutions and recommendations of the ECMT and OECD studies

The joint ECMT and Council of Europe Conference in Strasbourg, in 1980, on "Road safety for children and teenagers", adopted a number of recommendations to member countries. They concerned:

i) the general situation for children and young people;
ii) how schools can help to improve the situation;
iii) how those outside the school can help to improve the situation.

The present chapter is based on these recommendations.

In Brussels in 1978, the ECMT formulated Resolution 37 on Driver Training. The following recommendations were made concerning the training of prospective drivers:

i) that greater safety should be the primary purpose of the instruction given to learner drivers;
ii) that driver instruction be reviewed accordingly;
iii) that theoretical and practical instruction should concentrate, first, on how to avoid risks and, second, on how to overcome them if they arise;
iv) that the practical instruction given to learners ensures that they can cope with busy roads, driving at night and driving in poor visibility;

v) that the driving test be designed to cater for the above road safety considerations;
vi) that existing methods of instruction be improved as well as the driver's basic skills and ability to estimate risks;
vii) that new methods of instruction embracing modern teaching procedures and equipment be tested and developed.

Important studies on the topic dealt with in this chapter have been carried out under the OECD Road Research Programme, particularly in its 1976 and 1981 reports on driver instruction.

The section on driver training in the present report is based on these recommendations and studies and points to a number of other questions which might help in the development of training programmes.

2. Description of the problem

2.1 General

To be of any use, traffic safety education must effectively meet the particular needs of those road-users at which it is aimed. To do this, and given that young people are involved, it must take account of the dominant roles played by the various age groups in traffic and the risk factors very closely linked with these age groups.

In general, children and young people are exposed to considerable accident risks in motor traffic. The risk of being killed and injured on the roads increases continuously from a child's earliest age as a passive little road-user up until the time he or she becomes an active new driver. Specific road safety problems however, vary between the different age groups.

The age groups concerned have different and multiple roles as road users. In most cases each group has 2-3 dominant road-user roles as regards exposure to risk and accident risks.

Age Group	Dominant road-user roles					
	Pedestrian	Cyclist	Moped rider	Motor-cyclist	Car driver	Car passenger
0-4	x	-	-	-	-	x
5-9	x	x	-	-	-	x
10-14	-	x	-	-	-	x
15-17	-	-	x	X	-	x
18-20	-	-	-	X	x	x

The older children get, the more active they become as vehicle-users. The accident risk grows in pace. Children make their debut as cyclists at different ages. Young people tend to start riding mopeds and motorcycles and driving cars as soon as they are of legal age. All age groups are represented more or less equally as car passengers.

2.2 Children aged 0-14

Road safety work in many countries has focused on the safety of children. As a result of these efforts the number of road victims among children has declined continuously in many countries, especially over the past ten years despite a considerable increase in the number of cars. Over a 30-year period in Sweden, for instance, the volume of cars has increased threefold while the number of accidents involving children has been reduced threefold. That figure, however, relates only to unprotected children.

The main cause of the decline in the number of child road victims is of course the gradual improvement in the traffic environment.

The greatest safety problems for children and young people are still those that arise when they are out on the roads unprotected. The chief cause of these accidents is the mingling of children and cars in traffic. The quantity of cars and their speed are of prime importance in this connection.

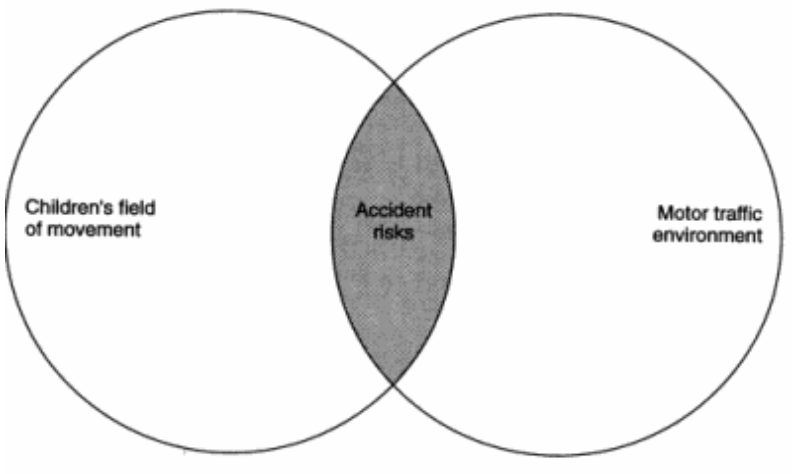
Another road safety problem is cycling accidents not involving motor traffic. In most cases they involve children falling off their bicycles and hurting their heads. Such accidents occur as early as the age of four.

So the three main problem areas for the 0-14 age group are:

i) pedestrians and child cyclists being run into by cars;
ii) children falling off bicycles when no traffic is involved and sustaining head injuries;
iii) injuries to child passengers in cars.

The following model shows the decisive safety factors for children and young people in their roles as unprotected road-users.

Traffic safety problems of unprotected children



The risk of accident arises when the children's field of movement is extended to the motor traffic environment. As children grow older their exposure to traffic intensifies and the accident risk along with it, i.e. the left-hand circle increasingly overlaps the right-hand circle.

2.3 Young people aged 15-17

Young road users in the 15-17 age group are often moped riders or motorcyclists. Unlike children they ride motor vehicles which expose them to a very high risk of accident and injury, and they constitute one of the groups of road-users at highest risk.

The basic problem for moped riders and motorcyclists is the instability of their machines. They are two-wheeled vehicles, which means problems with balance and a high degree of lateral mobility. And riders are unprotected in the event of a collision. Another problem is that such vehicles are not as easy to detect as others.

A major difference between motorcycle and moped riders is that in most countries the latter lack formal training. The two categories do however share one problem -- the risk of colliding with cars. Another problem they have in common is that they are often injured when they come off their machines. The extent of their injuries is often determined by whether they wear crash-helmets and protective clothing.

One of the best ways to solve the road safety problems of moped riders is to separate them from car traffic. Such a solution can not be applied to motorcyclists, however, which means that for the foreseeable future they will be exposed to substantially greater risks of accident than other road users.

The road safety problems for the 15-17 age group can be summarised as follows:

i) moped riders and motorcyclists are injured when they collide with cars;
ii) they are poorly protected when accidents occur.

2.4 Young motorists aged 18-24

Car drivers aged 18-19 are one large risk group in traffic in most countries. The risk of accident for this group can, in some countries, be 7-10 times as high as for older drivers. Young people aged 20-24 are also a high-risk group.

Surveys in Sweden and experience in other countries suggest that driver training of 18-19 year olds is effective in that it improves the knowledge and proficiency of new licence-holders, and also to some extent their attitudes. Their behaviour in traffic, on the other hand, can not be considered satisfactory as drivers in this group are often involved in road accidents.

Swedish studies also show that the attitudes of men aged 20-24 to questions of central importance for road safety are significantly worse than those of 18-19 year olds and older drivers. In contrast to the younger group, though, the 20-24 year olds have acquired a lot of good experience and greater skills as drivers. However, they still tend to over-estimate their driving ability.

A major problem, then, is the attitude of young drivers to important road safety issues. Drivers aged 18-24, especially men, have a worse attitude than other groups to such things as drinking and driving, speed limits, the use of seat-belts, and unprotected road users. Driver training in its present form can not easily come to grips with this problem.

The problems of the 18-24 age group can be summarised as follows:

Road safety problem	Age group	
	18-19	20-24
Accident risks	Very high	High
Attitudes	Unrealistic	Very unrealistic

3. Traffic safety education in the home, pre-school and school

3.1 Present situation in Europe

In most countries, the responsibility for ensuring that traffic safety education exists nationwide and is available at school rests with the central government. Regional and local authorities are also responsible for safety education.

In most countries, traffic safety education at school is considered compulsory. Usually it is the teachers who are responsible for it. Police often take part.

The traffic safety education given at school often consists of instruction on road signs and regulations. Traffic environment studies or analyses are few and far between, and without them, one can hardly expect children and teenagers to understand how traffic may affect them. There is seldom any traffic safety education out on the roads.

The amount of time devoted to safety education at school is difficult to estimate but is thought to be very little.

3.2 Resources

There are a large number of resources than can be utilised in the education field. The following are the main ones:

-- parents;
-- teachers;
-- friends;
-- other adults;
-- authorities;
-- voluntary organisations;
-- mass media.

Indeed, one of the main sources of education for children is their parents. They have for many years daily contact with their children. Therefore they must be able to teach the children the risks in traffic and how to cope with them. The parents can also train the children so they behave correctly in

traffic. However parental influence over the children declines as the children grow. Also other problems than traffic safety occur for instance when the children are teenagers.

Properly used, this parental resource can provide an extensive amount of traffic safety education. However, efforts must be made to make parents more interested and motivated to supply such education. Greater awareness among parents of the traffic risks involved would probably increase their motivation.

In pre-schools and schools, teachers have an important task to perform in the traffic safety field. As with the parents, it is important to interest and motivate them to work with traffic questions at school.

In many countries, children and young people are taught safety on the roads by older friends. It can be assumed that friends wield a strong influence on one another and have a powerful effect on one another's attitudes. Therefore it is important to focus on the attitudes of youth groups towards road safety matters.

Other adults can influence children and young people more directly by talking to them about their behaviour in various traffic situations. By setting a good example on the roads, adults can influence the young in a positive way.

Locally, there are many authorities able to affect the safety of children in various ways. Their participation in safety education programmes is of great value. The schools can use these authorities as a resource in their safety activities.

Many countries have voluntary organisations that play an active part in traffic safety education, at both central and local level. They can provide a valuable complement to the efforts of parents and the school. However, their contribution can only be a limited one as their activities are not usually conducted on a nationwide basis and they cannot of course reach all children and young people.

These outside parties should by all means be allowed to take part in the safety work but in that case the initiative should come from the school.

The mass media, especially TV, influence the knowledge, attitudes and behaviour of children and young people. They can have both a positive and a negative effect on road safety for the young. The media can be used too, to influence those responsible for traffic safety education, be they parents or teachers.

The advantage of information in the media is that it can reach whole target groups. However, the thing to remember about this channel of information is that the message must be simple if it is to make an impact.

3.3 Strategy

It seems clear that traffic safety education can best make an impact and thereby have a real influence on road safety by concentrating on a small number of important fields.

The basic points required for an effective traffic safety education programme can be summarised as follows:

i) start from the children's own needs and experience of their local environment;
ii) start from their dominant roles as road users;
iii) attack the most important road safety problems;
iv) use a simple and effective message;
v) motivate teachers and parents;
vi) give priority to measures affecting large target groups;
vii) concentrate and programme the introduction of measures.

The needs of children and young people for traffic safety education vary, depending partly on prevailing traffic conditions and partly on their role as road user. The need for safety education is probably greatest in the following instances:

i) when children and young people extend their field of movement;
ii) when they change from one traffic environment to another;
iii) when this environment changes character;
iv) when they take on a new road-user role;
v) when they resume an old road-user role.

Thus, whenever there is a change in the traffic environment or road-user role of children and young people, a road safety effort is warranted.

3.4 Objectives and means of achieving them

The general objective of traffic safety education is of course to reduce the number of dead and injured children and young people.

To achieve this objective, there is a need, in particular:

-- to keep children and cars apart as far as possible so as to minimise the risks associated with motor traffic;

-- to increase the use of protective gear by children and young people (equipment to restrain children in cars, use of crash helmets by users of two-wheelers).

Furthermore, children and young people must have an understanding of how traffic works if they are to be able to deal with it. The best way to achieve this is to get them to investigate their own traffic environment. Therefore, the goals of parents' and schools' safety education should be:

-- to develop children's insight into the road safety problems created by motor traffic;
-- to develop children's awareness of how their own behaviour affects their safety;
-- to develop children's willingness to take responsibility for their own safety on the roads.

3.5 Direction of traffic safety education

Traffic safety education in the home, pre-school and school can either confine itself to traditional forms or adopt the integrated view increasingly used in many countries.

More exactly, the objective of education for children and young people should be to instil lasting habits of safe behaviour. To achieve this, it should be incorporated in a coherent programme of instruction about vehicles, road environment, traffic regulations and information.

Furthermore, traffic safety education should be given continuously from tender childhood till the obtaining of a driving licence, and even beyond.

It is also important that instruction be practical quite as much as theoretical since several studies have shown that traffic safety education of a theoretical nature for children has only a limited effect on their behaviour and on road safety. What is more, care must be taken to see that theoretical instruction is based on analyses of concrete situations.

It would also seem essential to provide children with the right educational material so that they set a clearer understanding of road safety requirements.

4. Driver training and preparation for the driving test

4.1 Present situation in Europe

Young people aged 18-20 make up one of the most important target groups for road safety work in all countries. The education given is of vital importance for road safety, in both the short and long term.

An important analysis carried out by OECD Road Research indicates that driver training should in general be more safety-orientated. Training methods should be developed that improve a driver's ability to avoid risks or cope with them should they arise. This demands an analysis of "risk-evading behaviour". The study also suggests that training should be designed to strengthen the motivation to acquire a safety-first style of driving. The driver who has just passed his test must be made to realise that even if he did so with flying colours this is no guarantee of life-long safe driving.

The information gathered indicates that most countries feel that driver training should be improved with regard to drinking and driving, observing speed limits and consideration for unprotected road users.

As regards driving instruction and the granting of licences, the following points may be mentioned:

i) Nature and forms of instruction

In six out of the ten countries for which detailed information is available, learner drivers are required to attend driving school.

In three out of the ten, non-qualified people like parents are not allowed to instruct learner drivers.

In Northern Europe, it is generally considered that night driving and driving on icy surfaces should be an important part of driver training.

In the Federal Republic of Germany, learner drivers must attend courses in driving theory, follow special theoretical and practical instruction and instruction on driving at night (minimum 90 minutes), on motorways (minimum 135 minutes) and on country roads (minimum 225 minutes).

ii) Minimum age for acquiring a licence

In all ECMT member countries, the minimum age for acquiring a licence to drive cars is eighteen except in the United Kingdom and Ireland where it is seventeen.

In 1984, France introduced an experimental system of early driver training whereby sixteen year olds are allowed to drive if supervised by a qualified adult, the age for acquiring a licence remaining, however, at eighteen.

iii) Length of the practical driving test

The practical part of the driving test lasts, depending on the country, between 20 and 60 minutes.

iv) Special systems for new drivers

In 1986, the Federal Republic of Germany introduced a new system of provisional licences for newly-qualified drivers:

-- provisional driving licence (two years);
-- compulsory post-test training for holder of such licences following offences or accidents;
-- motorcyclists are not allowed, during the two years following the passing of their test, to drive machines exceeding a certain horsepower (maximum 20 kW and minimum 7 kg/kW).

Several other countries impose administrative restrictions on new drivers:

Spain

-- L-plate (one year)
-- Maximum speed 90 km/h (one year)

Finland

-- Maximum speed 80 km/h (removable plate) -- one year

France

-- 90 km/h plate

Greece

-- N-plate

Luxembourg

-- Trainee driver for two years after obtaining the licence

-- L-plate
-- Maximum speed 75 km/h (90 km/h on motorways)

Norway

-- Provisional driving licence (two years)
-- Compulsory post-test training, phase 2, within two years

Portugal

-- 90 km/h plate

Japan

-- Plate with beginner symbol
These restrictions have been introduced to increase road safety for new drivers.

v) Further training and remedial training

In nearly all countries, drivers may, if they wish, follow further training courses, often provided by driving schools or specialised bodies.

The Federal Republic of Germany and Switzerland also provide further training for people convicted of drunken driving.

4.2 Measures

In most countries, influencing attitudes and improving behaviour are a part of driver training. Their impact, however, should be greater. To this end, a more individual approach is required in driver training programmes. It is generally felt that this is best achieved by driving schools. If theoretical training were made compulsory, the large number of drivers now receiving private instruction would also be able to acquire better attitudes to important road safety questions.

The following measures are envisaged in several countries:

i) greater focus on safety in driver training;
ii) compulsory instruction in driving at night as well as on icy roads as part of training programmes;
iii) temporary restrictions on new drivers;
iv) greater influencing of attitudes in training;
v) compulsory theoretical instruction;
vi) higher standards for driving instructors;
vii) improved training for future motorcyclists;
viii) frequent supply of information to all new drivers during the first few years after they have passed the driving test in order to reinforce this group's attitudes and behaviour;
ix) promotion of various types of further training for this group.

5. Conclusions

With regard to traffic safety education, it would seem desirable:

-- to adopt a system of training starting in early childhood and continuing till some years after the driving licence has been obtained;

-- to improve the content and method of teaching road safety in schools and to develop, in this respect, the essential role played by parents and teachers;

-- to improve the instruction given in driving schools so as to promote the learning of safe behaviour patterns;

-- to introduce systems for the follow-up and further training of new drivers.

Chapter III

INFORMING THE PUBLIC

1. Organisation of public information activities

In all countries, activities aimed at increasing public awareness by means of information campaigns are an essential part of the work to promote road safety. However, the forms of organisation developed to bring the information to the public differ widely. Such differences range from the assignment of this function to the competent Ministries themselves to the establishment and financing of independent agencies. The same diversity is found in the more or less independent status of the agencies and in the funding methods, since the funds may be provided wholly by the public sector or to a considerable extent by the private sector. It seems however that in most cases the competent Ministries have a more or less direct influence on the independent agencies and their public information activities. In some countries, these activities are carried out simultaneously by a number of different agencies. Institutions under public law are working in parallel with private associations whose spheres of action overlap.

The bodies concerned with road safety information for the public in the various ECMT member countries are set out briefly in Annex.

The different organisational structures set up for the public information activities in the various countries show that there is no single optimal form since the structures in place are adapted to specific conditions in each country.

In order to ensure the required efficiency of the activities in this connection, however, the following are desirable:

a) **Action by at least one central agency** with country-wide responsibility for planning and coordinating individual activities;

b) **Close co-operation with the various competent public authorities;** Public information activities must be incorporated into the long-term objectives of traffic safety policy. In the medium-term it must be ensured that the work forms a coherent whole;

c) **Public funds** must be made available: in the medium and long-term this will ensure effective educational work;

d) **Non-governmental organisations and institutions** must be associated with public information measures as far as possible. This will enable them to co-operate on a responsible basis and participate in financing campaigns. In addition, they play an important role in stepping up the dissemination of information.

2. Strategies and methods for informing the public

The strategies, as carried out by the above-mentioned institutions, vary considerably.

Brochures and booklets are the most common medium used to communicate information. In addition, the regular dissemination of information to the press and the organisation of information campaigns form part of the standard repertoire of road safety information activities.

More complex approaches, such as coordinated and harmonized utilisation of different media by different initiators at different levels within the framework of specific programmes, tend to be an exception. The same applies to the distribution of scientific findings in the form of documentation or evaluations.

It appears that specific target groups are addressed more often than all road users in general.

Information directed exclusively towards the press forms the exception rather than the rule. With regard to co-operation with the press, two strategies are possible, namely dissemination of information to the media as a whole or to specific channels of communication.

Only Austria and the Netherlands report that they do not wish to address specific media. In contrast, the Federal Republic of Germany, Denmark, Switzerland and the United Kingdom avoid the general dissemination of information and favour the method of specifically addressing individual media. The main media target groups selected are television, radio, and daily newspapers. Magazines and consumer publications also play a certain role here.

School magazines are used only in the Federal Republic of Germany, Denmark and Spain. In the Federal Republic of Germany, company and works magazines are addressed specifically.

In addition to the method of addressing the media directly, all countries report holding seminars and symposiums.

These events are often held in collaboration with representatives of road safety organisations. A large number of events are also held in co-operation with various trades, professions and associations. Seminars and symposiums organised exclusively for the press are held in the Federal Republic of Germany, France, Spain, Sweden and the United Kingdom.

Road safety days, organised at national, regional or local level, are reported from Belgium, France, Spain and Switzerland.

If one summarises the factors collated in this section, it emerges that specific measures in the field of public information work connected with road safety are organised in all countries. There is a considerable degree of similarity in the choice of themes dealt with and methods used for getting these themes across to the public, methods which, nevertheless, take account of the features peculiar to each country. In some countries, local communities are free to choose which methods to use, with the national authorities or associations responsible for road safety playing a coordinating role only.

3. Main themes of information campaigns

Road safety in general is rarely the subject of information campaigns since, as a rule, almost all countries use specific themes for their campaigns, some of the more common ones being the wearing of seat-belts, drinking and driving, speed, children, pedestrians, drivers of two-wheeled vehicles, lighting and visibility of vehicles, etc.

A few examples of information campaigns conducted in the various Member countries in recent years and the relevant themes are:

Federal Republic of Germany:

The main themes adopted are:

-- first aid;
-- wearing of safety belts;
-- children in traffic;
-- young drivers;
-- drinking and driving.

The campaigns are not designed solely to obtain changes in behaviour but also to influence attitudes. They can be considered successful in that they have made the measures taken more readily acceptable to the public.

Austria:

-- see and be seen (1985);
-- safety of pedestrians, with particular reference to the behaviour of drivers and pedestrians where pedestrian crossings are concerned (1985);
-- "dear safety belt, dear crash helmet" operations (1986);
-- safety on the way to school (1986).

Belgium:

The main themes in recent years have been:

-- alcohol;
-- children;
-- safety belts;
-- speed;
-- two-wheelers.

The means used for the campaigns included, in particular, roadside posters, television and radio.

Denmark:

The Danish Road Traffic Council carries out two large-scale national information campaigns each year. In recent years the themes of the campaigns have been as follows:

-- single accidents;
-- tyres;
-- drinking and driving;
-- motorcycles;
-- cyclists;
-- pedestrians;

-- see and be seen;
-- child safety;
-- turning left;
-- seat-belts;
-- youth in traffic;
-- speed limits in built-up areas;
-- heavy vehicles.

All the campaigns are considered to have had a positive effect, but no thorough investigations of the results of the campaigns have been made.

Aside from these large campaigns, the Council carries out four to six minor ones each year.

Spain:

Four major campaigns are carried out each year, the main themes being the problem of drinking and driving (diminishing slightly), seat-belts, (the rate of use has risen from 50 to 80 per cent) and speed (a problem which seems to be getting worse despite the efforts made in a number of respects including monitoring).

Other themes dealt with recently include: two-wheelers, pedestrians (very successful), weekend and holiday driving, travelling through small towns, vehicle maintenance, etc.

Special mention should be made of the campaigns which are carried out every year for the particular attention of Portuguese and Moroccan workers travelling through Spain (campaigns providing information and particulars concerning rest areas and assistance, etc.).

Finland:

Among the main themes of campaigns organised in recent years have been:

-- drinking and driving;
-- see and be seen (more particularly as regards the visibility of cyclists and pedestrians).

A new approach has been to carry out regional campaigns which are organised with the support and participation of central government authorities and the national road safety organisations.

France:

Information campaigns carried out at national level in recent years covered the following themes in particular:

-- drinking and driving;
-- compliance with speed limits in towns;
-- stopping at red lights;
-- wearing of seat-belts.

It should also be noted that these campaigns are given wide publicity at local level. Local authorities, in the framework of decentralised road safety programmes (REAGIR, "*objectif moins 10%*

"), are increasingly conducting independent information campaigns geared to local accident characteristics, using regional television, local radio and regional and local newspapers.

Television is by far the main medium for large-scale information campaigns.

Luxembourg:

The main themes of information campaigns:

-- ecological driving = safe driving (1982);
-- "keep your distance!" (1983);
-- aqua-planing (1984);
-- young drivers (1985);
-- watch out for children (1986).

Also developed in 1986 were the five themes selected by the European Communities for Road Safety Year in Europe.

The Netherlands:

In Autumn 1984 a campaign was organised on the wearing of seat-belts, the aim being firstly to increase the rate of seat-belt wearing and, secondly, to ascertain the various possibilities for influencing this rate.

The campaign was organised nationally, but in one specially selected region (Friesland) it was backed up by regional radio broadcasts and newspaper articles. There were also crash demonstrations. During the campaign the police monitored the wearing of seat-belts. The effect of the campaign was assessed by counting the number of people wearing seat-belts and by questionnaires.

Nationally (excluding Friesland) the campaign resulted in an increase of 3 to 5 per cent in the number of seat-belts worn. In Friesland, the rate of increase lay between 25 and 30 per cent.

Two important conclusions can be drawn from the results:

i) regional campaigns can be more efficient than national ones since they can more easily be combined with other measures (multi-factor approach);

ii) campaigns without additional measures (i.e. single factor approach) appear to have minor effects, whereas combination with other measures (e.g. enforcement, surveillance, demonstrations, etc.) appears to be considerably more effective (integrated multi-factor approach).

By and large, four national campaigns are organised each year and the main themes dealt with are:

-- drinking and driving;
-- safety belts;
-- 30 km/h zones;
-- bicycles: visibility, lighting, side reflectors;
-- the elderly in traffic.

United Kingdom:

In 1985 the United Kingdom changed from a policy of individual campaigns aimed at, for example, the problem of drinking and driving at Christmas time, to a "rolling" programme on road safety publicity. This was based on a comprehensive statistical analysis of accidents by road user type, time of year, and vehicle manoeuvre. The programme is continuous, emphasizing themes common to many accident types, for example, "see and be seen" but with peaks in intensity of publicity aimed at particular road user groups: cyclists in summer, drinking and driving at Christmas and in late spring and summer and so on. Whilst the publicity material, posters etc., is researched on samples of the target user groups before and during use, it is difficult to establish direct links with casualty reduction, and the cumulative longer term effects that are seen as a potential advantage of the programme may not be easy to test. The programme is currently being developed in conjunction with specific efforts to increase public consciousness of road safety issues via community groups and the news media.

Sweden:

The main information activities in recent years have covered the use of child restraint systems/safety belts in the rear seats of cars and also the high accident risks for users of motorised two-wheelers and bicycles.

The campaigns have been at national, regional and local levels, often with co-operation among the public authorities, independent organisations and enterprises. All kinds of media have been used. Free driving lessons on a voluntary basis have also been organised for motorcyclists.

An assessment of the results show that, over the three-year period under consideration, the use of child restraint systems/safety belts in the rear seats increased by 20 to 40 per cent for children and 10 to 25 per cent for adults. Some 8 to 10 per cent of motorcyclists took part in the retraining courses each year.

Switzerland:

The aim of the national campaigns over the past three years has been to improve the climate in road traffic by getting all road users to consider themselves to be partners, to avoid stress and agitation and to act courteously. This safety message was essentially disseminated by means of posters, films, leaflets, slides, and so on and by the following slogans:

-- politeness = safety (1983);
-- hurry = danger (1984);
-- courteousness has priority (1985).

Considerable differences are found in the degree of effectiveness of the various information campaigns, and the desired changes in behaviour have not always been achieved. It is difficult to give precise reasons. However, such campaigns are an essential part of the road safety efforts because they are means of publicising knowledge and modifying attitudes, so they are an advantage in the long run from the standpoint of road safety. It would however be desirable to make more thorough analyses of the effectiveness of all the elements involved and the results actually achieved.

A comparative review of the themes dealt with shows that the main themes selected by the various countries are quite similar: seat-belts and crash helmets, see and be seen, speed not adjusted to

circumstances, alcohol. In view of this similarity, it is surprising that only on rare occasions are activities and aims taken up at international level. Only one positive example is to be found in this connection: the prize-winning 1971 poster by the Dutchman C. Van Rij has also been used in other ECMT countries such as Belgium, Germany, Spain and Switzerland.

In a number of countries road safety publicity is tending to be organised on a regional or even local basis, a particular example being the Netherlands where a national seat-belt campaign was backed up by intensive action in a particular region. There were tangible results which enabled the Netherlands to conclude that:

-- regional campaigns can be more effective than national ones;
-- the combination of campaigns with other measures can again considerably increase the effectiveness.

Another trend is also to be welcomed, namely the move towards a better understanding of international road safety problems where transfrontier traffic is concerned, since there is an increasing number of information campaigns on safety matters relevant to holidaymakers and travellers in transit, examples being the campaigns in Spain for the benefit of Portuguese and North African nationals, or similar activities in Germany and Austria for travellers from South-East Europe. An increasing number of countries provide information for tourists in their mother tongue by means of brochures on the rules of behaviour to ensure safety on the roads, the Scandinavian countries and the United Kingdom are well known examples.

4. Conclusions

In conclusion, increasing public awareness by means of information campaigns is an essential aspect of road safety policy in all countries. The forms of organisation and methods of implementing these campaigns are, however, adapted to the specific needs of each country. It would seem to be recognised everywhere that it is necessary to have a central organisation with country-wide responsibility for the long-term strategies for increasing public awareness, whereas the actual information activities tend to be decentralised.

The effectiveness of information campaigns can be significantly increased by using additional measures which are then planned as an integral part of a multi-factor approach (enforcement, surveillance, regional and local activities, demonstrations, etc.).

With a view to improving the activities aimed at informing the public of road safety problems, it would seem desirable:

-- to undertake international exchanges of experience on the campaigns and activities conducted, with particular reference to the media used;

-- to strengthen co-operation and the exchange of information with regard to the assessment of effectiveness;

-- to establish national objectives while also promoting regional and local variants;

-- to provide information for tourists, in their own languages, on national or regional matters of importance from the standpoint of road safety;

-- to make available adequate resources for the long-term planning of activities in connection with public information.

Chapter IV

MONITORING AND PENALTIES

1. Monitoring and supervision

In addition to the endeavours made in all countries by the public authorities and many private organisations in connection with the various ways of influencing the behaviour of road users, safety on the roads calls for a degree of traffic monitoring and supervision.

This monitoring and supervision is primarily to ensure that the regulatory measures adopted by governments are actually enforced. There is little point in drawing up new legislation if one does not have adequate means of supervising the application to ensure that it is complied with to a reasonable extent, otherwise the regulations can have only a very slight influence on road safety.

Such monitoring and supervision should also make it possible to identify drivers whose behaviour is dangerous or irresponsible and therefore liable to cause accidents.

Depending on the political and administrative structures of the various countries, the organisation of road traffic monitoring and supervision may fall to the central government, regional governments, or even the local authorities.

The effectiveness of the monitoring services largely depends on the personnel and equipment available -- especially apparatus for the automatic detection of offences -- which, in turn, largely depends on the budgetary resources that can be obtained.

As a general rule, the action of the services concerned does not solely involve enforcement and the penalisation of offences but also serves an educational or preventive purpose.

It should be pointed out that the authorities responsible for general road safety policy do not usually have direct authority over the services responsible for traffic monitoring and supervision and for the most part they have no say in the financing of these services either.

Accordingly, those responsible for road safety are usually not authorised to play a direct role in the organisation and operation of police forces. Since the latter have responsibilities in areas other than traffic in most cases, the decision as to priorities is often difficult and does not necessarily always meet the wishes of the road safety authorities.

Furthermore, owing to the financial difficulties which are largely attributable to the economic crisis, some governments have found it necessary to cut down the resources available for monitoring and supervision, in particular the number of traffic police and the technical equipment used to detect certain offences.

Notwithstanding the difficulties, the road safety authorities must do all they can to maintain the means of monitoring and supervision at an adequate and reasonable level so as to be able to make an efficient contribution towards the improvement of road safety while also making their efforts more cost

effective. In this regard, it is useful to develop qualitative and selective tests, concentrating on serious infringements (alcohol, speeding, etc.) or on certain periods (week-ends, nights, etc.).

2. Penalties

All countries penalise persons infringing road traffic rules by various means: fines, imprisonment, suspension or annulment of driving licence, immobilisation or impounding of vehicle, etc. In some countries the fines are proportional to income. Prison sentences are occasionally replaced by punishments which serve the general interest or by public works. Suspension of the driving licence is by and large considered to be the measure that has the greatest influence on drivers.

Owing to the considerable differences between the penal systems in the various countries, no valid international comparison can be made of the penalties laid down for traffic offences.

The object of penalties is to get the offender to comply with traffic regulations and, accordingly, modify his behaviour. In order to achieve this end it is necessary for the penalty to be imposed as soon as possible after the offence because if a long time elapses it is very unlikely that the penalty will still have an influence on the offender's future behaviour.

In many countries, however, it is found that the extremely large and ever-increasing volume of road traffic offences is overloading the courts, so many cases are only dealt with after a considerable delay and often cannot even be examined within the period specified by law.

Such a system is clearly inefficient and cannot reasonably be expected to prompt changes in behaviour. On the contrary, it gives virtual impunity to many road users and encourages others to pay little attention to the regulations.

This situation also often discourages the police, traffic wardens, etc. whose job it is to spot offences, so some of them may relax their efforts in the medium term.

Accordingly, the psychological effect here is doubly harmful.

Some countries are applying or examining new techniques to offset the above drawbacks, for example:

-- Removing the need for less serious offences to go before the courts, e.g., by replacing fines by administrative penalties. This method provides for penalties that are imposed quickly and are therefore more effective in terms of road safety and also relieves the courts of a large number of minor cases.

-- The same result can be achieved by providing for direct and immediate payment of fines to the authorities responsible for traffic supervision.

-- Creating a central computer file on offences so that habitual offenders can be identified and appropriate measures be taken.

-- Introducing the "points-based" driving licence whereby, for example, on the basis of a central register, the licences of drivers who commit a number of offences can be systematically suspended.

Moreover, the penalty must clearly be proportional to the seriousness of the offence and possible consequences, so a number of countries have provided for a scale of penalties for the various infringements of the highway code whereby the danger caused is the main consideration when deciding how high the penalty is to be.

In addition to the penalties, it has also been found effective to introduce re-educational measures such as the retraining of drivers who continue to commit offences, since information and discussion on the causes and consequences of incorrect behaviour often helps to reduce the rate of recidivism. In this connection, it is advisable to differentiate between drink-related driving offences and other infringements. On the basis of experience already acquired, it has been established that such re-educational measures for correcting future behaviour achieve tangible results, especially where the problem is one of drinking and driving.

Lastly, very wide publicity should be given to monitoring and law enforcement operations so as to ensure that they remain dissuasive.

3. Conclusions

The above very broad outline of monitoring and penalties in the European countries is consistent with the conclusions drawn by various international studies in this sphere. There are in fact three "golden rules" which it would seem are to be applied to all the countries under consideration:

-- the frequency of the monitoring procedures is a decisive factor in achieving a dissuasive effect;

-- the certainty that an offender will be penalised (a penalty must not be simply imposed but must also be effectively applied);

-- the swiftness with which the punishment is carried out which convinces the public that a quickly applied penalty is a vital factor in the operation of the supervisory and law enforcement machinery.

Lastly, stress should be laid on:

-- the value of re-educational measures such as the retraining of drivers who are habitual offenders, since this serves to back up the effect of the penalties and, more particularly, leads to better behaviour in the future;

-- the publicity to be given by the administrative and legal authorities to the supervisory and law enforcement operations so as to give greater effect to the dissuasiveness of monitoring and penalties.

Chapter V

THE ROLE OF NON-GOVERNMENT ENTITIES

It should be pointed out that most road safety policies pursued in the 1970s in western countries involved a great deal of action by the authorities, primarily at national or federal level. Owing to the serious situation caused by the continuous increase in the number of road accidents, government action mainly took the form of simple and consistent regulations (general speed limits, compulsory wearing of seat-belts and helmets, measures to control drunken driving, etc.) which would promptly produce clear-cut results and be backed up by more or less severe enforcement and penalty provisions.

At the same time, the educational programmes (instruction in road safety in schools, improved facilities for learning to drive and higher driving licence standards) and information programmes (public campaigns on road traffic risks and safety regulations) were intended to bring about radical changes in user behaviour in the long term, while research made it possible to identify more clearly the main causes of accidents attributable to human factors and work out action strategies for the authorities.

However, once again the capacity to take action remained generally in the hands of the central and, to a lesser extent, local government authorities, while the non-government sector acted mostly only at the behest or on behalf of the government: this applied to education, which is very largely provided or controlled by the authorities; to information, which is mainly sent out by the authorities through major radio and television campaigns; and obviously to the organisation of enforcement and penalty systems that are the prerogative of the authorities.

But from time to time it seems that the scope of the central government's responsibilities in road accident control is not sufficient to bring home the importance of road safety goals to the public. The authorities must be able to count on all the natural relay units for preventive action in order to obtain the public's full support for road safety objectives. A number of entities with back-up potential, whose ability to communicate and stimulate is important and sometimes decisive, can be used to win over public opinion and influence behaviour. Some of these entities, whose action varies in both quantitative and qualitative terms, have long existed. Others provide as many possibilities or resources that are very largely unexploited and have scarcely started to mark their concern with road safety. The following may be listed as the main entities:

-- the mass media;
-- the manufacturers;
-- insurance companies;
-- user associations;
-- the medical profession;
-- enterprises.

The question arises as to how far these efforts converge and how far these entities are capable of pooling forces in order to extend and supplement action by the authorities and, as partners of the users, express and promote concern with road safety as a social matter.

There is thus a need to examine the general role played by non-government entities in the road safety system, the contribution made by the six specific categories listed above and the experiments on

setting up mixed semi-public, semi-private bodies to work in an advisory capacity with national (or federal) road safety departments, and that in line with the following plan[1]:

1. General role of non-government entities
2. Contribution by the mass media
3. Contribution by manufacturers and importers
4. Contribution by the car insurance sector
5. Contribution by user and road safety associations
6. Contribution by the medical profession
7. Contribution by enterprises
8. Experiments with mixed advisory bodies

1. General role of non-government entities

In most countries, non-government entities have a long-standing role in the road safety system. This situation is based on historical fact, for generally speaking -- apart from some notable exceptions such as Scandinavia and the United States -- the authorities did not make their own mark on road safety management until after the Second World War and sometimes not until the 1960s. On this point it need simply be recalled that general speed limitations, compulsory wearing of seat-belts and action against drunken driving[2] are steps that were mainly taken in the 1970s. However, long before driving accidents became a real social problem, the increase in car traffic led to the creation of bodies intended to promote and facilitate the use of the car, i.e. automobile and touring clubs, and -- when traffic started causing a growing number of accidents -- private bodies such as road safety organisations. Until twenty or thirty years ago, it was therefore logical for most safety activities to be carried out by private bodies that had, sometimes since the start of the century, been involved with promoting the use of the car.

However, this assessment should be qualified depending on the types of bodies. It was easy for those traditionally in charge of protecting car drivers' interests to assume -- not without some ambiguity as we shall see subsequently -- certain responsibilities for road safety, sometimes even before the central government did so, whereas action by other bodies such as insurance firms, consumer associations or enterprises is a much more recent development. For instance, in France, a real intention to take responsibility for road safety has emerged only very recently, mainly since 1982, in some sectors of activity (insurance companies, accident victim associations, enterprises, etc.).

This mostly long-standing role played by non-government entities is considered nonetheless relatively limited on the whole in a good number of countries. It seems, however, to have a very big impact in the Federal Republic of Germany, Finland, Sweden, Switzerland and the United Kingdom, showing clear evidence of a north-south split in this domain. However, the general trend is towards its increase in most countries. It is to be noted that this role has developed greatly in France in the last three years. In any case, no country has referred to its decline.

All the countries say they welcome this role and hope it will be developed further, as if they feel that the authorities playing the policeman has done as much, or almost as much, as could be expected,and that private organisations, natural partners and relays, are a vital instrument for extending and improving government action.

This view has been asserted very strongly in France since 1982 and led in April 1985 to insurance companies, training bodies, those engaged in the manufacture, repair and inspection of cars, accident

victim and safety associations, doctors and the mass media being invited to a round table meeting on new initiatives to promote road safety.

In this wider role to be played by non-government entities, it generally seems that the accent is on information and publicity and on road safety education (teaching of road safety in schools, basic training for young drivers, refresher and advanced courses for experienced drivers). For the time being this will in fact be seen as the main contribution by the private sector, as the other activities are considered to be more the prerogative of the authorities. However, some countries believe that no restrictions should be imposed from the outset.

2. Contribution by the mass media

The aim is not to study the activity of institutional means of communication (television, radio, general or specialised press) as vital relays in central or local government campaigns to reduce accidents, as this activity is simply a medium for the communication programme prepared by the authorities. The idea is rather to look into the spontaneous interest by the mass media in road accidents and the action taken independently by them to inform the public and bring home the problem, as a voluntary contribution towards making the roads safer.

It seems useful to try to assess the importance attached by the various countries to road accidents and road safety, in terms of the volume of information on cars and driving as compared with the total volume of information. Australia, Belgium, Denmark, Portugal, Spain and Switzerland consider that this importance is relatively high compared with the total volume of information, although it is stressed that the approach to accidents and safety is often more emotional than scientific. In Finland, France, Germany, Sweden, and the United Kingdom, it is considered relatively limited on both counts, as information on cars and driving has more to do with the smoothness of the traffic flow and driver and passenger comfort, or even the performance of new types of cars, than with safety aspects. Perhaps this should be seen as a danger sign that the public is beginning to consider driving accidents as normal, unavoidable events that are accepted as a penalty to be paid for technical progress. This statement requires qualification, however, and the recent, and laudable, increase in information given on actual road safety -- particularly in 1986, European Road Safety Year -- is to be welcomed.

On the whole, it does not seem that there is any significant quantitative differences between the media -- television, radio or the press -- although the information on road safety covered by the latter is generally more detailed than in radio or television broadcasts.

As regards television, the role of private stations, which exist only in certain countries, is considered important only in Australia and the United Kingdom. The main onus in bringing home the problem is therefore on the public television network. The effort is made rather at regional or local level in Australia and Belgium, more at national level in Finland and Portugal, and either at national or regional level in the other countries. It takes a variety of forms that coexist in most of the countries: specific information on accidents, advice on safety, interviews with specialists and special broadcasts such as panel meetings are the most common. Except in the United Kingdom, detailed accident reports or surveys among users seem to be few and far between.

The contribution of radio is made rather by public stations in six countries, or by either public or private stations in the other five States. The contribution is made especially by national stations in Finland, Portugal, Sweden and Switzerland, rather by regional or local stations in Australia and

Germany (*Lander*), and by national, regional or local stations in Belgium, Denmark, Spain, France and the United Kingdom. The types of broadcasts are roughly the same as those on television.

The contribution to road safety by the general press is made by the national, regional or local press in most countries. It is made more by the regional press in Australia, Germany and Switzerland, where decentralisation is obviously extensive due to federal structures. The form used is not a distinguishing factor, although the most common is the ad hoc report on a serious accident and brief advice on safety. Apparently, only the Swedish and British press give detailed accounts of accidents with in-depth supporting analyses. It should be noted that the latter trend is now being seen in France in the local press with the development of the "*Réagir*" programme for thorough multi-disciplinary investigations into serious accidents.

The amount of space devoted to road safety in the automobile press is regarded as limited or relatively limited in almost all the countries. It is considered extensive only in Australia and Switzerland. This is an important point: the automobile press is generally more concerned with the pleasure of driving or speed than with road safety, and is used more to express views by the manufacturers of powerful cars or fast motorcycles than by road safety bodies.

3. Contribution by manufacturers and importers

Of the eleven reference countries, only five have a real car industry, as the other five have no national manufacturers. However that may be, and except of course in the area of vehicle design, the effort by manufacturers and importers to promote road safety seems on the whole limited. It mainly appears to take the form of advice on safety, particularly in Australia. Denmark refers to their action in voluntary technical check-ups on vehicles.

On the other hand, the negative impact produced by certain car advertisements highlighting top speeds or aggressive behaviour by drivers is criticised by the majority of countries, except Australia where importers seem to play the game and avoid advertisements that are obviously inconsistent with road safety. The situation concerning this point is particularly disturbing in Spain and France. The reaction of the authorities differs with the country: Belgium, Denmark, Switzerland and the United Kingdom have no regulatory or contractual machinery to limit this type of advertisement. Australia intends to adopt such machinery following an enquiry by the House of Representatives which criticised these practices in 1983. In Spain the Government has some right to supervise television advertisements. In Germany, a gentleman's agreement has been reached on the subject. Only France has signed a draft agreement (1983) with the manufacturers and importers who are committed to taking a moderate line. The irregularities in its observance since 1983 have resulted in several warnings from the authorities, and developments are now being closely monitored.

4. Contribution by the car insurance sector

For the time being, the contribution of insurance companies in most countries (except Sweden) seems to be limited to collecting and processing accident statistics (essential for claim management and the calculation of premiums) and the dissemination of safety messages. Their safety role is therefore still extremely modest, particularly in driver training and car inspection activity, and their job is still essentially considered as an obligation to provide risk coverage. There is great scope here for road safety action within a partnership system associated with a general reappraisal of the car insurance

function. However, reference should be made to the case of Switzerland, where a financial contribution fixed as a percentage of insurance premiums is legally allocated to safety operations managed by the Swiss Road Accident Prevention Fund. Also to be noted is the very positive role played in Switzerland by the "*Bureau de prévention des accidents*" (BPA), a federal foundation governed by private law which carries out a variety of what is considered extremely important action and, under an original kind of arrangement, can call on voluntary road safety staff responsible for taking steps locally to obtain practical improvements at all levels. More generally, the insurance field's most significant contribution seems to be its participation in some countries in a road safety association.

In all countries the risk rating is based more or less on the individual's driving record, mostly with the use of a "bonus-penalty" system whereby high-risk drivers pay more and those with a clean record sheet pay less. This graduated system is determined by the government in Belgium and in France, by a professional body or the insurance companies themselves but subject to government supervision in Spain, Germany and Switzerland, and quite freely by the insurance companies in Denmark, Sweden and the United Kingdom.

Whether based on liability for fault or on a "no fault" system, the type of car insurance does not seem to affect the scope of preventive action.

5. Contribution by user and road safety associations

Most countries have a road safety body, generally in the form of an association governed by private law and often financed to a large extent by the insurance companies. These associations frequently contribute to the provision of information (advice to users) and education (road safety teaching in schools, refresher and advanced driving lessons, defensive driving courses, training and refresher courses for driving instructors), and sometimes put proposals to the authorities, whether they belong to an official advisory council (like "*Via Secura*", the Belgian road safety organisation) or whether they act independently. In some countries there are associations specifically responsible for preventing accidents among the agricultural population (e.g. "*Prévention Rurale*" in France, or "*Kuratorium für Verkehrssicherheit*" in Austria.

In the accident prevention field, the role of automobile clubs, motorcycle associations and other road-user groups is also to provide information on training. In Portugal this function has completely disappeared and has now been taken over by the national road safety organisation. In Australia, the association known as the "Australian Motorcycle Council" has shouldered responsibility for safety problems. In 1983, the leading French motorcyclist club opened constructive talks on safety with the authorities and accepted a contractual objective of reducing the number of accidents by 20 per cent in two years. Such groups also play a very active role in Switzerland.

Associations for accident victims or their families do not exist in Denmark, Spain, Portugal or Switzerland. Where they do exist, they seem to play a minor role for the time being. Reference should be made to an original development in Sweden where young people disabled through accidents speak in schools about what has happened to them personally, to the extensive development in recent years in France of associations for accident victims or their families (particularly of the "League against violence on the roads"), to which the tragic accident at Beaune on 31st July 1983 (53 fatalities including 46 children) has contributed, and to the co-operation by the authorities with these associations.

On the whole action by parents' associations to promote road safety does not seem to be greatly developed and is limited to local contacts with the municipal authorities or schools.

The same applies to consumer associations which still play a very modest role, sometimes by making recommendations on the safety of vehicles and their equipment. This is a far cry from the influence once achieved in the United States by the Ralph Nader movement.

The environmentalists also play a very marginal role, but the situation might soon change depending on the importance attached to atmospheric pollution caused by exhaust emissions, particularly in connection with speed limitations (France, Germany, Switzerland and the United Kingdom).

All in all, the involvement of user groups seems to remain surprisingly limited in accident prevention, perhaps because of the patchiness of their efforts in some cases and their disparity in others. The "*Réagir*" (react) programme developed in France since 1982 has enabled these organisations to take a more active part in joint action on road safety, a trend which is greatly encouraged by the authorities.

6. Contribution by the medical profession

Apart from the traditional action by the public health sector which is more concerned with the provision of emergency assistance[3], traumatology and re-education, the contribution to the road safety system by private doctors should obviously be an important factor in accident prevention.

But the survey shows that there are very few countries where this contribution has a wide impact. Quite the contrary, most of them consider it to be very or relatively limited. Of the eleven countries in question, it seems that Australia is the only country where the involvement of doctors in preventive action is both long established and on a wide scale. It should be remembered that doctors in this country were largely responsible for the definition of a number of safety regulations, and particularly for the compulsory wearing of seat-belts in 1971 in the State of Victoria. It should also be noted that the medical profession is very active in road safety questions in Sweden, as in the other Nordic countries.

Where it exists, the contribution by private doctors to the road safety effort seems to be made more by doctors' professional associations, while few if any direct contacts between doctors and their patients concern road safety.

When it does exist, the contribution by doctors mainly takes the form of advice, recommendations or warnings about the risk of driving under the influence of drink, certain medicines or drugs, or opinions on the incompatibility between certain handicaps or illnesses and driving. Some countries note the contribution by the medical profession to in-depth surveys on road accidents, although the forms taken by this contribution are not stated. In many countries, particularly in Australia, doctors have played an important role in influencing the authorities and persuading them to develop safety rules.

In the case of the medical press, almost all the answers show that quite limited or very limited importance is attached to road accident and safety questions.

7. Contribution by enterprises

Most countries consider that action on road safety by employers (whatever their status here -- government departments, public enterprises, or private firms) is on the whole limited. Once again it seems that Australia sets a very positive example, particularly in the transport, mining and construction sectors.

Accident prevention activity by firms is mostly limited to information and publicity campaigns on road safety questions and sometimes includes basic, refresher and advanced courses for drivers. Some countries refer to the role played occasionally by enterprises in sponsoring road safety information campaigns for the public.

Some enterprises, more particularly in the chemicals and oil sectors, have conducted exemplary accident prevention activities for their employees and even for the general public in some cases.

8. Experiments with mixed advisory committees

A systematic review of participation in the road safety system by various categories of professional or private associations or bodies leads to the question of possibly combining these dispersed efforts within a single entity acting as an advisory committee in dealings with the authorities. In this respect it is useful to review the experiments by some countries which have advisory councils or committees whose members include representatives of the authorities and from all sections of the private sector in any way concerned with the prevention of road accidents.

A body of this type known as the Australian Road Safety Council existed in Australia from 1947 to 1970. It consisted of the representatives of the States, Territories and local government and also included different kinds of specialists. Subsequently, from 1970 to 1975, this experiment was resumed with a group known as the Expert Group on Road Safety (EGORS) which also included various kinds of specialists whose job was to advise the Federal Ministry of Transport on road safety. Since 1947, there has been an Australian Transport Advisory Council (ATAC) which consists of the representatives of the States, Territories and local government as well as various practitioners and economic agents concerned with road safety. This advisory council has set up special committees to discuss various road safety questions.

In Belgium, the National Road Safety Council was set up by a Royal Order of 11th May 1965. Its role is to conduct any surveys or research capable of improving the road safety system, establish ongoing communication between the government departments concerned with road safety and the private sector, and express its views on all draft bills and orders concerning road safety. Its powers are in principle very wide since its mandate is to take all the necessary steps to ensure that anything likely to improve road safety is brought to the knowledge of those concerned, in particular road users, using all appropriate information, educational and advisory techniques. This body, which comes under the Minister of Communications and is chaired by him, consists of 73 members who represent nine government departments, automobile and touring clubs, "Via Secura" (Belgian road safety department), the Red Cross, the Foundation for Road Safety Studies, car experts, insurance firms, etc. Its contribution over the past 20 years in improving road safety in Belgium is considered important.

A similar body has existed in Denmark since 1966. It consists of representatives of the political parties in Parliament, government departments and a number of private organisations, expresses views

and recommendations on road safety policy and proposes changes to existing legislation. Here again its role is seen as extremely positive.

Spain has set up a National Road Safety Committee, which is chaired by the Ministry of the Interior and includes representatives from the other ministries concerned with road safety and from a number of public or private bodies involved in accident prevention. This national task force has set up a standing committee and groups of experts responsible for monitoring specific questions. Its permanent secretariat is provided by the Ministry of the Interior's Traffic Directorate. This task force works out national road safety plans which are then submitted to the government for approval. Its reorganisation is now being studied.

In 1983 Portugal decided to set up under the Ministry of Transport and Communications Traffic Directorate an advisory committee chaired by the Director General of Traffic. Apart from the representatives of several other government departments, its members include delegates from certain private bodies (automobile clubs, road safety groups) as well as the representatives of the Lisbon and Porto town councils. This advisory committee has not yet taken office.

A Federal Road Safety Council known as the "*Deutsche Verkehrssicherheitsrat*" (DVR) exists in Germany. This council consists of representatives of the Federal Government, the Länder and various professions or private organisations concerned with road safety (manufacturers, insurance firms, accident prevention associations, etc.).

In the United Kingdom, the Royal Society for the Prevention of Accidents (ROSPA), created in the early twenties, has several specialised committees which act in both the public and private spheres, and plays an important role in informing the public and educating users.

In Sweden an advisory council was set up in 1985 and has representatives from nine authorities and private organisations. It is chaired by the Director-General of the Swedish Road Safety Office. The Council's main task is to co-ordinate the traffic safety work done by its members and to submit to the Government a long-term plan for such work.

In Finland, a multi-disciplinary advisory body has been in existence since 1973.

The question of setting up a body of this type has been frequently raised in recent years in France. Such an initiative was requested not long ago by some members of parliament who in 1984 formed a multi-party group on road safety. The desirability of setting up such a body is now being studied.

9. Conclusions

In conclusion, it should be pointed out that, since the efforts made by Governments have gone as far as they can in some respects, preventive activities should in future be conducted more by the private sector concerned with road accidents, especially through user groups and private associations for the prevention of accidents which can play a decisive role in this connection. It is moreover encouraging to note that there seems to be a growing awareness in this respect and that there has been an appreciable increase in such involvement in recent years.

NOTES

1. References are to the following eleven countries: Australia, Belgium, Denmark, Finland, France, the Federal Republic of Germany, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

2. With the exception of the Scandinavian countries.

3. In this connection, reference may be made to the ECMT report on "Measures to Improve Emergency Assistance in Road Traffic" [see CM(83)17 revised and CM(83)20].

Annex

BODIES RESPONSIBLE FOR PROVIDING THE PUBLIC WITH ROAD SAFETY INFORMATION

Federal Republic of Germany
Bundesministerium für Verkehr
(Federal Ministry of Transport)

Public information work and its organisation comes under the Federal Ministry of Transport, more particularly as regards relations with the press and the preparation of brochures. Programmes and activities relevant to road safety education and information for specific target groups, together with advertising campaigns are organised by the *Deutsche Verkehrssicherheitsrat (DVR)* (German Road Safety Council), a central coordinating body. Two-thirds of its finances come from public funds.

The Bundesanstalt für Strasenwesen (BAST) (Federal Highway Research Institute), a scientific institution of the Federal Ministry of Transport is responsible for preparing and evaluating research and for keeping researchers informed.

Austria
Bundesministerium für offentliche Wirtschaft und Verkehr
(Federal Ministry for the Public Economy and Transport), plus the public institutions:

-- Federal Ministry of the Interior
-- The Central Austrian Statistical Office
-- Accident Insurance Company
-- Austrian Broadcasting Company

In sectors subordinate to the Ministry, by the:

-- Police and Gendarmerie

Through entirely independent organisations such as:

-- The Road Safety Board
-- Automobile clubs such as ÖAMTC and ARBÖ

Belgium
Ministère des Communications
Conseil Supérieur de la Sécurité Routière

The following ministries are represented in the "Conseil"

-- Ministry of Communications
-- Ministry of Public Works

-- Ministry of Finance
-- Ministry of Justice
-- Ministry of Health
-- Ministry of the Interior
-- Ministry of Education
-- Ministry of Defence
-- Ministry of the Economy and Energy

plus representatives from a further 41 organisations.

Denmark
Radet for storre Faerdselssikkerhed
(Danish Road Safety Council)

-- Independent, self-governed organisation
-- Under the control of the Ministry of Justice
-- Looked upon as a semi-public institution
-- Composed of 30 representatives from ministries, authorities and organisations
-- 50 per cent of its finances come from public funds (the remaining 50 per cent coming from private institutions, firms and membership fees from the children's traffic club)

Spain
-- *Directorate General for Traffic*
Organisation assigned to the Ministry of the Interior

-- *National Commission for Road Safety*
Interministerial organisation in which 15 ministries and various social groups are represented, e.g. automobile clubs, the Red Cross, vehicle manufacturers, etc.

Finland
Liikenneturva
(Central Organisation for Traffic Safety in Finland)

-- Association of public law under the control of the Ministry of Communications -Responsible for information and road safety education
-- Financed by the insurance companies according to the provisions of a law

France
Comité interministériel de la Sécurité Routière, chaired by the Prime Minister and including all Ministries concerned with the prevention of road accidents;

Ministére de I'Equipement, du Logement, de I'Aménagement du Territoire et des Transports
(Safety and Road Traffic Directorate);

Other Ministries: (Health, Education, Interior, etc.) on a much more ad hoc basis;

Various associations, such as: *Prévention Routière, Prévention rurale*
(agricultural mutual insurances)
Centre de Documentation et d'Information de l'Assurance, automobile clubs, Association pour la Sécurité sur les Autoroutes, Secours Routier Français, etc.

Luxemburg
-- *Ministry of Transport*
-- The State Traffic Commission
-- Ministry of Education
-- Police and Gendarmerie
-- The Road Safety Association
-- The Association of Insurance Companies
-- The Automobile Club.

The Netherlands
Veilig Verkeer Nederland
(Safe Traffic, Netherlands)

Works in close cooperation with the Ministry of Transport which provides 70 per cent of the budget for "Veilig Verkeer Nederland".

United Kingdom
Department of Transport in cooperation with different organisations such as:

-- Automobile Association;
-- Royal Automobile Club;
-- Royal Society for the Prevention of Accidents (official road safety organisation, supported by the Government and by local sponsors, non-profit-making).10

Sweden
-- *National föreningen för Trafikstäkerhetens Främjande (NTF)*
(National Society for Road Safety)

Responsible for organising campaigns, road safety education, road safety literature and materials, and a children's traffic club;

Financed by the government, insurance companies, membership fees and the sale of road safety materials.

-- *The Swedish Road Safety Office*

Comes under the jurisdiction of the Ministry of Transport.
Responsible for giving information on new traffic regulations.

Switzerland

-- *Schweizerische Beratungsstelle für Unfallverhütung (bfu)*
(Swiss Advisory Board for Accident Prevention)

Private law foundation;

Task: the promotion of accident prevention in all areas outside the work environment;

Finances: structural contribution from the Swiss Fund for the Prevention of Road Traffic Accidents plus some financing from non-industrial accident insurance premiums.

-- *Schweizerische Konferenz für Sicherheit im Strassenverkehr (SKS)*
(Swiss Conference for Safety in Road Traffic)

Legal status: association;

Tasks: the activities of this Conference concern essentially the preparation, implementation and organisation of the road safety education campaigns conducted annually on a national scale;

Members: representatives of the authorities at the confederate, canton and commune levels, of private associations and institutions, of insurance companies and individual firms;

-- *Swiss Fund for the Prevention of Road Accidents:* public law body whose task is to co--ordinate and promote measures aimed at preventing road accidents;

-- *Road-users Associations.*

ROAD SAFETY OF CHILDREN

1987

RESOLUTION NO. 50 ON ROAD SAFETY OF CHILDREN

[CM(87)13]

The Council of Ministers of Transport, meeting in Madrid, on 26 and 27 May 1987:

HAVING REGARD to the report of the Committee of Deputies on the safety of children;

CONSIDERING:

-- that the premature death of young road users must be regarded as particularly unacceptable, precisely because they are children;

-- that traffic accidents represent the most common cause of accidental death among children under 15 years old;

-- that it has adopted several Resolutions since 1975 with a view to reducing the mortality of children in road accidents, and that the indepth study by the OECD Scientific Expert Group on Traffic Safety of Children presents valuable analyses which supplement the statistics on children's deaths and injuries in road traffic.

RECOMMENDS the Member countries of ECMT:

-- to pay due regard to the safety aspects in the planning of the traffic environment, especially in residential areas, considering the child's inherent need for living range, and to organise through traffic in residential areas by physical and regulatory means;

-- to pay special attention, outside residential areas, to the design and location of crossing facilities used by children, especially near the schools and in places where children move a lot in the traffic;

-- to inform drivers about children's difficulties in traffic and to instruct them to be aware of the children's specific capabilities and limitations;

-- to provide children at different ages with training designed to call attention to the risks in the environment where the child plays and exists;

-- to emphasize the roles of parents as instructors of their children, especially before school age, and as an example to children and young people in traffic;

-- to inform parents about the risks due to the fact that children are entering traffic at an increasingly early age as cyclists, or indeed as drivers of mopeds;

-- to encourage the development and use of a light protective helmet suitable for cycling;

-- to urge parents to transport those children who cannot use seat belts in appropriate child seats.

REPORT ON ROAD SAFETY OF CHILDREN

[CM(87)13]

I. GENERAL BACKGROUND

The general situation in road safety and the problems involved have been outlined on a number of occasions in previous reports. It is however worthwhile recalling the main facts. The findings set out in this report have been analysed in detail in the study by the OECD Scientific Expert Group on Traffic Safety of Children (OECD, April 1983).

By way of introduction, reference may also be made to a report published by the World Health Organisation (WHO) in 1981 which states:

> "*Any attempt to generalise is prone to error, but one can say, generally speaking, that accidents cause between a quarter and half the deaths in Europe in the 1-14 age group: traffic accidents represent between one-third and half of this total and are the most common cause of accidental death*".

Throughout the twentieth century remarkable progress has been made in reducing overall mortality and improving the general health among children, but no such improvement has been achieved in reducing child mortality from traffic accidents. Consequently, the relative importance of traffic accidents as a cause of impairment, disability and death of children continues to increase.

When analysing accident statistics, even those for ECMT member countries, it has to be borne in mind that, although formally comparable, the national data vary considerably as regards their coverage and reliability. Methods of compiling statistics differ significantly from one country to another. Also, the definitions used for certain accident terms and the methods of recording the data are often different. Therefore the crude figures given and the corresponding percentages cannot in themselves explain the underlying reasons for the occurrence of accidents; nevertheless the trends can be informative.

The term "child" in this text is defined to be those from 0-14 years of age. This group is often divided into three subgroups: 0-4, 5-9 and 10-14 years old.

In 1986, the OECD published a report by a Group of Experts entitled: "Effectiveness of Road Safety Education Programmes". This report made a detailed assessment of the value of road safety education as an accident prevention measure. In spite of the well-known fact that the most powerful effect on the safety of unprotected road-users (particularly children, juveniles and the elderly) derives from measures related to the way in which the traffic environment, interpreted in both its broad and narrow senses, is designed and structured, the report describes in depth different methods to evaluate road safety education approaches. The OECD Expert Group decided to confine its attention to studies on the road safety education provision for unprotected young road users up to the age of 16. The report contains important methodological recommendations for those active in both developmental and evaluational research. It also states that there is little of value to add to the recommendations published in the OECD report (1983) on the traffic safety of children.

II. CHILD ACCIDENT STATISTICS

The statistics below highlight trends from 1970 to 1979 as set out in the OECD study published in 1983. More recently, a limited updating of the data was carried out on the initiative of the ECMT Road Safety Committee. The results, which are given in the text in brackets (), are based on the data for 1985 supplied by eleven countries and, in particular, seven ECMT members.

General assessment

Children in the 0-14 age group constituted in 1979 on average 23.2 per cent of the population in the group of countries under review (N= 16) (1985, 19.1 per cent, ten countries) and accounted on average for 8.4 per cent (1985, 7.1 per cent, ten countries) of the total number of road accident fatalities.

The breakdown of child road deaths as a percentage of the total number of road deaths shows that the 0-4 age group is the least affected (1985, the same). The respective breakdown for child injuries is substantially the same. The most affected age group in child road injuries is the 10-14 year olds (1985, the same, eight countries).

A comparison of the death rate figures for children in different age groups with those for the total number of deaths of those in the same age groups, reveals that for the age group 5-14 one death in four results from a road accident. These data concern results from nine countries.

As regards the breakdown by sex, the OECD analysis in 1983 found that the ratio of girls to boys killed in road accidents is roughly 1 to 3, for cyclists nearly 1 to 4. The above updated data for 1985 supplied by eleven ECMT countries show that the ratios have changed: the ratio of girls to boys killed in road accidents is 1 to 1.5. In the case of cyclists the ratio is 1 to 2.1.

Child pedestrian casualties

Of all pedestrian deaths 18 per cent (15 per cent in 1985, eleven countries) fall into the group 0-14. The age group 5-9 is relatively the most affected in child pedestrian deaths. The same age group is the most vulnerable to injuries.

Child cyclist casualties

Child cyclist fatalities account for, on average, 24 per cent (18 per cent, eleven countries, 1985) of all cyclist fatalities. In 1985, injuries to child cyclists accounted for nearly 27 per cent of the total number of injuries to cyclists in eleven ECMT countries. As might be expected, the 10-14 age group was the most vulnerable cyclist group amongst children both during the seventies in the OECD countries and in 1985 in eleven ECMT member countries. The breakdown for injuries is the same as for deaths.

Child casualties as car passengers

Child car users can clearly not be the instigators but only the victims of road accidents. Road deaths and injuries to children as passengers in cars account on average for 35 per cent and 49.3 per cent, respectively, of all child road deaths and injuries (in 1985, 28.2 per cent and 28.4 per cent respectively in ten countries).

The incidence of deaths and injuries is roughly the same for all three age groups. According to the report drawn up by OECD in 1983, it would seem evident that traffic accidents are leading to a definitely too high incidence of long-term incapacity amongst children, particularly physical handicaps.

Trends in child road casualties between 1976 and 1985

In accordance with the above updating (see following table), it can be said that the relative safety of children improved more quickly than that of adults during the period 1976-1985.

The safety trend for pedestrians is more favourable than that for cyclists and also more favourable for pedestrians injured than pedestrians killed. As regards cyclists, the number injured has fallen much more rapidly than the number killed. Overall, however, the number of children killed or injured is still totally unacceptable.

Children (0-14 years) who are road accident casualties
(killed and injured) (as a percentage of total accident casualties)

(Data for 11 ECMT Member countries covering the period 1976-1985)

Year / Category	1976*	1977*	1978	1979*	1980	1981	1982	1983	1984	1985
Killed	9	7	9	8	7	7	7	7	7	7
Injured	13	13	12	12	12	12	12	12	11	11
Killed as Pedestrians	18	18	17	16	15	15	15	15	14	15
Injured as Pedestrians	40	40	41	37	36	36	35	35	35	34
Cyclists killed	23	24	22	22	21	19	20	20	21	18
Cyclists injured	38	38	36	37	33	32	32	32	29	27

*The percentage for this year relates to only 10 member countries.

III. REFERENCES TO EARLIER ECMT RESOLUTIONS ON ROAD SAFETY

The ECMT Council of Ministers has approved several Resolutions with the aim to reduce the mortality of children in road accidents.

Resolution No. 33, adopted in June 1975
Subject: The problem of young children carried in front seats of motor vehicles.

Main provisions:

-- Obligation - unless there is good reason for not doing so - for children to be carried at the rear of motor vehicles;

-- Establishment of common standards for the design and type approval of special safety devices for children carried in motor vehicles;

-- Withdrawal from the market of seats and other safety devices for children which are plainly ineffective or even dangerous.

Resolution No. 37, adopted in June 1978

Subject: Driver training.

Main provisions:

-- Introduction of a comprehensive and coherent system of driver instruction, the main purpose being to ensure that behaviour is in conformity with road safety requirements;

-- Promotion of road safety education in schools as recommended by the ECMT/Council of Europe Joint Conferences.

Resolution No. 38, adopted in June 1978

Subject: Seat belts.

Main provisions:

-- Fitting of seat belts in new vehicles, preferably with three-point anchorage, both for front and rear-seats;

-- Compulsory, wearing of seat belts, both inside and outside built-up areas, for car occupants whose age, body measurements and physical condition allow it.

Resolution No. 39, approved in 1979

Subject: The road safety of children and young people.

Main provisions:

-- Environmental adjustments with due regard to the psychological and biological development of children.

-- The role of parents in promoting the safety of children.

-- Publicity campaigns as a safety device.

Resolution No. 44, adopted in May, 1983

Subject: Making cycling safer.

Main provisions:

-- segregation of types of traffic and of bicycles and motor vehicles, primarily by means of the construction of cycle paths.

-- national information campaigns to make motorists and cyclists aware of the latter's vulnerability and advise them of the road behaviour required in consequence.

-- adoption of technical standards for bicycles so as to ensure that they are as safe as possible.

-- compulsory fitting of a standard set of reflecting devices on bicycles.

Resolution No. 51, adopted in November 1984

Subject: School transport.

Main provisions:

-- Planning, organisation and financing of school transport services;

-- Development of road safety education in schools including information on school transport safety;

-- Checks on the qualifications and retraining for drivers of vehicles used for school transport;

-- Improved safety arrangements at bus stops and at their vicinity

-- Provision of adequate supervision at bus stops near schools, and the presence of supervision in the vehicle;

-- Development of the statistics on accidents involving children in school transport.

A new Resolution, designed to improve road safety for children and which takes account of the present situation is attached to this report, for approval of the Council of Ministers.

FITTING AND WEARING OF SEAT BELTS ON THE REAR SEATS OF CARS AND SAFER TRANSPORT OF CHILDREN AND ADULTS

1988

RESOLUTION No. 54
CONCERNING THE FITTING AND WEARING OF SEAT BELTS ON THE REAR SEATS OF CARS AND SAFER TRANSPORT OF CHILDREN AND ADULTS

[CM(88)29]

The Council of Ministers of Transport, meeting in Paris, on 29 November 1988:

HAVING REGARD TO:

-- Resolution No. 28 of 14 June 1973 concerning seat belts;

-- Resolution No. 33 of 18 and 19 June 1975 concerning the problem of young children carried in front seats of motor vehicles;

-- Resolution No. 38 of 31 May and 1 June 1978 concerning the wearing of seat belts;

CONSIDERING:

-- that the effectiveness of seat belts can not be contested and has been established by many scientific studies;

-- that the studies made show that the wearing of seat belts, compared with the situation of non-wearing, reduce, by at least 50 per cent the risk of being killed or injured in a car accident;

-- that this significant reduction of the risk not only concerns the occupants of the front seats of passenger cars but also the occupants of rear seats;

-- that passengers in rear seats who do not wear seat belts are not only running a risk of being injured themselves but also endanger persons in front who are using seat belts particularly, for example, if they are thrown forward;

-- that restraining devices are not effective solely for adults since similar results can be obtained in the case of children if the devices used are adapted to their age, size and weight;

NOTING:

-- that it has not as yet been made compulsory in all countries to fit seat belts in the rear seats of new cars;

-- that despite the progress recently made in this connection, only a few countries have made it compulsory to use restraining devices for passengers in rear seats;

-- that only a few Member or Associate countries of the ECMT have made it compulsory to use restraining devices for children irrespective of their age or the seat in which they are travelling; That restraining devices for children are not used sufficiently because the public too often

considers, incorrectly, that it is only dangerous for children to travel in the front seats and that they are safe enough in rear seats;

-- that despite the fact that restraining devices are acknowledged to have a high degree of effectiveness, there are still too many cases in which their use is not compulsory;

RECOMMENDS the Member countries of the ECMT:

1. to make it compulsory for the rear seats of passenger cars to be fitted with seat belts;

2. to introduce as soon as possible provisions stating clearly that all occupants of rear seats of passenger cars, adults and children, should be protected by an adequate restraining system;

3. to make it also compulsory, for children travelling in front seats, to be protected by restraining devices adapted to their size, weight and age;

4. to limit as far as possible the number of categories of person exempt from wearing seat belts.

REPORT CONCERNING THE FITTING AND WEARING OF SEAT BELTS ON THE REAR SEATS OF CARS AND SAFER TRANSPORT OF CHILDREN AND ADULTS

[CM(88)29]

In 1973, the Council of Ministers of Transport of the ECMT in its Resolution No. 28, called upon the Conference Member countries to do everything in their power to promote the use of safety belts. In 1978, the Ministers of Transport took the subject up again in their Resolution No. 38 recommending strongly legal provisions concerning the fitting and the use of safety belts as well as accompanying measures of information. Both Resolutions made it clear that the positive effects of safety belts are undisputed. The Committee of Deputies was requested to watch the realisation in practice of the recommendations and to investigate the effects.

The Programme of Cooperation on Road and Road Transport Research of the OECD kept an eye on the development. In 1984-1985, a group of experts of this Programme (under the chairmanship of the United States) submitted the summary report "Effectiveness of safety belt usage programmes", which corroborated the high effectiveness of safety belts. But it was also noted that not all possibilities of improving safety belt usage had been utilised everywhere. Therefore, the following is recommended:

"Safety belt use is an area where the important recommendations are straightforward. First, the enactment of a safety belt use law must be one of the highest priorities of every traffic safety professional. Second, it is not unreasonable to establish belt use goals in excess of 90 per cent. This level of belt use has been achieved in enough jurisdictions to make its accomplishment realistic.

It is further recommended that belt use laws should incorporate a meaningful sanction, that laws should be enforced and that the enforcement must be accompanied by public education."

This situation gave reason to the Road Safety Committee of the ECMT again to work out recommendations for an improvement of the belt use behaviour. It is exactly inadequate and incomplete regulations that can be considered to be a danger for the lasting positive attitude of road users towards the safety belt. This might lead to a decrease in the safety belt wear rate, which again would jeopardize the great success that has widely been achieved to date, and would make the realisation of further improvements considerably more difficult. The Resolution is submitted to the Council of Ministers for its approval.

ROAD SAFETY

1989

RESOLUTION No. 55 ON ROAD SAFETY

[CM(89)17]

The Council of Ministers of Transport, meeting in Edinburgh on 23rd and 24th May 1989:

EXTREMELY CONCERNED by the unacceptable number of lives lost in road accidents and by the injuries caused -- which are often very severe and irremediably handicap a large number of people -- as well as by the heavy toll in terms of human suffering and effects detrimental to the economy arising from a lack of safety on the roads;

PARTICULARLY DISTURBED by the trends recently recorded in most Member countries which show that the situation has deteriorated markedly after having improved over a period;

CONVINCED that the road safety policies pursued in the various countries need to be given fresh impetus, which will simultaneously call for determined efforts by Governments, a contribution from the agencies active in this connection in society, and greater awareness on the part of all rail road users;

REAFFIRMS its political will to give clear-cut priority to measures designed to reduce road casualties significantly and on a lasting basis;

CONSIDERS, accordingly, that it is advisable to strengthen international co-operation in this connection within ECMT, not only by means of an ongoing exchange of information to enable member countries to make the most of their respective experience but also, depending on the nature of the matters concerned, with a view to reaching joint decisions at the level of the Council of Ministers;

INSTRUCTS the Committee of Deputies to propose specific measures to it for the purpose of improving road safety in Europe.

RESOLUTION No. 56 ON ADVERTISING THAT CONFLICTS WITH ROAD SAFETY AIMS

[CM(89)37]

The Council of Ministers of Transport, meeting in Paris on 22 November 1989:

HAVING REGARD TO the report on advertising that conflicts with road safety aims;

NOTING that a total of over 65 000 people are killed each year in road accidents in ECMT member countries;

NOTING that the analysis of factors contributing to road accidents clearly show the predominant role played by human behaviour;

NOTING that such behaviour is bound up with the public image of the car and may be strongly influenced by advertising;

CONVINCED that it is necessary to continue to make even greater endeavours to change the behaviour of road users on a lasting basis;

CONSIDERING that any improvement in human behaviour first calls for better quality advertising which does not prompt drivers to adopt behaviour that is aggressive, violent or to the detriment of other road users but which, on the contrary, attaches greater importance to forms of behaviour conducive to safety on the roads;

RECOMMENDS THE GOVERNMENTS OF ECMT MEMBER COUNTRIES:

1. to draw the attention of manufacturers and importers of motor vehicles and equipment, producers of motor fuels and oils, advertising agencies and journalists to the dangers that may be associated with advertising which does not take account of road safety requirements;

2. to ask them to introduce or develop conventions or other agreements with a view to monitoring the content of advertising messages themselves so as to ensure that they comply with the rules of a code of practice laid down beforehand and compatible with road safety requirements and, more particularly, to urge them to regard as inappropriate any advertising whose content:

-- extols performance or power and treats driving as a sport;

-- shows scenes evoking motor racing, lightning acceleration and top speeds;

-- evokes needs incompatible with safety or suggests exaggerated personal values such as dominance, impetuosity, or power;

-- instils in the driver a false sense of safety by suggesting that particular technical characteristics (of the vehicle or its accessories) will enable him to master every dangerous situation;

-- represents or evokes by means of imperceptible devices particular facts or situations that cannot exist in reality;

-- prompts the driver to break the law and infringe the basic rules governing careful driving.

3. To ask manufacturers and importers of motor vehicles and equipment, producers of motor fuels and oils and those responsible for the media to replace the detrimental content of advertising messages by:

-- objective information which helps the safety-conscious purchaser to make a rational choice;

-- neutral texts and images associated with the concept of safety (for example, interpret the road-holding qualities of a vehicle as a safety factor);

-- information about the vehicle's reliability, fuel consumption and comfort, and about the need to protect the environment;

-- messages that help to develop a sense of responsibility, tolerance, and compliance with regulations;

-- messages that show the convivial aspects of driving and the pleasure of a good rapport with the environment;

-- information that convinces the purchaser that the image created by his choice is that of a well-- informed person who is aware of his responsibilities and who is both helping to make the roads safer and protecting the environment.

4. In the light of the circumstances specific to each country, to promote advertising that is conducive to safety on the roads.

5. To consider the possibility of creating an international prize to be awarded for the car advertising campaign that shows the most concern about road safety.

INSTRUCTS the Committee of Deputies to monitor the implementation of the measures recommended in this Resolution.

REPORT ON ADVERTISING THAT CONFLICTS WITH ROAD SAFETY AIMS

[CM(89)37]

1. Introduction

In 1987, the Road Safety Committee decided to include in its pluriannual programme of work the question of "advertising that conflicts with the aims of road safety" and it requested the French Delegation to draw up a preliminary note on this matter. The first report was to be discussed at the Committee's session on 8 and 9 March 1988 and set out the initial considerations based on the information that the member countries of the Conference had provided at that time. This version has now been prepared in the light of the comments subsequently made by the delegations of those countries.

2. Scope of the report

It should first be pointed out that the question of advertising that conflicts with the aims of road safety has not previously been the subject of any scientific research at international level carried out on comparative bases and with advertising material produced over a sufficiently long period of time for any changes in the content to be noted. At most, a certain amount of research is available for individual countries, more particularly Germany, Sweden, Switzerland and France. What this amounts to, is that as matters now stand in the majority of countries, any measures that might have been taken to restrict the more widespread development of advertising that conflicts with the aims of road safety, have been mainly initiated on the basis of factual data and raw material without first carrying out precise studies of the content and surveys of public images and impact.

Secondly, it is advisable to state precisely what the subject of this report is by identifying the types of advertising message that are incompatible with road safety requirements. "Advertising that conflicts with the aims of road safety" is here taken to mean any message:

-- produced by manufacturers (or by advertising agencies on behalf of manufacturers) to promote a product, but not articles written on a given product in the press or other publications;

-- concerning products in direct or indirect relation to cars, motor vehicle traffic and road safety;

-- designed to extol the "a priori" qualities of a product, laying particular stress on characteristics that conflict with the requirements of safety on the roads, i.e. prudent thoughtful driving with care for the safety of others and compliance with safety regulations.

The potential field of enquiry is therefore extremely wide and, unfortunately, little explored up to the present. This study will deliberately be confined to the advertising of motor manufacturers and, incidently, motorcycle manufacturers.

Lastly, it should be noted that this report relates primarily to advertising slogans of a written (posters and advertising through the press) or spoken nature (radio or television) and government measures taken to restrict or ban such advertising, as studied by the countries on which sufficient

literature was available, namely France, Germany, Luxembourg, Sweden, Switzerland and the United Kingdom and, to a lesser extent, Belgium and Spain.

There is a considerable risk of seeing an emphasis on vehicle performance in the advertising of manufacturers to promote cars and motorcycles, more particularly on the top speed, acceleration capability and the sensations that these performances may prompt in the way the use of the vehicle is perceived and, accordingly, in the way the roads are used.

It might seem reasonable to assume that other types of performance could be described and promoted in such advertising, especially the performance in connection with the pleasant and convivial aspects of driving, safety, solidity, long lifespan, comfort, quietness, fuel savings and the need to protect the environment, but on the contrary it is found that:

1. many if not all of these advertisements either directly or indirectly justify the performances that will here be described as negative;

2. the slogans conflicting with the aims of road safety have been tending to increase over the past few years;

3. such advertisements probably have a negative effect on behaviour which should be analysed with precision;

4. the response of the public authorities and/or professional bodies to this irregularity would seem to be particularly timid;

5. very little has been done along the opposite lines to encourage advertising to promote road safety;

6. concerted international action is called for in this connection to back up the measures taken at national level and so have real and lasting effects.

3. Some specific cases

There are a number of examples of advertising deliberately seeking to highlight certain performances that clearly conflict with the aims of road safety, more particularly the top speed which, in the case of existing luxury models and "over-powered" cars of the "turbo" type, reach or even easily exceed 200 km/h.

In France when the 1984 International Motor Show was being held in Paris, a French manufacturer had put up thousands of posters all over France to promote a new turbo model solely with the slogan "200 km/h". A survey carried out in recent years in the United Kingdom also provided a particularly eloquent anthology concerning domestic or imported models: a Japanese manufacturer, for example, vaunted "a decidedly illegal top speed", while an Italian manufacturer referred to a new model as a vehicle "complete with everything you need to enjoy driving at 112 mph", and a German manufacturer promised that another model "will whisk you from zero to 60 in 9.2 seconds, then on to a top speed of 115 mph"; a French manufacturer refers to its new model capable of doing 200 km/h as "the 125 mph turbo", while a United Kingdom manufacturer claims for one of its new products that "it'll hit 60 mph in 6.8 seconds flat and show its extra muscle in a eager dash to 100 mph in 18.2 seconds on its way to an effortless 135 mph top speed".

It should be noted however that the most common advertising at present is more discreet, either because manufacturers are keeping within certain bounds dictated by a fundamental respect for the regulations or because particular agreements obliged them to adopt a minimum of self-discipline. Their arguments then become more subtle. There is no longer a direct reference to speed but to lightning acceleration whereby the other car can be overtaken as if it were a toy, irrespective of whether or not this capability is dressed in the false trappings of safety (such acceleration enabling fast overtaking is therefore a potential guarantee of safety). More generally, preference is made to driving the cars as to objects that provide pleasure, enjoyment, and freedom. For example, a German manufacturer described one of its recent models as simply "a pure joy" ("pure Freude"). Some go as far as calling on the impulse to dominate: in its advertising in Germany a French manufacturer describes its product as the world's race and rally champion ("zum Weltmeister") and a Japanese manufacturer speaks of "powerplay". The fact is that one is a champion or one is powerful only in relation to others whom one succeeds in (or risks?) crushing (symbolically). The "claws" that a French manufacturer shows evoke the image of pursuit, prey and threat. And what is to be made of the word "wild" ("sauvage") when a French manufacturer speaks of his famous "wild chevrons" ("chevrons sauvages"), a term that is certainly (consciously?) qualified by the play on words between "chevrons" (the manufacturer's emblem) and "chevaux" by showing on the poster the horses of Camargue galloping in complete freedom? This impulse towards freedom (or liberation, but liberation from what and which prison?), impetuosity, superiority, reference to wild beasts (a special study should be carried out in this connection), sexuality (always experienced in the submission/ domination relationship) and conquest of the other is fundamentally in contradiction with the real social and cultural values inherent in road safety requirements, values that may be listed as moderation, courtesy, solidarity, respect for others, integrity, and so on. What such advertising negates is the right of the other -- which is equal by definition and not less valid -- to live in peace on the road, because driving is not an individual matter but a social act (we do not take the road, we use it or share it). This social act cannot be seen as a trial of strength (even if the relationship is -- to put it more subtly? -- expressed through money, the means of oppression indeed: an advertisement in the United Kingdom by a Swedish manufacturer points out that you pay for the right to drive fast: "the more money you pay, the faster your money goes", as if one could buy the right to contravene the social norm, in other words pay for the right to kill). The Advertising Standards Authority in the United Kingdom has remarked how frequently advertising associates cars with revolvers or bullets.

As pointed out by a remarkable German study by 1. Pfafferott ("Fahrzegwerbung und Verkehrssicherheit", Bundesanstalt für Strassenwesen: 1984), an analysis of the content of recent advertising by manufacturers and importers in Germany would seem to indicate that this trend has become more marked over the past few years for both cars and motorcycles, particularly the latter. This also applies in France especially since the arrival on the market of small over-powered cars of the turbo type some ten years ago. After some moderation during the 1970s, it would seem that car advertising in the decade now drawing to a close has seen a certain return to slogans relating to speed and, more generally, the performances of cars and motorcycles. There are a number of possible explanations for this:

1. Following the 1970-1980 period involving large-scale road safety policies based on regulations, monitoring and penalties, assisted by the oil crises and energy conservations policies, the road user has been going through a period of relapse and again responding to the sirens' song extolling speed at the precise moment that road safety policies seem to be seeking a fresh approach.

2. The steep fall in the price of the barrel of oil convinced the public that the energy conservation

policy is now out of date and -- in accordance with the principle of the pendulum swinging to the other extreme -- that more petrol can therefore be consumed, which means driving faster and more aggressively, especially since some people had a feeling of frustration.

3. Car races and rallies are now extremely popular (Paris-Dakar, Monte-Carlo rally, the Le Mans 24 hours race, etc.) and the main cultural models offered here for consumption by the public are clearly not those promoting safety and moderation but rather performance and driving as a sport, even if practised by specialists in a secluded world.

4. The clear-cut return to more hedonistic and individualistic values emphasizes the seductive powers of the slogans concerning pleasure, enjoyment, and the egoism of fast "sporting" driving.

Given this situation, there are of course attempts at justification by manufacturers and regulation on the part of the public authorities or professional bodies, or even both at the same time.

The manufacturers and advertising agencies and the graphic artists working for them maintain that what is regarded as negative in terms of safety in some of their advertisements is:

1. Dictated by trends in public taste: but here we have the image of the car which must be changed in the public's eye.

2. Necessary in a market without frontiers in order to cope with the advertising of competitors on equal terms. However, a contrary view is illustrated by a company like Volvo which has systematically based its advertising campaigns for some years on robustness, quality and safety.

3. Not their problem: it is for the manufacturers to make their cars, even fast ones, for the public authorities to "make" road safety, and for road users to learn to drive well: is the sale of knives prohibited because they may cut fingers? The response here is that there are probably limits that must not be exceeded and, in any event, there is a profound contradiction, which is not really logically acceptable between an official road safety policy and a marketing strategy based on values that are far removed from those advocated by that policy.

4. The public authorities' response

The response by the public authorities has been somewhat late, timid and of doubtful effectiveness. Other than in the case of Germany, where an initial attempt to restrict questionable advertising was made in 1972 on the basis of a self-disciplining agreement by the profession, it was not before the 1980s that concern began to increase and some reaction became evident.

In 1984 the German authorities updated and strengthened the agreement concluded with manufacturers in 1972. It was moreover a gentlemen's agreement entered into freely at the request of the public authorities and involving no penalties. It may be considered that this 1984 agreement in fact helped to reduce somewhat the amount and aggressiveness of some questionable advertising (see C. Vierboom and W. Wagner, "Psychologisches Forschungsinstitut", Cologne, 1987). This was also the case for motorcycles where the absurd race for power and speed over the past ten years resulted in 1984 in the adoption by a German manufacturer and importers (1 American and 4 Japanese) of an agreement on restraint ("Vereinbarung über die Gestaltung der Motorradwerbung").

A second example is provided in France where the increase in aggressive advertising resulted in 1984 in an agreement to restrict such advertising which was signed by the road safety authorities and the motor manufacturers association (but not the importers who account for more than a third of the registrations in France). The implementation of this agreement by French manufacturers was made subject to the Government taking steps to ensure that the same principles applied to imported vehicles. Unfortunately, where both French and foreign vehicles were concerned, neither the spirit nor the letter of this agreement have really been respected, since some advertising is seen by the public authorities as in defiance of the commitments entered into, while the Government has no doubt not given itself the means to enforce compliance with the text signed.

The Advertising Standards Authority in the United Kingdom has been receiving many complaints for some years and has gradually established precedents whereby manufacturers have the right to boast of the speed and performance of their vehicles but not to the extent that this might seem to prompt drivers to break the law. For example, there would be criticism of a slogan such as: "It's easy to forget speed limits ... Breaking the law at 100 mph feels like cruising at 50 mph". The ASA acts solely by addressing warnings to manufacturers and importers who are asked to revise their advertising. It cannot be said just how effective this approach is, other than to point out that a number of manufacturers have complied with the demands of the ASA which bases its action on the Advertising Standards whereby "advertisements should neither condone nor incite to violence or anti-social behaviour", "show or advocate dangerous behaviour or unsafe practice" and "contain nothing which is likely to bring the law into disrepute". lt should also be noted that the Independent Broadcasting Authority reviews all advertising before it is screened in order to ensure that it is in conformity with these standards and that, where the other media are concerned, the ASA ensures compliance of motor vehicle advertising with the British Code of Advertising Practice.

Mention should also be made of the steps recently taken in Luxembourg where an agreement was signed in 1986 between the Minister of Transport and FEGARLUX (the garage owners association in Luxembourg), which is similar to the agreement concluded in France but also specifies that the Government and FEGARLUX have agreed to make a regular assessment of its application.

In the Netherlands, the Government and representatives of the car industry have just begun discussions on the preparation of a code of good practice.

In Belgium, manufacturers and importers have concluded an agreement within their trade association with a view to avoiding advertising that conflicts with the aims of road safety.

In the other countries there seem to be no such agreements, either self-disciplinary (among manufacturers) or jointly supervised (manufacturers and public authorities).

Danish legislation has a number of provisions on advertising which concern road safety. Any slogan broadcast by radio or television must be compatible with ensuring safety on the roads and must not encourage dangerous or irresponsible behaviour. A fine may be imposed for any infringement of these rules. The Danish law on marketing lays down general criteria for advertising which also cover newspaper advertising.

In 1986, Spain included an article in its highway code with a view to ensuring that information supplied to users of motor vehicles would not prompt them to drive too fast or recklessly or be conducive to dangerous or any other form of behaviour that would infringe the code. In addition, the 1988 general

law on advertising specifies that advertising liable to give rise to behaviour which might compromise personal safety may be subject to special rules or prior authorisation by the authorities.

In Portugal, advertising that conflicts with the aims of road safety is covered by the general code of advertising practice.

In Switzerland, as a result of a 1985 study, the BPA (Swiss Accident Prevention Bureau) recommends that importers, advertisers and the media should replace the detrimental content of advertising by messages that promote safety on the roads.

To sum up, it is interesting to note that the formal agreements now existing:

1. are by and large not very effectively applied by the professional bodies concerned;

2. do not very often give rise to energetic action by the public authorities in cases where they are not complied with;

3. have not really prevented the maintenance, or even the exacerbation, of certain questionable slogans.

One of the major problems to be resolved is no doubt how to raise this matter to an international level, negotiate an agreement on restraint in the European context and subsequently require American and Japanese manufacturers to comply with it, since the development of cable networks and private television services singularly limits the effectiveness of government intervention. However, the position adopted by the Ministers of Transport of the Twelve in November 1985 with respect to the European Road Safety Year was to invite the Commission to establish the necessary contacts with the manufacturers and importers of motor vehicles and motor-powered two-wheelers in order to get them to abandon any form of advertising that conflicted with the aims of road safety and also to invite the member States to lend their support to the Commission for the purpose of such contacts.

5. Conclusions

It may be objected that there is no proof that this type of advertising has a negative effect on road safety, even though such advertisements might appear frequently (a Swedish study in 1987 -- "Argument i Bilannonser", by S. Dahlstedt of the "Firma Humanteknologi" of Sturefors -- points out that 49.4 per cent of the advertisements provide justification for the performances, and this is the third commercial argument put forward.) It is true that the above-mentioned study by the Swiss Accident Prevention Bureau suggests that these advertisements primarily seem to have an effect on young male drivers who already like to drive fast, so they tend to reinforce attitudes already acquired. However that may be, the means are there to promote cultural and social values entirely in conflict with the requirements of road safety.

It would be wrong to conclude this paper without pointing out that there are fortunately a number of manufacturers who have tried and are still trying to create an image based on concepts of safety and reliability. Nevertheless, the problem of questionable advertising remains and seems to be getting worse, thus calling for an appropriate response.

However, it would be interesting to follow the example of some countries and not restrict the action of the public authorities to the prevention of certain practices but conversely, to make such action more positive by encouraging advertising that promotes road safety. This approach has been adopted in Luxembourg where an annual prize is awarded for the best advertisement concerning road safety, and also in Switzerland where there has been a competition and a prize to promote such advertising since 1986.

IMPROVEMENT OF ROAD SAFETY FOR THE ELDERLY

1991

RESOLUTION No. 91/3 ON THE IMPROVEMENT OF ROAD SAFETY FOR THE ELDERLY

[CEMT/CM(91)15]

The Council of Ministers of Transport of the ECMT, meeting in Antalya, on 22 and 23 May, 1991:

HAVING REGARD to the report on road safety for the elderly;

REFERRING to Resolution No. 54 (1985), Resolution No. 63 (1987), Resolution No. 68 (1989) concerning transport for people with mobility handicaps, as well as to Resolution No. 71 (1990) concerning access for people with mobility handicaps to buses, trains and coaches;

CONSIDERING:

-- that elderly people constitute a large proportion of today's population and that the proportion will continue to increase in the coming decades;

-- that the proportion of total accidents involving elderly people is greater than the proportion of elderly people in the total population;

-- that safety when travelling, irrespective of the means of transport used, is a prerequisite for ensuring the mobility of the elderly and a priority objective of any comprehensive transport policy;

RECOGNISING

-- that the participation of the elderly in traffic is to be considered both for its security aspect and its social dimension related to mobility needs;

-- that decision-makers and traffic planners do not always have sufficient information on the travel requirements of the elderly, the kind of difficulties experienced by them, and the implications from the standpoint of safety;

-- that the measures taken to facilitate travel for the elderly and improve safety also benefit other categories of user;

RECOMMENDS MEMBER COUNTRIES:

Regarding information, education and control of capabilities

1. To encourage information campaigns aimed at drawing the attention of the elderly to traffic problems and risks by means of straightforward, factual and unambiguous messages.

2. To inform all road users of the difficulties experienced by the elderly in traffic and to remind them of their obligations towards such persons.

3. To make medical and health service personnel aware of their obligation to inform the elderly of the

consequences of the physical and physiological changes that occur in the ageing process and may affect their behaviour in traffic.

4. To define principles and methods for testing the capabilities of elderly drivers and to encourage them to take further training courses to improve their theoretical and practical ability.

Regarding infrastructure

5. To give special consideration to the elderly when designing or improving road infrastructures, in particular to plan the routes taken by pedestrians with a view to providing safe conditions by ensuring that traffic lights at pedestrian crossings have sufficiently long phases; to simplify complicated intersections, for example by separating two-way traffic by means of central islands that are easily reached; to plan safe and easy means of access to bus stops.

In the construction and design of vehicles

6. To use technical means to improve the safety of persons boarding and alighting from buses, as well as within the vehicles themselves.

7. To encourage manufacturers to improve and further develop driving aids (power steering, automatic transmission, electrically-controlled windows, etc.) and to design the front sections of vehicles in such a way as to limit the severity of injuries in the event of a collision.

8. To invite bicycles manufacturer to improve the brakes, lighting and reflectors.

In the field of research

9. To further study the means of:

-- determining more precisely the circumstances and risks of accidents among the elderly;

-- better evaluating the relation between the reduction of physical and physiological capabilities and the performances and behaviour of road users;

-- evaluating the role of medical control in the improvement of road safety for the elderly.

INSTRUCTS the Committee of Deputies to monitor the application of this Resolution and report back to it in due course.

REPORT ON THE IMPROVEMENT OF ROAD SAFETY FOR THE ELDERLY

[CEMT/CM(91)15]

Background

During the past decade much attention has been given to the traffic safety of the elderly. An OECD report published in 1985, **"Traffic Safety of Elderly Road Users"**, states:

> "*In just a few decades the developed nations have become almost completely dependent on the existence of effective road transport systems. At the same time lower birth rates and increased longevity in these countries has increased the proportion of elderly people. At present, existing transport systems are not well suited to the needs of the elderly, and their share of traffic accidents is disproportionately large.*"

Briefly, the situation can be described as follows:

-- elderly people constitute a relatively large proportion of today's population, and that proportion will continue to increase over the next several decades;

-- the proportion of elderly people involved in fatal accidents is greater than the proportion of elderly people in the total population;

-- the accident risk factor increases with age;

-- the accident risk factor varies by mode of transport;

-- diminished physical and psychological capability is a natural aspect of ageing which tends to increase the accident risk factor;

-- access to transport is more difficult for the elderly than for other age groups in society, and access decreases as people grow older;

The involvement and behaviour of elderly people in traffic changes gradually as a result of ageing. The ageing process itself involves successive impairment of physiological and psychological capabilities. Yet, our intensive and complex traffic environment places greater demands on an individual's physical and psychological capacities. It is becoming increasingly difficult for the elderly to manage the demands of traffic.

Greater life expectancy in conjunction with a falling birthrate is leading to appreciable growth in the percentage of elderly persons in society. At the same time, the changes and improvements in living standards (health, well-being, economic security) suggest that, despite some reduction in physical and physiological capabilities as a result of ageing, a greater proportion of the elderly will remain physically, socially and economically active so there will be greater demand for mobility among these persons.

Differences in access to transport, and progressively impaired physiological and psychological

capabilities, influence behaviour and traffic accident risk factors among elderly citizens. As people grow older they depend more on the transport alternatives offered by society, or on their own abilities as a pedestrian. We can establish that those who have the least ability to manage our complicated traffic environment must often deal with that environment as unprotected pedestrians trying to reach public services and activities, or public transport.

Deficiencies in the present traffic/transport system can impact extensively on the individual. Problems and deficiencies can be perceived to be so great that one dares not interact with traffic, thus seriously limiting ones mobility. Deficient transport systems thereby increase isolation in society, which in turn increases the elderly's dependency on social services at home or special transport.

There is also another social aspect related to this problem area. Older people are generally more frail and thus tend to be injured more seriously in accidents. A simple accident, e.g. if an older pedestrian is injured in a fall caused by deficient sidewalk maintenance, might very well change the entire life situation for the individual. What appears to be a simple accident might have more serious consequences and result in more severe, even permanent, disabilities which mean that the person cannot move about on his own and needs hospital care.

The opportunity to maintain a mobile and active life as one becomes older is important to health and well-being. Daily walks, a social life rich in contact with friends, and participation in different activities has a positive influence on a person's state of health. Accordingly, it is important that the elderly should be able to move about safely and in good conditions and that the means of transport should be adapted to their requirements.

The above-mentioned OECD report sets out the main arguments for paying special attention to the traffic safety problems of the elderly and cautions against the tendency to use restrictions as an easy solution to these problems.

The same OECD report highlights the need for future traffic planning to address those population groups who have the most difficulty in dealing with today's complex traffic situation.

> "*Any new environmental measure, whether to improve safety, traffic fluidity, habitat or community amenities, must be designed with the needs of the elderly in mind. At the very least it should not have the effect of aggravating their traffic safety problems; at best it should serve to reduce them and whenever possible promote the mobility of this population group.*"

Lastly, the OECD report clearly states that "the road accidents of the elderly should be considered as indicators of deficiencies in the existing road traffic system to which the elderly are particularly vulnerable, but which may constitute some degree of risk to any road user. It follows that the provision of safety improvements for the elderly will benefit other age groups as well".

Statistics from ECMT Member countries

The ECMT member countries were asked to respond to a questionnaire for the purpose of determining the current status of involvement in accidents (based on police-reported data) and travel habits of the elderly, methods used to gather accident data, and current or planned actions to increase traffic safety for the elderly or improve their transport situation. This section sets out the findings of the survey. Fifteen countries replied: Australia, Austria, Belgium, Denmark, Finland, Great Britain, Greece, the Netherlands, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the Federal Republic of Germany. Luxembourg returned the questionnaire without answering to the questions.

a) Demographics

The size of the population in the countries responding differs considerably, ranging from about 60 million in the Federal Republic of Germany (1987) to 4 million in Norway (Table 1). The percentage of people 65 years and older (Table 2) varied between 11 per cent (Australia) and 18 per cent (Sweden). The differences were more pronounced when comparing the age group 75 years and older, which was 4 per cent in Australia and 8 per cent in Sweden.

Most countries submitted population projections for the years 2000 and 2010 (Table 1). Many countries expect marginal increases up until the year 2000, and some even project decreases by year 2010, as compared with 1987. Australia, however, expects increases of about 20 per cent and 35 per cent respectively, compared with 1987. Spain and Sweden, among others, project an increase of 5 per cent prior to year 2000 followed by slower population growth prior to year 2010. Netherlands's projected increase falls in between that of Australia, Spain and Sweden.

According to projections for years 2000 and 2010, most countries expect an increase among the age groups 65 years and older, and 75 years and older (Table 2). However, the increase is generally only one or two percentage points. The countries which reported a high percentage of elderly in 1987 will, in relative figures, still be among the leaders some years into the 2000s. One exception is Italy, which projects a rapid increase among both age groups (5 and 3 percentage points respectively). Italy, according to this information, will have one of the highest percentages of elderly of all countries by year 2010 (20 per cent of the population will be over 65 years and 9 per cent over 75 years). Germany reports the highest share of people 65 and older (21 per cent)

b) Licensed Drivers

About three quarters of the responding countries submitted information concerning licensed drivers in the population in 1987 (Table 3). The Federal Republic of Germany and Great Britain reported the most licensed drivers, 32 and 27 million respectively, while Greece reported only 1.5 million. Only Belgium and Sweden ventured prognoses for the future. Belgium expects the number of elderly licensed drivers to increase by 3 per cent during the next decade, while Sweden expects a 50 per cent increase.

Sweden indicated the highest percentage of licensed drivers among the population, nearly 60 per cent. Most countries which submitted information reported that about half of their populations possessed a driver's license. However, in southern Europe a lower percentage of the population were licensed drivers, e.g., 33 per cent in Spain and only 15 per cent in Greece.

Most countries also provided information on licensed drivers in the older age groups (Table 4). Great Britain reported the highest percentage of elderly licensed drivers in the population (17 per cent)

while Spain, Greece, and Switzerland the lowest percentage (4 per cent). Consistently, all countries except Great Britain reported that the percentage of elderly licensed drivers was lower than the percentage of elderly people in the population, and, particularly, much lower than for the population as a whole.

Among the Nordic countries, Finland reported the fewest licensed drivers among the elderly (18 per cent among those 65 years and older, and 7 per cent among those 75 years and older). Likewise, we found the fewest elderly licensed drivers in Spain (10 per cent and 3 per cent respectively) and Greece (4 per cent and 2 per cent respectively). However, these countries, unlike Finland, have a low overall percentage of licensed drivers. A relatively large percentage of the elderly in Sweden and Denmark have a driver's license. In Sweden, 45 per cent of those 65 years and older are licensed drivers, while the corresponding figure in Denmark is 37 per cent. Of those 75 years and older, 31 per cent are licensed drivers in Sweden and 21 per cent in Denmark.

c) Mode of Transport

Knowledge about the distribution of transport among various types of road users seems to be limited. Half of the countries submitted information, and only half of these submitted information for 1987. Information was generally not comparable since it seldom addressed the same age groups. No respondents reported on their forecasts regarding further developments over the coming decades.

According to the above-mentioned OECD report, it was found in particular that car journeys, whether as driver or passenger, are less frequent as people grow older, although they account for the largest proportion of the kilometres covered each year. The elderly are making greater use of public transport and also walking more. Journeys on two-wheeled vehicles are made relatively infrequently.

d) Casualties in road accidents and risk in traffic

Many countries provided information on road accident casualties, and these data are set out below and in Tables 5 to 10. It should be borne in mind however that, as with any statistical comparison, the figures given in these tables take no account of some major external factors such as traffic density, distances travelled, degrees of urban development and car ownership ratios. Italy and Greece provided figures on accidents in general. The material from Greece shows that the elderly are involved in 8 per cent of all accidents. Italy reports that those aged 65 and over are involved in 20 per cent of all fatal accidents and in 7 per cent of traffic accidents causing injuries.

Among the countries reporting on the number of persons involved in accidents (Table 5), Denmark, Sweden and Finland reported the highest percentage of injured aged 65 and over (10 per cent) followed by France (9 per cent), Switzerland, Norway and the Netherlands (8 per cent in each case), while Spain indicated the lowest (5 per cent). Three countries (Denmark, France and Sweden) reported that people aged 75 and over accounted for 4 per cent of all persons injured in traffic.

Finland, Switzerland, and Sweden indicated the greatest percentage elderly killed in traffic accidents (29 per cent) (Table 6). Spain and Portugal reported the lowest percentage of elderly killed in road traffic accidents (14 per cent). Switzerland also reported the highest percentage of persons 75 years and older killed in traffic accidents (18 per cent), while Belgium and France reported the lowest figure (10 per cent).

Tables 6-10 show the five most common categories of injury. The tables do not show, however, the total number of traffic fatalities during 1987. (All categories are not included in the tables).

If we look at different groups of road users (Table 8), elderly drivers comprise a comparatively large percentage of those killed in road traffic accidents in Sweden and Denmark (19 per cent and 18 per cent respectively) and a relatively low percentage in Spain (4 per cent). Here, concerning the 75 years and older age group, Finland reported the lowest percentage (3 per cent), while Denmark and Great Britain reported the highest (7 per cent).

The largest shares of fatalities accounted for by pedestrians aged over 65 are reported in Switzerland and Sweden (59 per cent and 54 per cent respectively). Portugal reported the lowest percentage (32 per cent). Concerning pedestrian deaths, persons 75 years and older constitute a particularly vulnerable group, especially in Switzerland, Sweden and Germany where they account for 44 per cent, 38 per cent and 36 per cent respectively of all pedestrian fatalities.

The percentage of elderly who are injured in traffic (Table 10) is consistently lower than the percentage killed. The elderly account for the largest share of injured pedestrians. In Denmark, this percentage is 30 per cent, in Switzerland it is 26 per cent and in Sweden 25 per cent. The same countries also report the greatest share of injured among the most elderly, 18 per cent, 17 per cent, and 14 per cent respectively. Great Britain reported the lowest percentage (14 per cent for persons 65 years and older, as well as for persons 75 years and older (7 per cent).

Eight countries submitted information on different risk measures (Table 11), including either the risk of being involved in an accident, or the risk of being injured in traffic. However, different measures of risk were used in reporting, e.g. kilometres travelled, number of passenger-or person-kilometres per year, and even the number of inhabitants. Consequently, it was impossible to compare levels of risk among the reporting countries.

The above description of the accident situation in different countries is based on police-reported accidents. Seven countries have access to other types of information concerning road traffic accidents. The most common is hospital-reported traffic accident information. This material is generally collected by a few hospitals for a limited time. In Australia, official material from preliminary investigations is used, and in the Federal Republic of Germany, an investigation is conducted at the scene of the accident to add further information regarding the circumstances of the accident.

The various figures show just how important the problem of the safety of the elderly in traffic is in every country. Whether they are pedestrians, car drivers or users of public transport, the elderly have safety problems with every mode of transport, although no particular mode can be singled out concern, so the remedial action must be taken in all sectors.

Measures taken or proposed

Measures that may improve the safety of the elderly in road traffic are to be found in connection with the following in particular:

-- regulations relating to driving licences;
-- education and information;
-- road infrastructure;

-- vehicle design;
-- social environment.

Regulations

Owing to the continuous process of ageing in which the psychological and physiological capabilities are gradually impaired, especially the sensory capabilities considered essential for driving (sight, reaction time, hearing), ECMT Member countries have, as a general rule, introduced legislative measures and controls in connection with the issue, renewal or withdrawal of driving licences according to category and the driver's age. In a number of countries drivers have to have periodical medical check-ups after reaching the age of 60 or 70 in order to retain a valid driving licences. In other countries this periodical medical check-up is required independently of age, while some countries insist on the check-up only if the authorities have previously recorded a lapse on the part of the driver. A national commission has been set up in Sweden to review driver instruction. Among other things it is responsible for determining whether drivers above a certain age should be required to have some king of further training or take a driving test.

In some countries, moreover, drivers are required by law to show extra care vis-à-vis the elderly.

Measures relating to the provision of education, information and training

In contrast with measures concerning the road environment and vehicle design, these measures can be used to bring direct influence to bear on human behaviour, although special attention must be paid to the way in which messages are presented and to the various means of disseminating them. While the use of traditional means of communication -- mass media, advertising panels, brochures and other publications -- are one way of providing advice and trying to change behaviour, the so-called group methods tried out in some countries have proved particularly effective. In the latter case, seminars and discussions, backed-up by film or slide projections, are organised for the elderly in clubs, retirement homes, etc.

Whatever the approach adopted, the messages addressed to the elderly must be straightforward, specific and unambiguous. Although it will sometimes be necessary to draw the attention of elderly drivers or pedestrians to the mistakes they make, the messages addressed to them must be positive and so be taken as a useful and practical suggestion that can be directly put into practice.

Safety campaigns should not moreover be addressed solely to the elderly but also to other groups of road users, since it is important that they should be aware of the difficulties experienced by the elderly in traffic and, in particular, that they should adopt respectful and careful behaviour towards them.

It would also be desirable to channel the information towards all those looking after the elderly (social workers, members of health care units, etc.) so that they in turn can offer individual advice and information to the elderly on ways in which changes in their physical and mental condition may affect their behaviour in road traffic.

Lastly, steps should be taken to draw up and introduce further training programmes designed more particularly for the elderly.

Measures relating to road infrastructure

Studies of accidents involving the elderly have shown that it is necessary to take better account of their needs and capabilities when designing or improving the road and urban environment so as to reduce the problems that they experience in road traffic and promote their mobility. Briefly, the principles adopted or recommended in some countries to improve the safety of elderly road users are as follows:

-- the reduction of speed limits in residential areas and shopping streets used frequently by the elderly and also in places in which complicated manoeuvres are called for, thus giving elderly drivers enough time to obtain information and take decisions;

-- the elimination of situations that become complex in dense or fast traffic by introducing one-way systems, separating traffic flows, etc.;

-- the establishment of information systems (signs and signals, road markings) that are straightforward, coherent and easily visible;

-- the creation of roadside or off-road bicycle paths;

-- the provision of better lighting in built-up areas and at sensitive locations on major roads;

-- the design of infrastructure in such a way as to take greater account of the reduced mobility of the elderly (different levels, traffic light phases, lengths of carriageway to cross);

-- the provision of safe and easy means of access to bus stops, etc.

It should be pointed out that many measures are at the same time conducive to the safety of both pedestrians and drivers. The above principles are, moreover, to the advantage of all road users. However, the criteria for implementing the measures may differ in some cases if particular attention is being focused on the elderly.

Measures relating to vehicle design

From both the ergonomic and passive safety standpoints, vehicle design should by and large be based on the characteristics and limitations of potential drivers.

The task of elderly or disabled drivers can be facilitated by a number of driving aids (automatic transmission, power steering, electrically-controlled windows, etc.) that are usually available on higher-priced cars, so it would clearly be an advantage if they were also available on cars in the medium engine-capacity range at a reasonable price.

Further research should also be carried out with a view to designing cars with less aggressive front sections so as to reduce the severity of injuries if pedestrians are knocked down. Improvements should likewise be made in the safety of persons boarding and alighting from buses (a limit on the height of the bus floor above the level of the waiting area, prevention of premature closing of doors, etc.), as well as within the vehicles themselves. Lastly, standards should be adopted for bicycles to ensure that they are

safe to use when marketed (the standards should cover braking systems, lighting and reflecting equipment, and make provision for the elimination of any dangerous fittings).

Here, too, most of the measures mentioned, while of specific use to the elderly, are largely conducive to the safety of other users.

Measures relating to the social environment

To sum up and give a more complete picture of the situation, it should also be pointed out that it would be desirable to increase the frequency and accessibility of public transport services; as and when required, so that the elderly might dispense with the use of their cars, when necessary, without reducing their mobility and, accordingly, the extent to which they participate in social life. Similarly, the establishment of a network of special transport services for all groups in the population which cannot use ordinary public transport vehicles would be of very considerable value.

Reference to previous ECMT recommendations

No previous ECMT documents which directly discuss the traffic safety of the elderly are available. However, the questions at hand have been discussed in other contexts, notably by the ad-hoc Group on Transport for People with Mobility Handicaps.

Since this Group began its work in 1985, four Resolutions have been adopted by the Council of Ministers: Resolutions No. 54 (1985), No. 63 (1987), No. 68 (1989) and No. 71 (1990). Several ECMT publications are also available on international practice and policy in this area. These publications note that a significant proportion of mobility handicapped people are elderly and also that a growing number and proportion of elderly people have mobility handicaps. The ECMT Resolutions emphasise the importance of improving access to the entire transport chain for people with mobility handicaps. Throughout the work, it has been seen that improvements made for people with mobility handicaps often benefit all travellers, a point also made in the present report.

Conclusions

Notably, it is to be hoped that the involvement of the elderly in road accidents can be reduced by taking measures in the different spheres mentioned in Chapter 3. All such measures are based on the fundamental fact that the most effective means of reducing the risks to which the elderly are exposed when travelling is not to restrict their participation in traffic by excluding them from particular sectors but, on the contrary, to improve the safety aspects of each mode of transport used.

As shown by the survey of ECMT Member countries, it is true that most of them have already taken steps to improve the situation of the elderly in traffic in general. However, since we are moving towards a society in which the elderly should account for a larger proportion of the total population, there is an urgent need for Member countries to continue to make even greater endeavours and adapt them to the changing situation so as to ensure that the elderly are safer on the roads, thus at the same time also helping to achieve an overall improvement in safety conditions in most cases.

Annex

FINDINGS OF THE SURVEY BASED ON THE QUESTIONNAIRE SENT TO ECMT MEMBER COUNTRIES ON ROAD SAFETY FOR THE ELDERLY

Tables 1 to 11

Table 1. **Population 1987, ECMT Countries**
(in millions)

COUNTRY	1987			Forecast for					
				2000			2010		
	Age group			Age group			Age group		
	>65	>75	All	>65	>75	All	>65	>75	All
Australia	1.742	0.666	16.263	2.393	1.087	19.699	2.929	1.285	21.802
Austria	1.113a	0.552a	7.576	1.327a	0.414a	7.676	.427a	0.429a	7.583
Belgium	1.530b	0.639b	9.876b	1.690	0.728	9.893	1.732	0.858	9.713
Denmark	0.786	0.337	5.125	0.797	0.387	5.176	0.848	0.370	5.056
Finland	0.650	0.277	4.939	0.742	0.322	5.017	0.833	0.359	5.979
France	7.572	3.683	55.750	-	-	-	-	-	-
Great-Britain	8.624	3.699	55.355	10.367fg	4.296fg	57.275fg	-	-	-
Greece	1.357	0.593	9.989	1.599	0.547	10.163	-	-	-
Netherlands	1.805	0.755	14.615	2.118	0.929	15.718	2.359	1.012	16.103
Italy	7.664c	3.239c	57.290c	10.512d	4.595d	57.455d	11.201e	5.139e	56.809e
Luxembourg	-	-	-	-	-	-	-	-	-
Norway	0.668	0.280	4.174	0.678	0.350	4.373	0.701	0.319	4.437
Portugal	1.217	0.476	9.744	-	-	11.141	-	-	-
Spain	4.812	1.975	38.832	6.143	2.495	40.747	6.260	2.948	41.194
Sweden	1.493b	0.653b	8.414b	1.506	-	8.786	1.643	-	8.910
Switzerland	0.947	0.433	6.567	1.079	0.492	6.830	1.224	0.549	6.914
Germany	9.273	4.328	61.141	10.494	-	60.484	12.101	-	57.803

a: only age group 65 resp. 75
b: 1987-12-31
c: 1987-01-01
d: 2003
e: 2008
f: 2001
g: includes women aged 60-64 years

Table 2. **Ratio of elderly in the population 1987, ECMT countries (in millions)**

COUNTRY	1987		2000		2010	
	Age group		Age group		Age group	
	>65	>75	>65	>75	>65	>75
Australia	10.7	4.1	12.1	5.5	13.4	5.9
Austria	16.0a	7.5a	17.3a	5.4a	18.6a	5.6a
Belgium	15.5	6.5	17.1	7.4	17.8	8.8
Denmark	15.3	6.6	15.4	7.5	16.8	7.3
Finland	13.2	5.6	14.8	6.4	16.7	7.2
France	13.5	6.6	-	-	-	-
Great Britain	15.6	6.7	18.1bc	7.5c	-	-
Greece	13.6	5.9	15.7	5.4	-	-
Netherlands	12.3	5.2	13.5	5.9	14.6	6.3
Italy	13.4	5.7	18.3d	8.0d	19.7e	9.0e
Luxembourg	-	-	-	-	-	-
Norway	16.0	6.7	15.5	8.0	15.8	7.2
Portugal	12.5	4.9	-	-	-	-
Spain	12.4	5.1	15.1	6.1	15.2	7.2
Sweden	17.7	7.8	17.1	-	18.4	-
Switzerland	14.4	6.6	15.8	7.2	17.7	7.9
Germany	15.2	7.1	17.4	-	20.9	-

a: Calculated from figures given in other context
b: Includes women aged 60-64 years
c: 2001
d: 2003
e: 2008

Table 3. **Number of licensed drivers 1987, ECMT countries (in millions)**

COUNTRY	Age group		
	>65	>75	All
Australia	-	-	-
Austria (1983)	0.188	-	2.893
Belgium	-	-	5.003
Denmark	0.292[a]	0.072[a]	2.704[a]
Finland	0.118	0.020	2.500
France	-	-	-
Great-Britain	3.049[b]	1.398[c]	26.638
Greece	0.059[d]	0.013[d]	1.480
Netherlands	0.575[e]	-	7.665[e]
Italy	-	-	-
Luxembourg	-	-	-
Norway	0.218[f]	-	2.253[f]
Portugal	-	-	-
Spain	0.460	0.051	12.791
Sweden	0.674	0.205	4.923
Switzerland	0.150[ga]	-	3.500[a]
Germany (1985)	3.841[hi]	-	31.576[h]

a: Based on estimated figures
b: 61-70 years old
c: >71 years old
d: Calculated from figures given in other context
e: Only for motorcars
f: Number of driving licenses
g: >70 years old
h: Number of driving licenses class 2 or 3
i: >60 years old

Table 4. **Ratio of licenced elderly drivers 1987, ECMT countries**

COUNTRY	of all operators'		Within their own age group	
	Age group		Age group	
	>65	>75	>65	>75
Australia	-	-	-	-
Austria (1983)	6.5	-	20.2	-
Belgium	-	-	-	-
Denmark	10.8[a]	2.7[a]	37.2[a]	21.3[a]
Finland	4.7	0.8	18.2	7.1
France	-	-	-	-
Great Britain	16.7[b]	5.2[c]	-	-
Greece	4.0[d]	0.8[d]	4.3	2.1
Netherlands	7.5	-	31.9	-
Italy	-	-	-	-
Luxembourg	-	-	-	-
Norway	9.7	-	32.6[d]	-
Portugal	-	-	-	-
Spain	3.6	0.4	9.6	2.6
Sweden	13.74	4.2	45.1	31.4
Switzerland	4.3[ae]	-	23.0[ae]	-
Germany (1985)	12.2[b]	-	31.2[b]	-

a: Based on estimated figures
b: 61 years old
c: 71 years old
d: Calculated from figures given in other context
e: 70 years old

Table 5. **Injured in traffic accidents 1987, ECMT countries**

COUNTRY	Injured in traffic accidents			Ratio of elderly in traffic accidents (%)	
	Age group			Age group	
	>65	>75	All	>65	>75
Australia	-	-	-	-	-
Austria	4 457	1 898	58 664	7.6	3.2
Belgium	5 200	1 885	83 856	6.2	2.2
Denmark	2 043	819	20 616	9.9	4.0
Finland	1 065	424	10 808	9.8	3.9
France	17 696	7 993	193 072	9.1	4.1
Great Britain	23 945	10 189	311 473	7.7	3.3
Greece	-	-	-	-	-
Netherlands	4 057	1 598	49 189	8.2	3.2
Italy	-	-	-	-	-
Luxembourg	-	-	-	-	-
Norway	915	341	11 144	8.2	3.0
Portugal	3 674	-	54 517	6.7	-
Spain	7 786	2 765	153 387	5.1	1.8
Sweden	2 122	830	20 532	10.3	4.0
Switzerland	2 492	1 087	29 339	8.5	3.7
Germany	28 871	12 307	424 622	6.4	2.7

Table 6. **Killed in traffic accidents in 1987 (car drivers and passengers, bicycle/moped users, pedestrians and public transportation users)**

ECMT countries

COUNTRY	Killed in traffic accidents			Percentage ratio of elderly in traffic accidents	
	Age group			Age group	
	>65	>75	All	>65	>75
Australia	-	-	-	-	-
Austria	203	-	1 138	17.8	-
Belgium	360	187	1 844	19.5	10.1
Denmark	168	82	602	27.9	13.6
Finland	154	81	525	29.3	15.4
France	1 747	959	10 028	17.4	9.6
Great Britain	1 162	676	5 262	27.3	15.9
Greece	-	-	-	-	-
Netherlands	342	169	1 381	24.8	12.2
Italy	-	-	-	-	-
Luxembourg	-	-	-	-	-
Norway	77[a]	41[a]	344[a]	22.4[a]	11.9[a]
Portugal	414[c]	-	3 029	13.7[c]	-
Spain	688	-	5 051	13.6	-
Sweden	207	107	722	28.7	14.8
Switzerland	223[b]	137[b]	763[b]	29.2[b]	18.0[b]
Germany	1 570	962	6 875	22.8	14.0

a: Taxi passengers are included
b: Taxi drivers and taxipassengers are included
c: > 64 years old
d: 65 years and over

Table 7. **Killed in traffic accidents by mode of transportation 1987, ECMT countries**

COUNTRY	Car drivers			Car passengers			Bicycle/moped user			Pedestrians			Public Transportation users		
	>65	>75	All	>65	>75	All	>65	>75	All	>65	>75	All	>65	>75	All
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	34	-	497	27	-	247	40	-	173	102	-	220	-	-	1
Belgium	104	44	751	38	18	344	75	37	417	142	88	327	1	-	5
Denmark	41	16	230	30	13	107	34	15	120	62	37	141	1	1	4
Finland	20	5	161	18	9	117	56	32	111	60	35	136	-	-	1
France	509	225	4 134	362	191	2 303	258	130	1 980	618	413	1 592	-	-	19
Great-Britain	208	94	1 327	136	77	879	56	23	338	757	478	1 703	5	4	15
Greece	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	85	34	518	54	21	251	133	74	439	70	40	172	-	-	1
Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	23	7	154	11[a]	6[a]	89[a]	11	7	31	32	21	70	-	-	-
Portugal	99[d]	-	1 155	44[d]	-	496	67[d]	-	733	204[d]	-	645	-	-	-
Spain	74	-	1 847	152	-	1 556	62	-	493	378	-	1 080	22	-	75
Sweden	65	20	334	26[b]	9[b]	162[b]	38	24	82	78	54	144	-	-	-
Switzerland	33[c]	15[c]	292[c]	17[c]	8[c]	121[c]	44[c]	20[c]	134[c]	129[c]	94[c]	216[c]	-	-	-
Germany	239	102	2 862	170	86	1 388	310	172	940	851	602	1 685	-	-	-

a: Bus passengers and taxi passengers are included
b: Bus passengers are included
c: Taxi drivers and taxi passengers are included
d: >64 years old

Table 8. **Ratio of elderly killed in traffic accidents by mode of transportation 1987, ECMT countries**

COUNTRY	Car drivers		Car passengers		Bicycle/moped users		Pedestrians		Public transport users	
	>65	>75	>65	>75	>65	>75	>65	>75	>65	>75
Australia	-	-	-	-	-	-	-	-	-	-
Austria	6.8	-	10.9	-	23.1	-	46.4	-	-	-
Belgium	13.8	5.9	11.0	12.1	18.0	8.9	43.4	26.9	20.0	0
Denmark	17.8	7.0	28.0	7.7	28.3	12.5	44.0	26.2	25.0	25.0
Finland	12.4	3.1	15.3		50.4	28.8	44.1	25.7	0	0
France	12.3	5.4	13.7	8.3	13.0	6.5	38.8	25.9	-	-
Great Britain	15.7	7.1	15.5	8.8	16.6	6.8	44.4	28.1	33.3	26.7
Greece	-	-	-	-	-	-		-	-	-
Netherlands	16.4	6.6	21.5	8.4	30.3	16.9	40.7	23.3	-	-
Italy	-	-	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-	-	-
Norway	14.9	4.5	12.4	6.7	35.5	22.6	45.7	30.0	-	-
Portugal	8.6[ab]	-	8.9[ab]	-	9.1[ab]	-	31.6[ab]	-	-	-
Spain	4.0	-	9.8	-	12.6	-	35.0	-	29.3	-
Sweden	19.5	6.0	16.0	5.6	46.3	29.3	54.2	37.5	-	-
Switzerland	11.3	5.1	14.0	6.6	17.5	7.4	58.8	43.5	-	-
Germany	8.4	3.6	12.2	6.2	33.0	18.3	50.5	35.7	-	-

a: Calculated from figures given in other context.
b: > 64 years old.

Table 9. **Injured in traffic accidents by mode of transportation 1987, ECMT countries**

COUNTRY	Car drivers			Car passengers			Bicycle/moped users			Pedestrians			Public transportation users		
	>65	>75	All	>65	>75	All	>65	>75	All	>65	>75	All	>65	>75	All
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	689	-	19294	847	-	12188	895	-	12961	1419	-	5963	77	-	171
Belgium y	351	100	6457	274	107	3555	332	129	4813	416	209	1883	5	2	37
z	1214	319	26203	927	313	16285	646	214	15069	574	276	3999	35	14	500
Denmark y	197	63	1935	119	48	1220	220	72	2092	343	205	1052	25	14	38
z	129	50	1485	103	36	959	88	33	1313	69	44	332	9	6	32
France	5155	1864	86205	2806	4731	18135	1923	758	57616	5667	3333	29760	173	86	1356
Great Britain y	1114	375	15840	1008	387	11040	309	117	7044	2942	1592	15957	313	147	811
z	4203	1349	74843	4288	1572	55539	768	255	27987	4812	2451	39793	2267	914	8262
Finland	159	52	3247	171	58	2559	323	127	2165	352	167	1459	18	4	137
Greece	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands y	320	103	3535	269	86	2055	777	320	5821	355	199	1543	10	4	22
z	504	150	7726	408	142	4995	1001	390	17343	320	168	2488	64	24	168
Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	269	87	4291	241x	74x	3257x	96	32	1456	291	143	1270	-	_	-
Portugal	1040+	-	27219	803+	-	17136	649+	-	18959	1831+	-	10162	-	-	-
Spain	1157	-	44344	2250	-	47715	526	-	18203	3337	-	18139	249	-	1509
Sweden y	196	67	1962	151°	60°	1328°	136	55	860	214	126	701	-	-	-
z	599	177	7174	363	125	3780	208	84	2077	237	131	1111	-	-	-
Switzerland	482*	137*	8436*	484*	184*	5039*	504	173	6674	842	535	3221	-	-	-
Germany y	1552	475	35439	1555	623	19797	2517	1012	19919	4289	2649	17165	-	-	-
z	4111	1105	128249	4350	1488	73133	3330	1139	51419	3760	1996	24386	-	-	-

x: bus passengers and taxi passengers are included
*: taxidrivers and taxi passengers respectively are included
°: bus passengers are included
y: severely injured
z: slightly injured
+: >64 years old

Table 10. **Ratio of elderly injured in traffic accidents by mode of transportation 1987, ECMT countries**

COUNTRY	Car drivers		Car passengers		Bicycle/moped users		Pedestrians		Public transport users	
	>65	>75	>65	>75	>65	>75	>65	>75	>65	>75
Australia	-	-	-	-	-	-	-	-	-	-
Austria	3.6	-	6.9	-	6.9	-	23.8	-	45.0	-
Belgium	4.8	1.3	6.1	2.1	4.9	1.7	16.8	8.2	7.4	3.0
Denmark	9.5	3.3	10.2	3.9	9.0	3.1	29.8	18.0	48.6	28.6
Finland	4.9	1.6	6.7	2.2	14.9	5.9	24.1	11.4	13.1	2.9
France	5.9	2.1	15.4	2.6	3.3	1.3	19.0	11.2	12.7	6.3
Great Britain	5.9	1.9	8.0	2.9	3.1	1.1	13.9	7.3	28.4	11.7
Greece	-	-	-	-	-	-		-	-	-
Netherlands	7.3	2.2	9.6	3.2	7.7	3.1	16.7	9.1	38.9	14.7
Italy	-	-	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-	-	-
Norway	6.3	2.0	7.4	2.3	6.6	2.2	22.9	11.3	-	-
Portugal	3.8[ab]	-	4.7[ab]	-	3.4[ab]	-	18.0[ab]	-	-	-
Spain	2.6	-	4.7	-	2.9	-	18.4	-	16.5	-
Sweden	8.6	2.7	10.1	3.6	11.7	4.7	24.9	14.2	-	-
Switzerland	5.7	1.6	9.6	3.7	5.3	1.7	26.1	16.6	-	-
Germany	3.5	1.0	6.4	2.3	8.2	3.0	19.4	11.2	-	-

a: Calculated from figures given in other context
b: > 64 years old

Table 11. **Different measures of traffic accident risk 1987, ECMT countries**

	Australia /107 km travelled			Finland /105 inhabitants			Netherlands /109 passengers/km			Italy	Norway (1985) /106 persons/km			Sweden /106 km			Switzerland /104 persons/an			Germany a) /104 inhabitants b) /106 km		
	>65	>75	Tous	>65	>75	Tous	>65	>75	Tous	65	65-74	55-74	13-74	65-74	75-84	Tous	65-74	>75	Tous	>65	>75	Tous
Risk to be killed	-	-	-	24.6	29.6	11.8	23	-	9	19%	-	-	0.011	0.12	0.39	0.15	1.8	3.4	1.4	a) 1.73	a) 2.27	a) 1.3
Risk to be injured	-	-	-	163	152	218	270	-	309	6%	-	-	0.27	1.06	3.07	2.77	27.6	26.4	47.8	a) 29.4	a) 26.17	a) 69.45
Risk to be killed:																						
Car drivers	≈0.2	≈0.5	0.13	-	-	-	21	-	8	9%	0.011	-	0.007	0.011	0.077	0.016	0.53	0.56	0.66	b) 0.15	-	b) 0.010
Car passengers	≈0.5	≈0.8	0.12	-	-	-	11	-	5	13%	-	0.010	0.008	0.006	0.016	0.006	-	-	-	0.022	-	0.011
Bicycle/moped users	4.95 1.47	- -	0.56 0.27	-	-	-	111	-	35	24%	-	0.162	0.038	0.13	0.65	0.09	0.61	0.51	0.11	*b) 0.571	-	*b) 0.072
Pedestrians	3.23y 2.80y	11.83z 4.86z	2.36 1.26	-	-	-	108	-	53	46%	-	0.059	0.028	0.07	0.20	0.05	0.65	2.3	0.3	b) 0.276	-	b) 0.086
Public transport users	-	-	-	-	-	-	0	-	0	2%	-	-	-	-	-	-	-	-	-	-	-	-
Risk of injury:																						
Car drivers	-	-	-	-	-	-	203	-	164	4%	0.187	-	0.224	0.21	0.91	0.44	12.7	7.8	22.5	b) 0.224	-	b) 0.418
Car passengers	-	-	-	-	-	-	144	-	146	5%	-	0.321	0.310	0.13	0.15	0.16	-	-	-	b) 0.518	-	b) 0.522
Bicycle/moped users	-	-	-	-	-	-	1481	-	1824	6%	-	1.843*	1.434	1.11	4.11	1.37	7.7	4.6	4.5	*b) 6.443	-	*b) 3.815
Pedestrians	-	-	-	-	-	-	1038	-	775	21%	-	0.920	0.634	0.57	1.66	0.65	6.1	13.0	5.5	b) 2.097	-	b) 1.66
Public Transport Users	-	-	-	-	-	-	20	-	10	19%	-	-	-	-	-	-	-	-	-	-	-	-

DEVELOPMENT OF ROAD SAFETY POLICIES

1992

RESOLUTION No.92/3 ON DECENTRALISED ROAD SAFETY POLICIES

[CEMT/CM(92)4 REV]

The Council of Ministers of Transport of ECMT, meeting in Athens on 11 and 12 June 1992,

Having regard to the report on trends in road safety policies,

BEARING IN MIND all the Resolutions adopted by ECMT in connection with the orientation of road safety policies, more particularly Resolution No. 48 (1986) on ways of influencing human behaviour with a view to improving road safety and Resolution No. 55 (1989) on road safety.

BELIEVING that the number of road accident casualties in ECMT Member countries is unacceptable,

NOTING:

-- that the policies pursued in most of the member countries since the early 1970s have led to a downtrend in numbers of both road accidents and casualties;

-- that these policies, which had previously focused primarily and individually on regulatory measures, road infrastructure and vehicle safety, had subsequently begun to integrate all these aspects;

-- that the structures set up and the degree of central government involvement in shaping and conducting these policies differs from one country to another and that no single model can be recommended as valid for all;

CONSIDERING:

-- that it is a prerequisite for an effective policy to mobilise all concerned -- especially those closest to the public as road users;

-- for the purpose of conducting a diversified and co-ordinated programme of action;

-- that the policies currently adopted in many countries do satisfy this requirement by means geared to the relevant administrative structures and have shown their effectiveness in the light of the results achieved;

RECOMMENDS the Member countries to pursue and step up their efforts to prevent road accidents, and in particular:

-- to set an attainable but ambitious objective in quantitative or qualitative terms on which the relevant measures can be focused;

-- to take any legislative measures that may still be called for;

-- to make the concern with road safety an issue of national importance and a part of general transport policy;

-- to promote a range of measures to change user behaviour by means of education, training and information but also by means of an effective policy of enforcement and penalties, while at the same time continuing to improve both infrastructure and vehicles, due account being taken of any interaction between these diverse measures;

-- to identify all the various partners from national down to local level, including elected representatives, administrations and the private sector, who may participate in these efforts to prevent road accidents;

-- to enable these bodies to work together, each at its own level and with respect to its own responsibilities and areas of concern, in order to draw up and implement a diversified and co-ordinated action programme;

-- to establish the structures whereby all concerned can be mobilised and experience may be exchanged;

-- to develop instruments for monitoring and assessing these policies.

COVER NOTE ON DEVELOPMENT OF ROAD SAFETY POLICIES

CEMT/CM(92)4/REV

Following an international seminar on decentralised road safety policies which was held in Aix-en-Provence in October 1986 in the context of the EEC's Road Safety Year, the Road Safety Committee decided at its 78th Session to put on its agenda the question of the devolution of responsibility for road safety work to the regions.

Since the early 1980s many countries, more particularly those with the greatest propensity to centralise, have been developing road safety policies which have involved all the various levels of administration, including local authorities, the essential aim being to step up efficiency by facilitating the mobilisation of all political and administrative authorities to combat the lack of safety on the roads and to develop forms of action as close as possible to the general public, the actual road users.

The Aix-en-Provence Seminar highlighted both the diversity of the approaches adopted in the various countries -- mainly owing to differences in governmental and administrative structures, and the positive results achieved with decentralisation.

Instead of simply describing the different cases, it would seem useful to examine the way in which road safety policies almost everywhere have been moving from the national to the local level over the past two decades and to consider the instruments that have accordingly been developed along with these policies.

1. Pattern of development of policies over the past two decades

As pointed out in the OECD publication "Integrated road safety programmes"[1], there is an astonishing similarity in the patterns of development of the road safety situation in OECD countries (as in all countries with high levels of car ownership) and, with a certain time-lag, in those countries in which car ownership is developing.

The spectacular increase in the number of motor vehicles after the Second World War was unfortunately accompanied by an equally spectacular and disastrous increase in the number of accidents and, accordingly, in the number of casualties. What had been a sporadic and relatively mild phenomenon, comparable to the accidents involving horse-drawn carriages in earlier decades, became an endemic disease which on its own claims as many lives as some of today's most dreaded diseases, especially among the younger members of our populations, thus cancelling out much of the progress made in the fight against infantile diseases.

Towards the end of the 1960s the scale of the problem was such that the public could no longer accept it, and all the governments of countries with high levels of car ownership then developed comprehensive preventive policies and set up administrative structures whereby road safety issues could be dealt with more effectively.

In the early 1970s national governments introduced legislation with respect to the four factors that seemed to be most decisive in terms of the number and severity of accidents, namely, alcohol, speed, and the wearing of seat-belts and helmets. The measures taken were designed to limit the perverse effects in the case of alcohol and speed and promote the benefits in the case of seat-belts and helmets, thus effectively curbing or even reversing the steadily rising trend in the number of casualties recorded in the preceding years.

The first laws were accordingly laid down to make the wearing of belts in front seats and of helmets compulsory, to penalise drinking and driving (establishment of a legal limit for the blood/alcohol level) and to set speed limits on all networks.

At the same time, research was stepped up with a view to getting a better understanding of accidents and of driver behaviour. Similarly, major programmes were developed for the improvement of road infrastructure, the construction of the motorway network being one of the most spectacular features. Meanwhile, the motor manufacturers were bringing out increasingly reliable and collision-proof vehicles, although these were also capable of increasingly high speeds.

Significant results were achieved immediately and, once these nationwide legislative measures had been taken, all countries recorded a sharp fall in the number of accidents and casualties, while the number of vehicles and volume of traffic on the roads continued to increase rapidly.

This general realisation that the lack of safety on the roads was unacceptable -- which has made this problem one of the most crucial of present-day society -- has also been one of the factors conducive to the downtrend in the accident rate since, convinced of the advisability and soundness of the constraints imposed, many people were well disposed to comply with the new regulations.

In addition, enforcement measures were stepped up, penalties were brought into line and national information campaigns were developed at this time to keep the problems in the public eye and bring them to the attention of those who still needed to be convinced of their gravity.

Since that time, while the road safety policy pursued may be qualified as national and legislative, it has been found that if the policy is to be effective it must be **integrated** with other matters of concern in the sphere of road transport such as personal mobility, the smooth flow of traffic and environmental protection -- as clearly demonstrated in the OECD report[2] -- and be **diversified** to include all the fields identified as being able to make a direct or indirect contribution to the improvement of road safety in the short or longer term.

Example of integration

The attempt to improve the fluidity of traffic provides an example of the integration of concern for safety with other aspects of general transport policy.

Consideration has since been given to the construction of new roads and motorways, the improvement of the existing network and specific operational measures developed to cater for the increase in traffic, cope with its irregularities and manage peak periods more efficiently (daily, weekly or seasonal), with a view to increasing the capacity of roads and ensuring the smooth flow of traffic, while

at the same time increasing the comfort of users and maintaining, or preferably raising, the standard of safety.

An example of diversification

Road safety improvements are to be found not only in relation to the road itself, since the three main spheres in which action is to be taken to establish an effective policy relate to road, vehicle and driver.

For the sake of simplicity, and to avoid making a tiresome list which might not be exhaustive in any event, a few examples will show the very broad range covered by diversification:

-- in the road sector, the construction of new and safer infrastructures and of alternative routes, the equipment of roads with safety devices, the elimination of "black spots", the provision of both vertical and horizontal road signs, signals and markings;

-- as regards vehicles, -- to consider only the car -- greater resistance in collisions, the fitting of safety devices, vehicle maintenance, driving aids;

-- as regards the driver and road user in general, improved driver training, better education and information, a more efficient policy of enforcement and penalties to ensure better compliance with regulations, the development of preventive measures together with more appropriate regulations.

The downtrend in numbers of accidents and casualties, which was then recorded over a number of years, was followed in almost all countries by some levelling-off in the results, so some fresh impetus was then called for. The major legislative measures of the early 1970s had borne fruit. Even though endeavours had to be maintained or even stepped up to ensure better compliance with these regulations, and although the measures taken in the various above-mentioned fields had not as yet taken full effect since their impact could only be felt in the medium to long term, the various actors needed to be re-motivated, the policies renewed and the machinery modified.

Though to varying degrees, everybody seemed to agree at the time that, while infrastructures should continue to be developed and roads and vehicles be improved, attention had to be focused primarily on the behaviour of the driver with a view to changing the behaviour of all road users.

Given these factors, road safety policies in most countries then began to develop along three other lines.

I First, towards greater **diversification** of measures taken by central government which, while pursuing its programme of improvements to its own road network, -- often with a dual aim of fluidity and safety and the establishment of standards for more reliable vehicles in collaboration with manufacturers -- and continuing to implement legislation on road traffic and behaviour, developed the action it was taking with respect to education, training, information and communications, as well as carrying out its responsibilities as regards the enforcement of regulations and the imposition of penalties.

The essential target of the various measures was the road user, the aim being to change his behaviour which all agreed played an important and usually major role in accidents.

In this phase, however, as pointed out in the ECMT "Report on ways of influencing human behaviour with a view to improving road safety", all these measures were essentially carried out, or in some cases called for, by the public authorities at national level, with little being asked from the other partners who did not have an integral role in this policy.

It must not be concluded that there were no other partners or that the partners took no action. However, such action was very often only sporadic, focused on very limited targets or subjects on an individual basis with no formal consultation among the partners.

This problem has to be qualified, however, since the situation described is characteristic of highly centralised countries, such as France at that time, whereas the participation of regional and local authorities and associations was already considerably advanced in varying degrees according to the country in the light of their individual responsibilities. For example, the responsibility for enforcement policy of the German Länder and Swiss cantons or responsibility for education. In decentralised countries, while the main lines of approach were laid down by central government, often in the form of regulations, regional or local authorities were responsible for implementing the measures and took considerable initiative in defining the action to be taken.

II This diversification of measures was accompanied by an **increase in the number of actors** and greater **decentralisation** of the action taken.

The second fundamental stage in the evolution of road safety policies involved the participation and mobilisation of local authorities representing central government at the various levels of the administrative structure which were closer to the public, the road users, and directly responsible at their own level for taking such action as law enforcement and the imposition of penalties.

Such participation was often prompted by or delegated by the national authorities. It proved effective in varying degrees according to the government department concerned and the sphere of action and according to the resources employed to promote it.

These resources took various forms:

-- manuals prepared for local authorities and giving a list of possible measures, such as "The Improvement of Traffic Safety in Built-up Areas" published in 1980 by the central government, or "Measures to Ensure the Safety of the Elderly" in Finland, or "The Road Safety Code of Good Practice" drawn up by the co-ordinated associations for the regional offices of the Department of Transport in the United Kingdom.

-- funds allocated under contracts between the central government and local partners: the "10 per cent reduction aim" contacts with local authorities, towns or departments in France, or the "30 km zone" experiment and the "25 per cent reduction" contract in the Netherlands.

-- the establishment of road safety organisations, commissions or boards at local or intermediate level, such as the agencies set up in each county in Denmark or the regional road safety

organisations in each province in the Netherlands.

In other countries this decentralisation of action and the relevant incentive measures were based on existing administrative units: municipal authorities in Portugal, municipal or departmental authorities in France, regional authorities in the United Kingdom.

III The third stage in the development of decentralised policies involves the participation of all the public and private sector partners in a **concerted action programme**.

In many of the most decentralised countries, action by associations has always been better recognised and integrated than in the more centralised countries where central government seemed to have the main role. The decentralisation of road safety measures also provided the opportunity to involve all the partners in carrying through a programme that had been jointly established and recognised by all, thus promoting the development of combined efforts calculated to improve the overall efficiency of the action.

Associations of both users and enterprises with local elected representatives and central government representatives at local level in all the spheres relating to road safety: road engineers and technicians, doctors, police, magistrates, teachers, etc. were able to draw up a programme together and develop measures to which they all assigned priority with a view to improving road safety in their own particular spheres and so participate in the achievement of the national objective.

This collaboration was developed on two levels:

-- Either on a specific subject whereby all the partners worked together to prepare a particular action for which the procedures were jointly determined. Germany offers one example relating to the safety of children on the journey to and from school: a list of possible measures was drawn up with a view to providing practical information for those responsible;

-- Or by drawing up an action programme, usually on an annual basis, for an authority or administrative unit and integrating the whole range of diverse fields relating to road safety: infrastructure, education, enforcement, etc. which was funded jointly and monitored by each partner according to specific responsibilities. An example of this formal comprehensive collaboration is to be found in the departmental road safety action programmes developed in France since 1988.

It was clearly seen at that time that road safety was not the exclusive responsibility of central government but that, in order to reach the general public of road users, the information and measures provided by central government had to be passed on to and developed by all the partners, especially locally elected representatives and the associations closest to the general public, each in accordance with his individual characteristics, spirit and objectives, but in a joint action to ensure greater clarity and effectiveness.

In providing for the participation of all concerned, this third stage -- which can be considered to mark the starting point of current decentralised policies -- makes it possible to increase each person's awareness of his share in the responsibility for the endeavours to prevent road accidents and also to broaden the range of measures to cover every field, even those that seemed to play a secondary or minor

role in terms of lives saved.

2. Brief assessment of decentralised policies

This decentralisation of action in the sphere of road safety, accompanied by diversification and collaboration among the various partners, provided the necessary fresh impetus whose initial results are clearly encouraging in the light of the pattern of development in the ECMT countries over the past ten years, since the fall in the number of accidents and casualities, while not as spectacular as that in the 1970s, is nonetheless substantial.

However, the value of these policies does not lie exclusively in the favourable results achieved, even if such results are of course the major objective.

The ways in which these policies have been put into practice have given rise to procedures which not only provide benefits today but will do so in future.

The development of the individual action of very limited local scope, which could not have been conceived of or carried out at national level, is facilitated by this system, while the increasing number and diversity of such measures offers a by no means negligible advantage overall in that new ideas are generated. Initiatives and proposals no longer move solely from national level down to local level since it is also **easier for the results of experience to be conveyed upwards from the local level and be disseminated more widely**. The fact that ongoing exchanges of ideas have been established at all levels will certainly help to improve the road safety results during the coming years.

The collaboration among the various partners, coming to work together from very different spheres and areas of concern, has developed **reciprocal training** by means of a better mutual understanding of motivations and technical know-how, thus **decompartmentalising the ideas and enabling each partner to acquire a broader knowledge** of all aspects of road safety. This process of self-training, combined with **exchanges of views** which are conducive to a more fruitful and constructive dialogue, helps to generate new ideas, making it possible to establish priorities and plan major measures which are better geared to requirements and therefore more effective.

It should also be noted that the development of these decentralised policies provided the opportunity to carry out specific training programmes for a large number of people who were subsequently able to assume responsibility for road safety problems in a particular area and pass on their knowledge to others.

Accordingly, **the motivation of all concerned is often increased**, as is necessary for the continuity of any action that is to be productive in the years to come.

This exchange of experience is organised around networks consisting of specialists or those in charge in a particular field, thus facilitating the **transfer of information** from national to local level, but also in the opposite direction, as well as between the various local levels, so as to ensure the **consistency of action** that is essential if a policy is to be effective.

In short, as pointed out in a German report, these policies have made it possible to:

-- establish co-operation among the various government departments and also between elected representatives and the private sector;

-- approach problems from different angles;

-- prevent a short-sighted approach to one's own organisation;

-- reduce the risk of poor decisions;

-- adopt an objective approach to the arguments.

All these attainments should be of even greater value in the years to come, thus leading to even more effective action and greater safety on the roads.

To conclude this brief review of the trend of road safety policies over the past twenty years, it may be said that, after adopting what was essentially a national and legislative policy during the 1970s, all countries are now pursuing diversified, decentralised and concerted action policies which involve all the partners concerned at every level.

On the basis of the above examples it would seem that, while the prime objective of all current policies -- qualified local or decentralised according to the country -- is certainly to mobilise all agents in the field of road safety at national or local levels, from government departments to private enterprises -- by integrating elected representatives and associations, each according to its responsibilities, area of competence and type of contact with and nearness to the public, the actors in the field of road safety -- that objective cannot be achieved by means of a universal plan. Both the administrative organisation and the position of the associations determine the structure that must give shape to the decentralised policies. It follows that an efficient system that has proved successful in one country cannot be transferred to another country with a different structure. Accordingly, it would seem to be difficult to promote a single plan within ECMT, and the aim should be rather to set out the means or instruments needed to mobilise each actor with due regard to his position in the structure.

3. Established instruments

Among the instruments, consideration will be given in turn to the specification of objectives as a factor in the process of mobilisation, the establishment of appropriate bodies and provision of financial incentives, although it is not claimed that every aspect is covered here in full.

3.1. Specification of objectives

Any action of whatever kind is carried out with a view to attaining an objective, clear-cut or otherwise. Road safety measures are of course no exception, their ultimate aim being to reduce the number of traffic accidents and especially the number of casualties, thus contributing to the achievement of the essential task of central government which is to ensure mobility and traffic safety.

3.1.1 Specification of objectives at national level

The various policies followed over the past 25 years have often involved the establishment of precise objectives, thus reflecting the resolve of policymakers to take active steps to make the roads safer.

Two types of objective were adopted, qualitative and quantitative, each for different reasons with a view to gaining maximum acceptance by the public for which the policies were designed.

3.1.1.1 Quantitative objectives

The quantitative objectives may be either in absolute terms (x fewer deaths per year), relative terms (x per cent fewer deaths) or yet again be expressed in terms of a reduction of risk, e.g. a lower fatality rate (deaths per kilometre up to a given value).

Establishment of a maximum for the number of casualties

-- In France, the gravity of the lack of safety on the roads had become quite unacceptable with a total of 16 000 killed per year, so a maximum figure of 15 000 deaths was taken as the first objective for the period 1970-1975.

-- In Finland, a parliamentary Committee recently set as objective to reduce by 50 per cent as compared with 1989 the number of killed by the year 2000.

-- In Spain, a maximum of 6 200 deaths was established in the context of the first national road safety plan in 1980.

Estimation of a rate of reduction in the number of casualties

In the early 1970s Canada decided to reduce the rate of fatalities by 15 per cent over the period 1974-1978 and, in 1978, revised the rate to 17 per cent over the period 1979-1983.

In 1973, Norway presented a list of priority safety measures to be implemented and, in 1980, replaced these by a quantitative objective designed to reduce the risk during the 1980s to the level existing in the preceding decade by implementing the measures announced in 1973. An additional individual objective for Oslo was to reduce the number of accidents by 30 per cent by 1990.

A number of governments have more recently established very ambitious specific objectives.

In 1986, the Netherlands announced that it was to reduce the number of casualties by 25 per cent by the year 2000.

In 1987, the United Kingdom announced that it wished to reduce casualties by one-third by the year 2000.

In 1989, Denmark set an even more ambitious objective of reducing the number of road casualties by 40 per cent.

Sweden set the objective of reducing the number of killed to 600 by the year 2000.

In 1981 France had also adopted such an approach and, in backing up all the measures decided by an interministerial commission on road safety, was aiming to reduce road traffic risks by one-third over five years.

As the results of the first two years did not come up to expectations, this objective was abandoned after two years and replaced at the end of the 1980s by the aim to bring the number of deaths below the fateful figure of 10 000.

These quantitative objectives are accompanied by a list of specific measures which are themselves qualitative objectives.

3.1.1.2 Qualitative objectives

For reasons that will be given below, a number of countries (more particularly Belgium, and Switzerland) did not want to adopt quantitative objectives but referred directly to "qualitative" objectives, specifying the content of the proposed policies, the aim being to reduce the risks by appropriate means as long as the problems exist.

The scale of these objectives and the lines of approach adopted differ from one country to another according to the types of problem or in the light of the main accident parameters (user group, place and characteristics, types of accident, etc.). The aim may be to improve the safety of particular road user categories (pedestrians, the elderly, riders of two-wheelers), or else the focus may be on highly specific areas (speed, alcohol, seatbelts, night-time traffic, improvements to the road network, etc.), examples being:

-- in Ireland, compliance by young drivers with the laws on drink/driving and the wearing of seatbelts;

-- in Belgium, compliance with regulations on speed limits, the wearing of seatbelts and helmets and drink/driving;

-- in Sweden, earlier objectives have been to reduce the risk in very particular conditions, such as night-time driving, travelling at high speeds, or drink/driving.

These qualitative objectives can also be quantified as follows, for example:

-- the endeavours to combat drink/driving can be expressed in terms of a number of checks to be carried out or a specific reduction in the percentage of checks found to be positive;

-- greater compliance with speed limits by a reduction in the percentage of drivers exceeding the limit;

-- the wearing of seatbelts by trying to get a given percentage of drivers to wear belts.

3.1.2 A choice between qualitative and quantitative objectives

A quantitative objective is usually established in order to show that the political will exists to combat road accidents. Such an objective serves as a reference and for the purpose of communication, but is also a tool for the management and assessment of road safety programmes.

As an instrument of communication, a quantitative objective must be ambitious, since it would hardly be credible to try to reduce the number of road casualties by 3 per cent or even 10 per cent.

The establishment of a figure implies that the present results are recognised to be unacceptable but also suggest that the proposed figure to be attained is itself acceptable, either at an initial stage or once and for all. It is therefore a way of recognising that the freedom to travel on the roads is accompanied by a risk that cannot be reduced to zero, just as this is accepted for other means of transport (air, sea or rail) or for sports and recreational activities.

The objective might be to lower the level of risk on the roads to that existing for other modes of transport, which is not to say that the level attained for rail or air travel is acceptable and that nothing has to be done to reduce it still further.

The fact that users accept the existence of a minimum risk, which takes the form of a number of casualties which cannot be reduced although this number cannot be evaluated precisely, is of educational value. That might seem shocking but can also lead to an awareness by the user and even according to some specialists, promote a better acceptance of the measures taken to reduce the level of risk.

The establishment of a quantitative objective may also have several drawbacks. If it is not achieved or, on the contrary, is substantially exceeded, the programme manager must explain the error of assessment, which is seen as particularly serious since human lives are involved.

For example, the 15 per cent reduction in the rate of fatalities established in Canada for the period 1974 to 1978 was improved upon to the extent of 33 per cent, although not all the improvement could be attributed to the road safety programme implemented. A good part of this improvement may perhaps be explained by other factors such as the way in which the 1973 crisis affected traffic.

The achievement of the 17 per cent reduction planned in the subsequent programme -- based on an 80 per cent rate for the wearing of seatbelts whereas the rate was in fact 45 per cent -- was also difficult to explain and did not make the task of determining further objectives any easier for the authorities.

In France, however, the objective established in 1981 whereby road accidents were to be cut by one-third had to be abandoned because the results of the following two years made it impossible to achieve. The abandonment of the reference objective is by no means to say that the programme is abandoned, since it is then either revised or continued.

The difficulty of establishing a quantitative objective is largely attributable to the difficulty of assessing the impact of measures taken, especially those relating to education or information. Present methods of assessment do not allow for any certainty but only an estimate of the foreseeable benefits.

Moreover, the closely interrelated nature of the measures in existing road safety programmes means that effects are difficult to measure accurately, while the system is further disrupted by unforeseeable or imponderable external events.

It is largely for these reasons that a number of countries do not quantify their objectives but use the "qualitative" method, an approach that clearly shows the difficulty of accurately assessing a programme's effectiveness in advance, although it also takes account of the need to work unceasingly to improve road safety.

3.1.3 The establishment of objectives at local level or partial objectives

In the context of decentralised, integrated and concerted action programmes, the action taken by each partner contributes to the attainment of the overall objective.

Each can therefore set himself an objective in relation to the type of action he takes, an objective that will likewise be quantitative or qualitative.

This partial objective may be the same as that determined at national level but relate to a given geographical area, or it may be quite different.

Different quantitative or qualitative solutions are possible:

A quantitative objective may be established with reference to a specific action relating to a particular category of user (pedestrians, cyclists, the elderly or children, etc.) or a certain type of improvement designed to avoid particular types of accident (accidents at intersections, crashes against trees, etc.) or infrastructure characteristics (motorways, built-up areas).

Other partial objectives may be designed to modify certain types of deviant or dangerous behaviour by means of appropriate measures and to improve the results in terms of offences recorded with respect to speeding, seatbelt wearing, drink/driving, etc.

The diversity of these partial objectives can enable each actor to identify his action, calculate its efficiency and feel fully involved in the attainment of the overall objective insofar as he focuses on the achievement of one objective that is more readily within his grasp.

In the last analysis, it is up to each country to select the approach best suited to it. In any event, it would seem that the specification of objectives, whether quantified or not, makes it possible to develop a coherent set of safety measures and serves as a catalyst by gathering together at the planning stage all the actors to be responsible for implementing the measures. Moreover, the establishment of a programme based on objectives provides for the rational and co-ordinated management of road safety work at all levels of responsibility. Lastly, it is important to be able to disaggregate a set of objectives so as to ensure the decentralisation of the different types of action to be taken by the partners concerned.

As pointed out in the above-mentioned OECD report "... there is no magic formula to apply in determining safety goals and safety programmes". However, various factors have to be taken into account, such as the involvement of the various partners of different origin, the use of decision-making criteria and, lastly, sound judgement whereby one can determine the most important objectives and the most appropriate resources and means for achieving them.

3.1.4 Specification of an objective for ECMT

Even if it is not given formal expression, a specific objective is clearly established by any actor in the field of road safety when he determines the action to be taken. To set the objective out clearly often amounts to a commitment, a kind of moral contract between the actor and the community which gives value to the action that he proposes to take.

As already pointed out, this approach is more a reflection of his concern to show his commitment to prevent road accidents than it is the outcome of a reliable mathematical calculation of the foreseeable benefits from carrying out the action planned.

What is already difficult for any individual country is even more so for a number of countries. Would it be possible, for example, to establish a quantitative objective for the reduction of accidents or casualties for all ECMT countries by the year 2000?

The response may be positive if the aim is simply to publicise the ECMT's resolve to combat the lack of safety on the roads and thus lend weight to the recommendations that it has been drawing up for a number of years and, of course, those to be drafted today and in the future.

Owing to the differences in the situations of the various ECMT Member countries, two difficulties arise which can be set out in the form of questions:

-- what figure or what percentage reduction is to be selected?

-- does each individual country have to adopt for itself the objective set by ECMT?

Account has to be taken of a number of factors in order to answer these questions.

In contrast with those countries in which car ownership is growing and road infrastructure has not as yet developed to the full, countries that have for many years been unsparing in their efforts in this connection no longer have the resources needed to take major regulatory measures or even to construct the infrastructure that would enable them to improve their results to any appreciable degree.

A number of countries can hope to reduce the number of casualties by 20 per cent within a short period, while for others it would seem impossible to achieve this objective and it will already be very difficult to progress by a few percentage points.

In order to be effective and develop policies geared to a country's situation, it would seem reasonable for each country to determine its own attainable objective since, as indicated above, failure here is difficult to handle.

Countries which have had effective policies at an earlier stage and whose considerable efforts have enabled them to establish road risk levels well below those in other countries, and therefore more difficult to reduce still further, will find themselves penalised insofar as they might set an unduly high objective that will not be attained or set a low one which might seem fairly unambitious.

However, countries that can expect to reduce the risk considerably by taking measures that have already proved successful elsewhere -- provided they are suitable for local conditions -- and by constructing infrastructure, for example, are experiencing funding problems which do not allow them to make rapid progress.

Accordingly, the results achieved by any of these countries are not necessarily commensurate with the efforts made. Any rapid comparison of the results based on the figures might well be unfair and have disastrous effects from the standpoint of the impact on the public.

In short, it would seem difficult to establish a common objective for all ECMT Member countries, and it would also be somewhat problematical to set an individual objective for each country as a contribution towards the attainment of the overall objective.

The establishment of an overall objective for ECMT, while perhaps introducing an additional motivation for each country and enhancing the ECMT's action in this field, may have harmful effects on the public in these countries which would be of far greater importance than any benefits to be expected.

These considerations prompted the ECMT Secretary-General to set a qualitative rather than quantitative objective, that is to say to pursue, develop and step up the endeavours to combat the lack of safety on the roads by very broadly promoting international co-operation, the harmonisation of legislation and exchanges of information and experience, as well as by recommending that the various Member countries take specific measures on a co-ordinated basis.

It should be noted that in a report to the Commission of the European Communities, a group of experts chaired by Mr. Gérondeau proposes that the Community should establish an objective of reducing the number of road accidents throughout the Community by 25 to 30 per cent over the next ten years, and it sets out a list of measures to be taken jointly.

3.2. The establishment of appropriate bodies

Once the problems of road safety became a matter of concern in the early 1970s, the shaping of policy was accompanied by the establishment of a suitable administrative structure to carry out that policy effectively. Such a structure was of particular importance in that the diversified policy involved a number of ministries with responsibilities and functions as different as those of the Ministries of Education and Justice.

It was found that co-ordination of the action taken by each was essential to the administration and success of the policy.

This co-ordination was in many cases ensured by bodies set up for this purpose, such as:

3.2.1 At national level

-- In Portugal in 1989, a commission consisting of the Ministries for Justice, Interior, Health, Public Works, Transport and Communications.

-- In France, an Interministerial Road Safety Delegation attached to the Prime Minister's office.

-- In Spain, a Higher Council for Traffic and Road Safety set up in 1976 under the Minister for the Interior to draw up integrated road safety programmes. Under the Road Safety Act of 1990 thus became the Higher Council for Traffic and the Safety of Road Traffic with extended responsibilities, including the preparation of policy, counselling and the co-ordination and promotion of road safety measures.

-- In Sweden, the Swedish Road Safety Office within which a Road Safety Board brings together several bodies concerned with road safety, such as the Federation of county councils and the association of local authorities, which is also responsible for submitting proposals to the government. Since 1986 the Board has also been responsible for laying down the main lines of local policy and developing and co-ordinating local measures.

-- In the Netherlands, a Higher Council for Road Safety.

-- In Belgium, establishment of the Belgian Institute for Road Safety.

The Swiss Road Safety Board is another example of this type of body and is an association set up under private law in which the Confederation, Cantons, Communes, private associations and institutions and enterprises are represented. The Board is responsible for promoting and strengthening all measures designed to improve road safety. More particularly, it draws up and conducts the information campaigns conducted at national level each year.

In Federal countries, road safety policies are primarily co-ordinated by means of existing administrative structures and the institutional procedures for consultation between national and regional authorities and all concerned with road safety.

3.2.2 At local level

During the process of developing decentralised policies a number of countries also decided to set up a regional body -- as the Netherlands has done in each province -- with its own budget to develop and co-ordinate the various types of action at local level, initially confined to road infrastructure but extended to all road safety spheres since 1989: information, training, enforcement.

Another example is to be found in Switzerland where, with a view to ensuring a fairly consistent approach and uniform application of the law (which comes within the competence of the cantons), the cantonal authorities consult within intercantonal associations such as the "Association des Services des automobiles, the Commission intercantonale de la circulation routière, and the Conférence des Officiers de Police.

Less formally, the departmental programmes for action in the field of road safety, introduced in

France in 1988, can be regarded as an instrument or even a structure for co-ordination geared to the approach adopted in the context of decentralised policies.

The above are but a few examples since a full list cannot be given, but they do show the need to set up appropriate structures or bodies so as to monitor the policies being implemented.

3.3. Financial incentives

As shown in the report, the source of decentralised road safety measures is often at central level or in a central body in the form of contracts which include financial incentives.

Measures such as the improvement of infrastructure, elimination of black spots or multiple accident areas and the creation of reduced speed areas (such as the 30 km/h zones) in the Netherlands in 1975 were covered by the first types of contract between the central government department responsible for road safety and the local authorities in those countries with a centralised system.

As from the early 1980s, however, many countries developed other types of contract with regional and local bodies for other forms of action than that related to infrastructure. Programmes such as REAGIR, launched in France in 1983, and those in the Netherlands in 1989 included measures that covered areas such as information, education, enforcement and communications campaigns.

This financial participation by central government was sometimes in the form of a budget entirely at the disposal of local authorities, part funding of a highly specific measure (joint action with the municipal authorities in Finland), or an incentive to take action by the provision of a sum proportional to the number of inhabitants (25 per cent reduction programme in the Netherlands or the - 10 per cent contract in France) or, more rarely, the award of a bonus for success by payment of a sum proportional to the number of lives saved (10 per cent reduction contract in France).

These funds are allocated by central government in all cases.

Another example is the Fonds Suisse de Sécurité Routière (FSR), an institution set up under public law and under the supervision of the Federal Council, which primarily funds research, education courses and means for road safety training, information campaigns and other forms of action carried out by various bodies or road-user associations. The FSR obtains its capital from an annual contribution paid by each vehicle owner which amounts to 0.75 per cent of the net premium for third-party insurance.

These financial contributions provide a means of developing action in the field of road safety by all the partners concerned, but they also serve to initiate such action, confer the right of inspection and a counselling role, and strengthen the collaboration among the various partners.

Conclusion

The decentralised policies now conducted in the various countries should be pursued in the future and be further refined so as to ensure the even broader mobilisation of all those who have some contribution to make -- however limited in scope -- to the endeavours to combat the lack of safety on the roads, and also to ensure closer collaboration among all concerned.

Nation-wide legislative measures still need to be taken, even if the stringent application of each of them does not in itself reduce the number or gravity of road accidents to any great extent, since the combination of a number of minor measures can no doubt produce significant results. The experience acquired at local level should also lead to new proposals.

The results obtained are sufficiently representative to establish the efficiency of these diverse policies and, accordingly, provide a basis for recommendations.

These recommendations are set out in the draft Resolution annexed hereto.

Notes

1. Integrated Road Safety Programmes, OECD, Paris, 1984.

2. Report on Integrated Road Safety Policies.

LORRIES AND ROAD TRAFFIC SAFETY

1993

LORRIES AND ROAD TRAFFIC SAFETY
SUMMARY AND RESOLUTION No.93/4

CEMT/CM(93)4/FINAL

SUMMARY

The creation of a free market for road haulage in the EEC, coupled with the opening of borders in Eastern Europe, raises the spectre of complex road safety, pollution and congestion problems in the various ECMT Member countries, since the increasing numbers of lorries on the roads as a result of this growth in economic activity will inevitably be accompanied by more disamenities and higher accident risks which will not always be offset by technical advances that improve safety and environmental protection. Lorries by their very nature pose a special risk, one that has grown with their share in the volume of traffic over the past few years, a trend that is forecast to continue. Steps must therefore be taken to reduce the risks associated with lorry traffic.

This being the case, measures should be found that will reduce the dangers associated with this specific form of traffic. In this connection, the various chapters of the report CM(93)3 on lorries and road traffic safety can be summarised as follows:

Chapter I

Analysis of traffic accident statistics has shown that lorries are involved in fewer than 10 per cent of accidents, but that these accidents are the most severe, especially for the occupants of the other vehicles. In the statistics on lorry accidents, moreover, long-distance transport gets a disproportionately large mention.

Such accidents can frequently be attributed to a failure to comply with regulations (traffic regulations, driving periods).

If action is to be taken to improve road safety, it is first necessary to improve both driver behaviour -- and driver training -- and the technical specifications for vehicles or road infrastructure.

For safety reasons, steps should also be taken to ensure that greater focus is placed on the transport potential offered by the rail and inland waterways systems.

Chapter II

Although lorry driver training has improved significantly over the past few years in many countries, there is still room for further progress, more particularly from the standpoint of the profession itself. It would therefore seem advisable to promote the development of occupational training -- by whatever means -- and ensure that the practice of further and continuing training becomes more common, it being especially important to involve the haulage firms themselves.

Chapter III

The vehicle's technical specifications -- weight, dimensions, safety equipment -- are covered by detailed national and European regulations. However, the widespread use of devices such as speed governors and tachographs to improve safety should be encouraged, as should research into even more effective devices.

Chapter IV

Safety also requires that the roads used by lorries be suited to their requirements and specifications. The design of new road infrastructure and improvements to existing infrastructure should therefore take account of the present and foreseeable levels of traffic by means of highly reliable methods. Ancillary infrastructure is important too; when well designed and appropriate, it can reduce accident risks.

Chapter V

Even more than other vehicles, lorries are governed by specific traffic regulations. Their drivers are subject to rules of behaviour and social regulations whose main goals include ensuring smooth traffic flow and preventing accidents. The aim should not be to draw up new regulations but to harmonize the existing ones, thus making them easier to understand and comply with throughout Europe.

Chapter VI

Some degree of traffic monitoring and control is also necessary, however, and calls for the establishment of appropriate and effective penalties, the development of mutual assistance in legal matters and co-operation among countries in order to recognise and enforce suspensions internationally.

Chapter VII

Safety can also be promoted by means of information campaigns and, more generally, communication, by promoting accident-prevention awareness, particularly within haulage firms and hauliers' organisations and federations.

RESOLUTION No.93/4 ON LORRIES AND ROAD TRAFFIC SAFETY

[CEMT/CM(93)4/FINAL]

The Council of Ministers of ECMT, meeting in Noordwijk, on 26 and 27 May 1993:

HAVING REGARD to the Report CM(93)3 on "lorries and road traffic safety";

CONSIDERING that the improvement of road safety is a key factor in any Europe-wide transport policy;

ACKNOWLEDGING the growth of international goods transport and the major share accounted for by road haulage;

NOTING that only an integrated and diversified road safety policy incorporating all components-- driver, vehicle, infrastructure, training, regulations, monitoring, penalties, communication -- can ensure that traffic flows under optimum conditions of fluidity and safety;

RECOMMENDS THAT MEMBER COUNTRIES:

Statistics

1. improve the compilation of statistics on the composition, volume and classification of lorry traffic with a view to establishing what concrete measures should be taken;

2. harmonize accident statistics for the purpose of international comparison;

Driver training

3. ensure that the drivers of the largest lorries are persons of a certain maturity. This requirement could be met through the fixing of a minimum age (of 21 years, for example), or through professional know-how or gained during the relevant training (apprenticeships);

4. introduce, or continue to require, a thorough medical examination before granting a driving permit and also promote regular checkups during the period of validity of the permit;

5. harmonize the conditions of access to the profession with regard to prior training and the issuing of driving permits;

6. develop suitable occupational training and ensure that the practice of further and continuing training becomes more common by involving haulage firms and hauliers' federations and unions;

Vehicle technical equipment

7. promote greater use of safety devices such as speed limitors and those that improve the driver's field of vision and vehicle visibility;

8. promote research in this sphere and with respect to in-vehicle communication between drivers and the traffic management authorities;

Infrastructure

9. develop road infrastructure for use by lorries in the light of their requirements and specifications, as well as equipment and materials (guard-rails, porous surfacings, etc.) which will reduce problems arising from the co-existence of car and lorry traffic;

10. develop ancillary infrastructure (rest and parking areas) to improve the physical comfort of lorry drivers and thereby create safer conditions;

11. consider, for safety reasons, the opportunity to use the freight transport capacities provided by the existing rail and inland waterways infrastructures in a more efficient way;

Regulations

12. harmonize the criteria for restrictions on lorry traffic and limit exemptions;

13.[i] consider the harmonization of all rules of behaviour, as well as driving and rest periods on the basis of common definitions of the terms "driving" and "rest".

Monitoring and penalties

14. provide the necessary material and human resources to ensure optimum effectiveness of monitoring and diversify checks on the road or on hauliers' premises, notably with regard to compliance with social regulations;

15. extend liability to persons issuing instructions when infringements occur;

16. develop mutual assistance in legal matters and increase co-operation among countries in order to recognise and enforce suspensions internationally;

Communication and information

17. promote exchanges of information between countries on traffic conditions and safety and emergency equipment and systems which lorry drivers may find when driving internationally;

18. promote a climate of road safety within haulage firms with the participation of hauliers' organisations and federations;

19. promote any preventive measures or information campaigns which specifically address matters relating to lorries.

INSTRUCTS THE COMMITTEE OF DEPUTIES to follow up the implementation of this Resolution and report back in due course.

Note

1. Germany and the United Kingdom entered a reservation on this item, pointing out that it infringed the principle of subsidiarity as defined in the European Communities.

REPORT ON LORRIES AND ROAD TRAFFIC SAFETY

[CEMT/CM(93)3]

When the Road Safety Committee's programme of work was under consideration, attention was drawn to the fact that the question of lorries and traffic accidents had never been on the Conference's agenda, despite its evident and growing importance in the context of the creation of a free market for road haulage in the EEC and the opening of borders in Eastern Europe. Given the implications of this matter in terms of both road safety and policy making, the Committee decided that a comprehensive report should be drawn up in this connection.

A questionnaire was therefore drafted and sent to all ECMT Member countries in mid-1991. The large number of replies showed how important the various countries consider this subject to be. The following delegations helped draft the report on the basis of the replies:

-- The Delegations for Austria and Germany: Chapter I, "Introduction and statistics".

-- The Delegation for Luxembourg: Chapters II and VII, "Driver training and terms of employment" and "Road Safety campaigns concerning lorries".

-- The Delegation for France: Chapters III and V, "The vehicle's technical systems" and "Regulation";

-- The Delegation for Switzerland: Chapters IV and VI, "Road infrastructure and safety" and "Monitoring and penalties".

The Delegations subsequently met to co-ordinate the plans for the various chapters and prepare a draft Resolution that was approved by the Committee at its March 1993 meeting.

Chapter I

INTRODUCTION AND STATISTICS

1. Introduction

The lorry has taken an extremely important place in domestic and international goods transport. The reasons for this are, for example, its optimum adaptability to the purpose of the journey, the possibilities of door-to-door transport and the relatively low transport costs for the user. ECMT statistics show that road haulage accounts for about 60 to 65 per cent of the total goods tonnage carried in most countries; rail's share is usually less than 10 per cent. However, the average length of hauls by rail is much greater than by road. Where they exist, waterways can be a less expensive and more environmentally friendly alternative for specific goods. Further marked increases in road haulage can, however, be expected as a result of new developments in international goods traffic with the creation of the European Economic Area and the opening-up of Eastern Europe.

According to OECD data, about 16 million lorries are in service in Europe. Lorries account for about 8 to 10 per cent of the road vehicle population and for about 15 per cent of road vehicle-kms. In the last 10 years, the volume of traffic has risen on average by 40 to 60 per cent, but the growth rates have been even much higher on certain routes.

Any assessment of risks associated with lorry traffic has to differentiate between risks connected with drivers, risks involving the vehicle fleet (technical condition) and risks concerning traffic conditions, such as the type of infrastructure. To date, efforts at the national and international level have focused almost exclusively on driver training and improving vehicle technology. Since only a few co-ordinated measures have been taken so far to influence traffic conditions, there is still much room for improvement. The measures to be taken in this area require increased international co-operation. Under no circumstances can the risks associated with lorries be seen independently of the economic context, that is to say the increase in traffic generated by economic activity. Risks also vary with the type of goods carried and can sometimes be quite high.

Measures to improve safety for drivers can be implemented only if basic labour regulations are observed at the same time. The increasing pressure of competition and the race against the clock in transport activities lead to difficult working conditions for drivers that can result in excessive driving times and fatigue. Drivers may break speed limits in order to meet delivery lead times.

Lorry weights range from 3.5 to over 40 tonnes. The weights of the heaviest vehicles are still rising since they are connected with higher payloads. The mix of various kinds of vehicles is the general problem affecting a safe flow of traffic. Bicycles, private cars, lorries and buses have to share the same road space. Compared with private cars, lorry weights may be at least 40 times higher. Some authors of scientific reports have compared lorries and other vehicles in terms of the road wear resulting from weight and shape. Differences in speed compared with car traffic, which on many kinds of roads can reach 50 km/hour or more, create further risks. This results in serious problems concerning the passive safety of lorries. With regard to their active safety, great progress has been made with suspension and braking systems (pneumatic suspension, ABS, disk brakes). Major problems still exist with load

securing -- essentially owing to the very high and unstable position of the centre of gravity -- especially when lorries are travelling at high speeds.

When road dimensions are planned, the largest vehicles, i.e. lorries, are used as a basis for the choice of road widths, curve radii and the design of gradients with special dimensions. The data available for lorry traffic are, however, inadequate, as is also noted by OECD in international comparisons. Data are provided by quite different types of organisations and are not homogeneous. Since the resources for new road infrastructure in highly developed countries are extremely limited, the possibilities for an internationally successful traffic management system lie in the control of existing traffic on the present road network. For this purpose, current data and the appropriate information technology are required to enable countries to exchange data. This is especially important in view of the expected growth in road traffic after the creation of the European Economic Area. For safety reasons, the use of rail network and existing waterway capacity in goods transport is also to be encouraged, since rail and waterways are clearly much safer than road transport. A co-operative strategy like the one being developed in several countries, particularly the Alpine region -- as in the German transport plan for the 1990s or the integrated traffic concept of Austria and Switzerland -- can bring about improvements over the longer term.

2. Lorry accident statistics

The main problem in international statistical comparisons, whatever form they may take, is that the basic data are not homogeneous -- starting with the definition of lorries, which in some cases also includes vehicles of under 3.5 tonnes. The definitions for vehicle categories such as tractor vehicles, buses and special vehicles also differ. Homogeneity is also lacking in the reporting of casualties. Some countries refer only to the casualties among lorry occupants, although the other casualties in an accident (mostly private car occupants) are much higher.

The accident statistics are based on ECMT questionnaires and OECD data. Detailed accident analyses for goods traffic have been provided by France, Germany, Switzerland and Austria.

The comparable data given in the following tables derives from an analysis of eight countries and reveals that on average lorries are involved in 8.1 per cent of road accidents. The values range between 5.5 per cent and 10 per cent depending on the country. Accident probabilities are usually lower than for private cars, depending on the type of road, although the seriousness of accidents owing to the previously mentioned difference in weights between the two kinds of vehicles is particularly striking. The risk of being seriously injured or killed is four times higher for the car occupants than for the lorry occupants in car/lorry accidents. On average, accidents involving lorries account for 15.3 per cent of total fatalities.

French, German and Austrian data show that the risk of accidents causing casualties is particularly high outside urban areas or on motorways. In France, 23 fatalities per 100 lorry accidents are recorded in non-urban areas. On Austrian motorways, lorries are involved in 27 per cent of accidents with fatalities and seriously injured persons. Lorries are involved roughly twice as often in fatal accidents as private cars for the same number of kilometres covered on German motorways. The very serious nature of the accidents is attributable to the weight and speed differences between private cars and lorries and to the weight/speed ratio.

The number of lorry accidents has remained steady or has risen over the years in most countries. One exception is Denmark, with a 25 per cent decrease between 1985 and 1989; nonetheless, the seriousness of accidents increased over this period.

The classification of lorry accidents shows that fewer are caused by driver error and drink-driving offences than in the case of private cars. Accidents due to over-tiredness or rear-end collisions are more common. Two or more drivers are usually involved in lorry accidents, the other vehicles concerned being mostly private cars. According to French data, fewer lorries are involved in accidents at intersections. In Germany, a particularly high proportion of lorry accidents occurs at night on motorways. The seriousness of multi-vehicle accidents involving lorries is also particularly high on German motorways. Although lorries are involved in about a third of these pile-ups they account for about two-thirds of fatalities and half the seriously injured. According to police reports, goods lorry drivers are responsible to a very large extent for rear-end collisions on German motorways. This fact must be related to the limited braking power of lorries compared with private cars. Fatality rates (probability of being killed in a traffic accident) for private car/lorry collisions and car/car collisions are provided by another German data source. When lorries are involved, the fatality rates for head-on collisions are six times higher, 15 times higher for lateral collisions and even 80 times higher for rear-end collisions.

One type of lorry accident is particularly common in built-up areas. When turning right, lorry drivers, unable to see two-wheelers to the right of their vehicles, run over them. Such accidents are nearly always fatal. Lorries parked in built-up areas and not properly lit, often because their reflectors are dirty or the street lighting is poor, are also a serious hazard.

Accidents involving lorries carrying hazardous goods are in a special category since they have a particularly high damage potential, i.e. their consequences are even more serious than in the case of ordinary goods lorries. Since transport operations of this kind are proportionally small, it is impossible to be precise about the actual risk. In addition to the theoretical definition of potential damage, the need is arising in this area for an international exchange of data on transport activity and on the circumstances and consequences of accidents. Accurate knowledge of current transport operations (which transport operation is taking place on which road section) is required if the impact of such accidents is to be reduced. The aim should be to set up an international data exchange network on the safety and emergency equipment and systems which lorry drivers may find when driving internationally.

Replies to the questionnaire ECMT -- Lorry accidents (1989 figures)

	General data				Special data: accidents involving lorries and injured persons														
Country	Accident (causing injury)	Injured persons involved			Accidents (causing injury)	Injured persons involved													
						In freight vehicle			In private cars			Moto two wheelers			On bicycles			pedestrians		
		fatal	serious	Slight		fatal	serious	slight	fatal	serious	slight	fatal	serious	slight	fatal	serious	slight	fatal	serious	slight
A	46 565	1 402	20 699	39 924	4 723	33	491	997	145	1 144	2 223	34	224	315	13	121	184	37	203	255
B(1)	62 982	1 993	18 308	68 368	4 765	61	444	2 145	1 187	10 090	44 147	212	3 268	9 952	197	1 826	6 130	292	1 782	4 254
CH	31 084	925	11 939	18 220	4 255	7	43	117	41	191	351	19	96	81	12	33	29	11	41	27
D(1)	343 604	7 995	107 848	341 549	30 457	137	1 842	6 255	483	3 501	18 690	9 897	617	990	106	727	1 492	122	582	740
DK	9 922	670	7 266	4 379	753	9	50	38	71	252	162	18	56	11	22	75	27	18	21	12
E(2)	109 804	7 188	52 418	116 993	6 539	199	680	1 551	758	1 957	3 377	99	253	262	16	22	39	111	160	122
F	170 590	10 528	55 086	180 913	10 840	180	678	2 024	1 152	2 596	6 457	156	429	730	56	129	200	150	226	324
GB (1)	253 969	5 230	61 803	266 142	14 775	73	719	2 878	460	2 443	8 348	89	404	673	38	219	517	181	474	876
IRL (1)	6 075	460	8 170		990	21	233	394	31	803		13	82		14	78		--	--	--
N	8 494	381	1 661	9 829	672	4	20	135	49	67	483	4	10	29	2	4	15	11	19	32
NL	44 061	1 456	13 660	36 638	6 164	52	368	1 074	127	601	1 215	50	332	832	86	346	702	31	105	171

1. Data on heavy vehicles for 1988, 2. [<3.5 tonnes] + [>3.5 tonnes]

Chapter II

DRIVER TRAINING AND TERMS OF EMPLOYMENT

1. Introduction

Training is to be taken to mean the preparation for the profession of driver of goods vehicles. Such training comprises preparation for the category C driving permit and any sub-categories with or without trailers, for the certificate required to drive dangerous goods vehicles (ADR), continuous and retraining and any compulsory or elective training to improve the capacities, skills and knowledge of lorry drivers.

This chapter examines ways of improving lorry traffic safety by means of better driver training and also by taking account of drivers' terms of employment: the latter's impact on safety is considerable, warranting examination alongside other aspects more directly related to safety.

2. Driver training

Driver training plays a decisive role in safety, perhaps even more so than road infrastructure, vehicle technical regulations and regulations governing drivers and the entire road haulage sector.

Lorry driver training, one of whose mandatory components is the obtaining of a category C driver's permit or one appropriate to the type of vehicle, is available in all ECMT countries in one of three ways.

Special schooling

Training is provided for students aged 14 or 15 at schools in partnership with hauliers over a period of three to four years, or at vocational training centres.

A diploma is awarded upon completion of the training, which covers actual driving along with other areas related to the profession: social regulations, mechanical skills, etc.

In Switzerland, for example, 10 per cent of drivers have attended such centres. In 1989, the Federal Republic of Germany had 420 000 lorry drivers; according to the "Berufbildungszentrum für den Strassenverkehr e. V." (road transport training centre), only 35 000 had had professional training.

Through the army

Conscripts fulfilling national service obligations can take lorry driver training courses and acquire practical experience. Military permits, granted in accordance with procedures comparable to those applicable to civilian driver's permits can subsequently be converted into civilian permits by a simple administrative formality or after an additional theory exam.

Through direct preparation for the Category C driver's permit

Such training is usually dispensed by driving schools or specialised training schools.

The preparation and examination procedures for Category C permits are governed by specific rules as to age, fitness, and course and examination content.

3. Conditions for obtaining a category C permit

a) ***The minimum age*** restriction for Category C permits in ECMT countries ranges between 18 and 21 years. Category C permits are normally needed for professional reasons and are sometimes obtained by persons aged 18 -- the minimum age -- whereas safety considerations would militate in favour of a greater degree of maturity, and therefore a higher age.

b) ***Prior possession of a Category B permit***

Most countries allow direct access to Category C permits without the need first to possess a normal driver's permit and therefore without any need for previous driving experience. This does not seem very satisfactory, since driving lorries is more difficult and calls for at least some prior driving experience. This anachronistic rule should be repealed in the years to come with the new EEC Directive on driving licences (91/439 of 29 July 1991), which provides that Category C licences may only be issued to drivers already entitled to drive Category B vehicles. Nothing, however, is said as to how long the Category B licence has to have been held.

c) ***Medical examination***

The results of the survey showed that a great majority of ECMT countries require candidates for Category C permits to undergo a prior medical examination to detect any physical or psychological shortcomings incompatible with driving lorries which could be a reason for not granting a permit. This examination is carried out by a doctor or a specialised institute, not by auxiliary medical staff.

However, minimum fitness requirements -- good vision, possession of all four limbs, no history of epilepsy, etc. -- are not yet sufficiently standard. All countries should require thorough medical examinations at regular intervals, either when the permit is being renewed or at other times specified in national regulations.

Many countries have introduced periodic medical checkups whose procedures and frequencies differ.

The adjectives used to describe medical examinations -- "routine" and "thorough" -- have not been precisely defined. Regardless, initial medical examinations must be more thorough, and examinations should be required at set intervals to ensure that drivers always meet the minimum fitness requirements, with permit renewal contingent upon a satisfactory checkup.

d) Another question dealt with in the survey is the **duration of the permit's validity**, and thus the need for renewal or extension.

Even if a permit with no expiry date facilitates administrative procedures, it is necessary to take into account changes that occur with advancing years as the physical and psychological fitness in evidence when the licence was obtained diminish. After a certain age, which of course varies from individual to individual, sharpness of vision and hearing as well as reflexes leave much to be desired without being fully compensated by long experience at the wheel.

Most countries use a system of limited validity -- either periodic renewal, a subsequent medical checkup or a combination thereof -- although there are large differences in respect of expiry dates.

e) Age limit

Some countries have also set an age limit after which Category C permits are no longer issued and the right to drive lorries is suspended. Other countries consider there is no need for an age limit; three countries are of the opinion that permits should not be renewed once the holder has reached the age of 65, 70 and 75 years respectively, taking into account the fact that as of a certain age the permit holder has normally retired and therefore, except for personal reasons and in very rare cases, no longer needs his special C permit.

4. Examinations

The purpose of the examination is to test the theory and practical knowledge and skills needed to drive a lorry safely and to become a professional lorry driver under the best possible conditions.

In particular, drivers must have a general idea of the role of road transport, its organisation and the specific rules applicable, of basic vehicle safety rules and of what to do in the event of an accident. They must also have some basic mechanical knowledge.

The examination is usually divided into two parts, theory and practice; the latter is often broken down into off-road and on-road driving.

Permit categories

A Category C permit is needed in all countries to drive a heavy goods vehicle with a maximum permissible weight of over 3 500 kg (7 700 pounds) in accordance with the provisions of the Vienna Convention on road traffic.

Some countries require a Category E permit to drive articulated lorries, whose total permissible weight is usually high. This permit is also defined in the Vienna Convention.

Training course and driving test content

National provisions in many countries specify the minimum knowledge and skills to be provided during training and tested during the examination. The areas usually covered include:

-- the vehicle: drivers must be familiar with regulations and the location, operating principles and, possibly, maintenance of key vehicle components and equipment; they must also be able to identify the most common causes of breakdowns;

-- road transport: drivers must understand the meaning of the various regulatory documents required to drive a lorry and be familiar with the conditions under which they are issued, how they are valid for and how they are used;

-- driver: drivers must recognise factors affecting their physical fitness and the risks associated with lack of experience;

-- users: applicants for Category C permits must be familiar with the specific characteristics of other users (pedestrians, riders of two-wheelers, motorists, etc.) and assess the resultant risks; they must know what to do in the event of an accident or incident;

-- driving: drivers must be able to control their vehicles whatever the driving situation: preparing the route, getting behind the wheel, positioning the vehicle on the road, adjusting speed to normal and special traffic conditions.

Permit test procedures

Quite a few countries set the minimum technical specifications (dimensions, total permissible weight) for examination vehicles used for practical tests for Category C permits to ensure that these vehicles are as representative as possible.

The test duration is set by each country in national regulations, but must be long enough to ensure that the applicant has the requisite knowledge and skills.

There are also considerable differences in the duration of theory exams and practical tests, with most countries according greater importance to the former. The average length of the theory part is 30 minutes, though it may be as long as one hour. An academic discussion on this point would not settle very much, since the national approach in each case depends on the administrative practices and traditions which have evolved in the country in question. It would, however, be helpful to consider whether the practical part of the test should not be given more importance than the theory part.

5. Further training, retraining and terms of employment

In addition to basic training, which culminates in the award of a permit, professional drivers are also able, or even obliged, to undertake further training or retraining, since they have to be able to adapt quickly to the ever-increasing range of transport conditions, increasingly restrictive competition between modes of transport and between haulage firms, changing regulations and an evolving economic climate.

The recent dramatic conflicts in France between the public authorities and professional drivers has highlighted the problems of the profession and drawn attention to the need to find appropriate solutions. The disputes also reaffirmed the social and economic importance of transport in general, and road transport in particular, to national and international economic activities. Lorry drivers demonstrated their determination to obtain changes to their terms of employment. Training was a key demand.

It should be noted that the special training certificate for the transport of dangerous goods (A.D.R.) is in use almost everywhere, something which without doubt represents progress for this type of transport.

To encourage and reward drivers who undergo further training, some companies offer security of employment. In most countries, drivers benefit from a collectively negotiated contract for a set length of time. Job security can have very beneficial effects for drivers and their families and for their social and professional life, enabling them to do their job safely.

6. Conclusions

Although training for lorry drivers has recently improved significantly in many countries, some shortcomings and deficiencies still need to be remedied. This calls for special attention on the part of governments.

Measures that could further improve training include:

-- ensuring that the drivers of the largest lorries are persons of a certain maturity. This requirement could be met through a fixing of a minimum age (of 21 years, for example), or through professional know-how or gained during the relevant training (apprenticeships);

-- continuing to require or introducing a thorough medical examination before granting a driving permit and also requiring regular checkups during the period of validity of the permit;

-- requiring applicants to possess a Category B permit for a set period of time prior to taking the tests for the Category C permit;

-- developing suitable professional training in line with the practice in all other trades and professions;

-- introducing generally further training and retraining;

-- involving and associating haulage firms and hauliers' federations and unions in such training;

-- promoting a social aim to training in the framework of and rewarded by a social programme such as a collective agreement, bonuses, holidays, early retirement, etc.

Chapter III

THE VEHICLE'S TECHNICAL SYSTEMS

1. Introduction

Lorries, as vehicles, are essentially covered by international regulations. The technical requirements that have to be met for them to be allowed to participate in international traffic are laid down in the Vienna Convention on road traffic.

The provisions are supplemented by the technical rules laid down by the UN. The Community regulations that will lead to the establishment of a Community system of approval in the next few years will of course have to be in conformity with the terms of the Vienna Convention.

In addition to these technical rules applicable during the manufacture of vehicles, the regulations are designed to establish standards for the weights and dimensions of vehicles and rules for technical inspections.

This chapter will not deal with all these technical rules, even though they are certainly concerned with safety, but will be confined to consideration of the supplementary equipment which has a direct impact on safety.

The questionnaire drawn up to ascertain the regulations in force in the various ECMT Member countries contains a list of supplementary equipment which is not claimed to be exhaustive, especially as it may in future have to include new technological developments which are particularly promising in this field. However, the list does provide a fairly precise picture of what can reasonably be expected in the near future. This list provides the basis for this chapter.

The supplementary technical equipment can be broken down into three categories:

-- ancillary equipment or fittings designed to prevent accidents or reduce their effects by improving the technical performance of vehicles, facilitating the task of drivers, or making the vehicle more readily visible to other road users;

-- equipment facilitating compliance with regulations concerning heavy vehicles and their drivers;

-- equipment designed to keep vehicles roadworthy.

2. Systems designed to reduce the risk and severity of accidents

a) Improved technical specifications of vehicles

Many countries have adopted national provisions with a view to:

*Improving the stability of the vehicle and so reducing the ris*k of overturning:

-- by more efficient securing of loads;

-- in the case of tankers, by establishing compartmentalisation standards in such a way as to reduce the movement of liquids within the tanker which can lead to overturning;

-- by fixing a maximum height in proportion to the overall size of the vehicle;

Increasing braking reliability:

-- by making ABS systems a compulsory requirement, in compliance with Community regulations, which make them mandatory for vehicles weighing 12 or more tonnes, together with anti-skid systems to a lesser extent;

-- by laying down specifications for tyres;

-- by compulsory requirement of a retarder, which is particularly effective on steep slopes;

-- by automatic control of trailer braking power so as to prevent jack-knifing;

Reducing the effects of collisions:

-- by fitting:
- at the front, more elastic bumpers and an underrun guard, so as to prevent lower vehicles -- cars and two-wheelers -- from going under the lorry;
- at the rear, underrun guards, which are to be found on all lorries in most countries;
- special side guards, also to prevent other vehicles from running under the lorry;

Work still has to be done with a view to improving structural resistance in the event of collisions.

b) Systems to facilitate driving and reduce the risk of accidents

These primarily relate to:

-- Increasing the **driver's field of vision** by requiring two or even three outside rear-view mirrors whose specifications and dimensions increase the field of vision and reduce or eliminate the blind angle.

Not many countries have introduced further provisions with a view to completely eliminating the blind angle, which can cause fatal accidents (see Chapter I). Neither Community provisions nor the UN/ECE regulations require this, nor do they define the technical specifications precisely. Studies are in hand and the findings are awaited with particular interest as this matter is of considerable concern.

A camera fitted at the rear of the vehicle with a screen on the dashboard to enable the driver to see directly what is happening behind the vehicle, particularly when backing up, is often claimed to be a facility that should be introduced more generally, but so far no country has made it compulsory. Only a few vehicles here and there are equipped with such a system.

-- **Installation** of an audible device to warn other road users that the driver is reversing and/or an ultrasound device informing the driver of any obstacle immediately behind his vehicle.

--- **Improving the ergonomics** of driving is a major preoccupation and precise regulations are laid down for such matters as the layout and visibility of dashboard instruments and even cab fittings and layout as regards, for example, minimum dimensions, not only for comfortable driving but also for the provision of an appropriate bunk for rest during stops, easy access to the cab, etc. All countries are very concerned about everything to do with improving the comfort of the driver, but much remains to be done.

It should be noted that all lorries are now fitted with power steering, another means of making driving easier.

c) Improving vehicle visibility

Many steps have been taken at national level, in most cases in conformity with Community and international provisions, in order to improve both the night vision of drivers by means of satisfactory lights and also to make the lorries themselves visible at night or when visibility is reduced owing to poor weather conditions.

The purpose of the standards laid down for the power and quality of lights is not simply to increase the visibility of lorries and draw attention to their presence and movement, but also to give other road users a better idea of their outline and dimensions, and this is also the case for rear plate lighting, retro-reflectors, reversing lights, mandatory rear fog lights, and signing by means of reflecting materials on the sides of the vehicle at the rear.

Finally, the system of marking the sides of lorries with reflecting materials to make them more visible at intersections or when turning should be introduced on a general basis, in particular for very long vehicles.

d) Although not intended to improve vehicle visibility, another useful safety device is anti-spray flaps, which reduce risks related to a loss of visibility for vehicles following or overtaking lorries.

3. Systems to help drivers to comply with regulations

For some years now, vehicles have been fitted with technical devices used to ensure compliance with regulations and facilitate monitoring.

a) Speed governors

A number of countries have made it compulsory for lorries of a certain tonnage to be fitted with speed governors set at a given ceiling.

The European Community has adopted the system for vehicles of over 12 tonnes and set a speed limit of 90 km/h which lorries cannot exceed.

It would be advisable to ensure the general introduction of speed governors on the heaviest vehicles

in compliance with Resolution No. 91/5 adopted by the ECMT Ministers in 1991 .

b) Tachograph

In almost all countries, every lorry is fitted with a tachograph which continuously records driving and rest periods as well as travelling speeds. These tachographs comply with Community or national standards which validate the data recorded and reduce or even eliminate the possibility of cheating. The requirement that these devices be fitted and used on a general basis is included in ECMT Resolution No. 90/1.

c) Laser or electronic systems

The automotive industry is currently developing radar laser devices that automatically ensure that a minimum safety distance is maintained between vehicles.

These new technologies are of special interest for lorries, frequently involved in rear-end collisions, especially in fog (see Chapter I).

4. Provisions designed to keep vehicles roadworthy

While vehicle design as a whole and the various types of equipment seek to ensure the security of the driver, load and other road users, it is necessary to ensure over time that the essential parts of the vehicle are in sufficiently good condition for it to be roadworthy.

For some years now, Community or national regulations have required that lorries undergo periodic technical inspections to check their roadworthiness. Such inspections are more frequent for lorries than for lighter vehicles.

5. Conclusion

Most of the technical regulations set out above should be in general application since they are covered by Community or even international provisions. Changes will be required in the light of technological developments (such as those taking place in the DRIVE, PROMETHEUS, etc. programmes). It will likewise be necessary to introduce new equipment or further improvements in due course in order to adapt to new traffic conditions and improve the flow of traffic, while at the same time maintaining and increasing the safety and comfort of the driver, since such comfort will in future be essential to safety if nothing else.

Chapter IV

ROAD INFRASTRUCTURE AND SAFETY

1. Introduction

In this chapter, the term "road infrastructure" is not to be taken to mean simply matters relating to road construction as such, i.e. surfacing, the geometry and features of alignment, etc., but also all ancillary infrastructure such as service and rest areas, parking areas, freight terminals, and monitoring installations. The use of existing infrastructure and means of managing traffic such as restrictions or bans, co-ordinated traffic light systems and route determination systems will be discussed in Chapter V, "Regulation".

2. Road design, construction and equipment

Specific physical and technical requirements have to be met by roads in order to ensure that lorry traffic flows safely. It is beyond the scope of this report to provide a detailed analysis of the construction specifications and standards for roads used by lorries, and attention will simply be drawn to certain principles and recommendations in the light of the findings of national and international scientific research.

a) Design

-- One of the main problems with regard to road infrastructure is that technical specifications for carriageways differ according to whether they are designed to carry cars or lorries. Factors such as dimensions, weight, behaviour during acceleration or braking, the driver's sight line, road holding characteristics and kinetic energy affect road construction. Planners are well aware of these problems. However, the road requirements of the different categories of vehicle are not only simply not the same, but in some cases are even incompatible, so it is necessary to find an optimum solution after weighing up these requirements. Such an assessment calls for full information on the different flows of lorry traffic and their specific requirements from the outset of planning. That is the only way that account can be taken of the characteristics of lorries which have the greatest effect on road design and geometry, in particular braking, the rollover threshold, vehicle width and -- at intersections and interchanges -- the tendency to sway and swerve. Even in this case, however, optimal infrastructure cannot be ensured once and for all insofar as traffic volumes and flows can be modified by control measures or new road infrastructure which may give rise to appreciable increases -- higher than initial estimates -- in lorry traffic on particular road sections, lead to premature degradation of the surface of the carriageway -- creation of ruts for example -- and cause accidents. Moreover, it is quite clear that the increase in freight traffic has been underestimated in recent years in most Western European countries. The determination of more reliable methods and, accordingly, greater precision in traffic forecasts would therefore do a great deal to prevent road accidents.

b) Construction and surfacing of carriageways

-- A typical problem arising from the coexistence of light and heavy vehicles is the spraying of water by heavy vehicles, which considerably reduces the field of vision of car drivers. The problem can be alleviated by fitting anti-spray flaps on the vehicle (see Chapter III, "The vehicle's technical systems") and by developing porous pavements (open mixes) to allow surface water to run off quickly. Improved drainage cuts down on spraying, splashing, hydroplaning and dazzle in wet weather, thereby reducing the risk of accidents. Several scientific studies have shown that open mixes should preferably be applied on heavily travelled motorways (more than 35 000 vehicles per day), on sections of road where water poses special problems (viaducts, etc.), and on roads where noise is a particular disamenity, since they reduce and muffle noise whatever the weather.

However, such mixes have their drawbacks (shorter pavement life, higher cost, slightly lower skid resistance in dry weather).

c) Equipment

-- The coexistence of heavy and light vehicles also give rise to accidents in which vehicles run off the road. Lorries that cross the central reserve are often involved in serious accidents. **Guard-rails** are not always equally effective for lorries and cars. Strong guard-rails that check lorries can bounce cars back onto the carriageway, while more flexible guard-rails do not stop lorries. Research involving full-scale tests has been conducted in order to develop guard-rails suitable for both types of vehicle; their use is becoming more widespread. Technical solutions are also being sought to protect lorry drivers from collisions on dangerous corners, engineering structures and sloping banks.

-- It is not unusual for lorries to experience problems on steep slopes (greater than 3 or 4 per cent), often because the driver does not brake soon enough or owing to a technical defect a braking system under strain. Drivers trying to stop their headlong rush have only a limited number of options available (braking against a rock wall, leaving the road on an auxiliary lane, preferably with an upwards grade). One solution consists of providing "**emergency stopping lanes**" on steep sections so that runaway vehicles can be stopped in a bed of gravel. The approaches to these lanes must be clearly indicated, and drivers should be informed and trained on how to use them.

-- Although fires are infrequent in tunnels, their consequences are very serious, particularly when lorries are involved. Preventive measures must be taken, in particular the installation of fire control and surveillance facilities.

Lastly, the critical points and sections of the network used by large numbers of lorries should be the subject of periodic on-the-spot analyses in order to identify measures to improve the safety and ease the flow of lorry traffic.

3. Ancillary infrastructure

The safety and efficiency of lorry transport are determined not only by physical and technical specifications and road construction standards but also by appropriate ancillary infrastructure. This section briefly reviews the main ancillary facilities that are important to transport i.e. service and rest areas, parking facilities for lorries and freight terminals.

a) Service and rest areas

Motorway networks in all ECMT Member countries have service areas with petrol stations, restaurants, retail outlets, toilets/washing facilities, telephones and separate parking facilities for lorries, coaches and cars. Rest areas alternate with service areas, and their layout is similar, but without restaurants or petrol stations. The location of service and rest areas is determined by a variety of factors such as the need to fill up at regular intervals, the comfort and safety of road users, and the availability and cost of land. The distance between areas varies from 10 to 60 km depending on the country. In Germany and Belgium for example, stations are located roughly every 25 km, while in the United Kingdom they are located every 50 km, reduced to 20 km on heavily travelled roads. During the design and development of service and rest areas, particular attention should be paid to the safety of vehicle entrances and exits, the security of parked vehicles and the provision of an adequate number of parking spaces, in particular for goods lorries and coaches.

b) Parking places for heavy vehicles

In many countries, special parking places have been reserved in town centres for heavy vehicles, especially at night or at weekends. However, the restrictions on parking of such vehicles would seem to differ considerably from those on private cars, and conditions vary according to the time of day. In the case of lorries, it would seem desirable for reasons of safety and driver comfort to locate the parking places near to the trunk roads being used but a little way from them. The parking places should be served by public transport systems and have payphones and fire extinguishers. They should also be protected against theft.

c) Freight terminals

Freight terminals are special sites reserved for receiving, dispatching, re-directing, storing and transferring of freight. Since such terminals are often designed, built and operated by private enterprises, little data is available on such matters as access, environment, pollution, etc. In any event, safety considerations require that these terminals have adequate access and appropriate geometrical characteristics and surface area bearing capacity, and also be compatible with the environment and existing urban structures.

4. Conclusions

For safety reasons, roads used by lorries must take account of their requirements and specifications such as dimensions, weight, rollover threshold and braking distances. Planners must be thoroughly familiar with the various traffic flows and volumes and develop reliable traffic forecasting methods for this purpose.

In addition, measures implemented during road construction and with regard to road equipment reduce the risk of accidents attributable to the coexistence of lorry and car traffic. Such measures include: the use of porous surfaces to reduce risks associated with water spray; widespread installation of guard-rails suitable for both lorries and cars; construction of emergency stopping lanes, etc. Finally, well-designed and suitable ancillary infrastructure also raises levels of safety and efficiency of goods transport.

Chapter V

REGULATION

1. Introduction

The use of the road and the public highway in general is governed by legislation and regulations establishing:

-- the conditions for allowing vehicles and persons onto the roads;

-- rules of behaviour with which drivers must comply and regulations on traffic management and the terms of employment of lorry drivers.

Freight transport vehicles, which for convenience we shall call "lorries" in the remainder of this chapter, are subject to the same rules as all other vehicles and drivers, such as the requirement to obey traffic lights, to give just one example.

These common rules are complemented or, in some cases, modified by special regulations to adapt them to the specific characteristics of lorries or the particular conditions in which they operate and their drivers have to work, namely their economic function, the existence of contracts, the professional status of the driver.

A distinction has been made between measures implemented unilaterally by the Member countries and those resulting either from Community provisions or international regulations existing in this connection.

The purpose of this chapter is not to present an exhaustive list of all the rules that apply to lorries, but to indicate only those that have an important impact on road safety in order to identify the measures that remain to be taken, harmonized or extended to all ECMT Member countries.

The conditions for allowing vehicles and persons onto the roads are as a rule related to the technical specifications for vehicles, registration regulations, and the conditions under which permits are issued or those on becoming a professional lorry driver, which are discussed in other chapters of this report and are not therefore considered here.

2. Traffic regulations

The regulations in force in Member countries may be broken down into rules of behaviour, traffic management measures and social regulations governing the professional activities of lorry drivers.

a) Rules of behaviour

In general, the rules of behaviour are of course consistent with the provisions laid down in the international conventions on traffic rules, called the Vienna Conventions.

Speed limits

In all countries, lorries are subject to upper speed limits, which differ according to the type of road network and the maximum permissible weight of vehicles. They are generally lower than those for private vehicles.

However, differences are found in the limits for the same type of road and the same class of vehicle in the various countries; for example, the limit varies from 70 km/h to 100 km/h on motorways, with the majority of countries having opted for maximum speeds of 80 or 90 km/h.

In built-up areas, the speed limit is the same for all classes of vehicle without exception, i.e. 50 km/h. In some countries, however, a lower limit of 40 km/h is imposed on vehicles carrying hazardous goods.

Although the disparity in speed limits between countries can be explained in some cases by differences in topography and infrastructure, it is complicated by the introduction of weight-related limits. However, it should be noted that the regulations are incorporated in each country into a set of rules applicable to goods transport that have been in force for a long time, drawn up at a time when harmonisation of rules, with the exception of that stemming from the application of international conventions, was not a priority.

While no one questions the benefits of speed limits or their positive impact on safety in the case of lorries, complex regulations and the differences in speed limits do not facilitate compliance with regulations, still less their monitoring, particularly with the current expansion of international goods transport.

If speed limits were harmonized with reference to vehicle specifications and road categories that are clearly identified and recognised by all -- and if the regulations were simplified at the same time -- there would be greater compliance with the limits and, accordingly, more safety on the roads.

A few countries -- in fact only the former Czechoslovakia and France -- have also introduced requirement for lorries to be fitted with speed governors that physically prevent them from exceeding a certain speed.

This requirements, together with technical specifications for the speed governors set out in Directive 92/6 CEE of 10 February 1992, will apply to all vehicles of more than 12 tonnes registered in EC Member states on or after 1 January 1995. Other ECMT Member countries, such as Austria, will bring in identical national provisions.

This extension to all ECMT Member countries, based on identical weight and speed limit criteria, would improve safety by bringing speeds down, be a further step toward the harmonization of speed limits, and encourage the technological development of tamper-proof devices built-in at the vehicle design stage.

Blood/alcohol levels

In many countries, drink driving is a less important -- since less frequent -- problem for lorry drivers than for other drivers. The professionalism of lorry drivers, the time spent on the road and the risks inherent in the weight of the vehicle in the event of an accident nonetheless militate in favour of effective regulation.

All ECMT countries, except Morocco, have established a maximum blood/alcohol level above which it is illegal to drive a motor vehicle. The limit, which applies to all drivers irrespective of the type of vehicle, ranges from zero in Poland to a maximum of 0.8‰[ii], with levels of 0.2‰ in Sweden and 0.5‰ in a number of other countries.

Few countries have introduced a different limit for lorry drivers; in Spain the limit is 0.5‰ for lorry drivers and 0.3‰ for those transporting hazardous goods, whereas the general limit is 0.8‰.

The lack of uniformity in the legal limit does not facilitate compliance, even though it can be justified partly on the grounds of sociological differences regarding the consumption of alcohol in different countries.

Everyone today recognises the harmful effects of alcohol on drivers and, as a result, the legitimacy of regulation.

Distance between vehicles

Apart from applying the general rule included in all national road codes whereby driving must be appropriate to traffic conditions, in particular by maintaining a safe distance from other vehicles, few countries set a minimum distance to be maintained between vehicles following one another.

Where a figure has been set, it generally applies to all vehicles and is given in metres or seconds. Even fewer countries have introduced a specific value for lorries.

However, the problem of distance between vehicles is of increasing concern, since vehicles increasingly follow too closely. More in-depth examination could be undertaken in the near future to assess the need to set precise rules and determine appropriate values.

Safety belts

Some countries already introduced compulsory fitting and wearing of safety belts on lorries, or plan to do so. This might have a good effect on drivers' safety.

b) Traffic management measures

The various measures in force in this sphere are aimed at ensuring smooth traffic flow, notably of lorry traffic, in order to reduce unnecessary delays and ensure optimal safety for all traffic. The measures most often implemented include:

-- recommended or mandatory routes for lorries that bypass town centres or specific areas whose physical characteristics are unsuitable for lorries (narrow passages, bridges, etc.); these routes are open and signposted permanently or temporarily to deal with occasional traffic congestion;

-- mandatory routes for specific categories of vehicle in accordance with the type of goods transported, especially hazardous goods;

-- various local measures linked to the road infrastructure or equipment; they are intended to facilitate traffic, notably in built-up areas, and they are also of benefit to lorries: parking regulations, traffic signal cycles, variable signs, etc.

-- lorry parking restrictions in built-up areas have been introduced in some countries, with differing criteria:
  - during specific periods: at night, on Sundays or at specific times of the day;
  - in specific areas: residential areas, around hospitals;
  - for specific vehicles, according to weight.

Here, too, there are differences among countries in terms of whether or not they lay down such restrictions and, if so, in terms of the criteria adopted.

Bans are an important component of the regulations governing lorries, essentially owing to their effect on economic activity.

Bans on lorries are applied on a fairly general basis, though a few countries such as Belgium, Finland, Luxembourg and Sweden do not have any.

They are applicable to vehicles of a given weight, during set periods (usually weekends) and over longer or shorter sections of the road network.

Exemptions exist, general for some categories of goods, but also on an individual basis granted by local authorities.

Bans are warranted in order to ensure a smooth flow of traffic during periods when car traffic is heaviest, improve safety by avoiding the lorry/car mix, separating lorry and car traffic, protect the environment, and comply with social regulations.

Bans differ greatly in the various countries in terms of vehicle weight, road category and, above all, the periods when they are applicable. Although traffic bans are usually in force at weekends, the times when the restriction period begins and ends differ from country to country. Goods traffic is disrupted in the lead-up to the periods, with queues forming at borders which are prejudicial to the entire economy. In addition, compliance with regulations on speed or driving and rest periods can be adversely affected in an attempt to avoid the periods when traffic is banned. Exemptions are often called for on this basis, but a traffic ban becomes ineffective if too many are granted.

During discussions on road traffic management at the meeting of the ECMT Council of Ministers in Paris in November 1992, the Ministers decided that bans should be harmonized, so it now remains for them to agree on the criteria to which the bans are to be based and established procedures acceptable to all.

c) Social regulations

All the countries have regulations laying down maximum periods of uninterrupted driving per day, hours per week and month, and minimum rest periods. They may be national or comply with Community or international provisions.

In general, the vehicles subject to such regulations are those of more than 3.5 tonnes, except in Germany, where vehicles of more than 2 tonnes are also affected.

In most countries, exemptions apply to public service, police and army vehicles and the vehicles of medical or emergency services.

Driving and rest periods differ from one country to another, for example from three to five hours for uninterrupted driving periods to 8 to 10 hours for cumulative driving times per day.

Similarly, the minimum daily rest period varies between 9 and 11 hours, and weekly rest between 32 and 45 hours.

In most countries, the employer has an obligation to ensure that his company's drivers comply with the regulations, subject to penalties and liability in the event of an accident.

For the sake of safety -- and also of competition -- driving and rest periods should be harmonised on the basis of scientific analyses of diminishing levels of alertness. It would also be desirable to adopt a common definition of the terms "driving" and "rest" and to decide in particular, which of these terms covers loading and unloading, administrative formalities and all those tasks that are not properly speaking driving but which are performed by lorry drivers during working hours.

3. Conclusions

Although developed to a considerable degree in all countries, regulations governing lorries with regard to traffic, rules of behaviour and social matters are still deficient in some respects and have not been standardized. Steps need to be taken by ECMT countries to ensure better harmonization of these regulations so that they will be better understood by lorry drivers and, accordingly, be complied with more effectively.

Note

1. In most ECMT Member countries, blood/alcohol is measured in g/l. Since results differ slightly from one country to another, the ‰ measurement is used throughout this section.

   There are widespread calls for a legal blood/alcohol level of 0.5‰, or even zero, to be enforced.

   A draft Community Directive recommends harmonization at a level of 0.5‰ for all drivers, whether of lorries or other vehicles.

However, it should be noted that measurement of blood/alcohol by breathtests and the setting of a corresponding legal limit expressed in grammes/litre of exhaled air is gradually replacing the blood measurement. This will eventually enable more checks to be performed, with fewer physical constraints, thereby increasing the effectiveness of such provisions.

Chapter VI

MONITORING AND PENALTIES

1. Introduction

The need to impose a minimum of traffic regulations became evident at a very early stage, in order both to ensure the safety of the various types of road user and to govern relations among them so as to avoid accidents. All countries therefore established a code of rules for road traffic at the very beginning of the age of the automobile.

It must nevertheless be admitted that regulations handed down by governments are far from sufficient in themselves, as experience has proved. Road traffic regulations are only as effective as the monitoring carried out to ensure that they are respected and when offenders face the risk of being identified and punished.

A questionnaire was sent to all Member countries to ascertain the existing situation and determine what methods, measures and resources were needed for purposes of enforcement and penalties with a view to ensuring satisfactory compliance with traffic regulations.

2. Monitoring

A certain level of traffic monitoring and law enforcement is called for not only to identify dangerous and irresponsible drivers but also to influence the behaviour of road users in general.

It is now recognised that enforcement authorities have to perform two tasks:

-- the first is preventive and educational; the police must first and foremost prevent offences, help road users and teach them the correct way to behave in traffic.

-- the second, however, is the punishment of offences; the police must ensure that offenders are prosecuted if an infringement is detected.

Responsibility for the organisation of monitoring may fall to central or regional government or even to local authorities, depending on the political and administrative structure of the country.

General checks (driving and vehicle licences, condition of the vehicle, tyres, headlights, direction indicators), which therefore also apply to lorries, are carried out in all the countries that replied to the questionnaire. Checks are performed at frequent intervals in two-thirds of them, but only occasionally in the remaining one-third.

Three out of four countries conduct specific checks on lorries (driver and vehicle licences, condition of the vehicle, testing of blood/alcohol levels, length of driving and rest periods, operation of the tachograph). Loads and vehicle weights and the carriage of dangerous goods are monitored in all of the countries. The checks are occasional in three countries out of four and in one out of every two countries the driver is entitled to continue his journey without having to unload excess goods;

everywhere else he is obliged to unload the excess. Only three countries (Spain, France and the United Kingdom) check the working of the speed governor.

Two-thirds of the countries in question considered the co-operation between bodies belonging to the same or different administrative authorities to be satisfactory. Moreover, all the countries consulted want to receive an official notification if the police of another country find that a vehicle registered in their country has obvious technical defects. Almost everywhere there is a central body to which such notification can be sent. In 75 per cent of the countries the vehicle licensing authorities are responsible for checking that vehicle defects have been rectified; elsewhere the task is assigned to the police.

Finally, in around two-thirds of the countries in question the authorities (police, health and safety inspectors) have the power to carry out spot checks within companies to verify whether drivers have complied with regulations on the length of driving and rest periods and, in some cases, speed limits. They can consult the tachograph disks, consignment notes, invoices, etc. for this purpose.

The results of the survey among ECMT members show that practically all the countries carry out specific checks on lorries, with the emphasis especially on observance of the regulations on the length of driving and rest periods (tachograph), loads, weights and the carriage of dangerous goods. Nevertheless, it is known from experience that very often drivers with a CB transceiver in their cab keep each other informed and thus manage to evade police checks by reducing speed before the interception point, by taking a different route or by parking their vehicle at a rest area.

The effectiveness of the monitoring services depends largely on the manpower of the various police bodies, the equipment at their disposal (vehicles, radar apparatus, weighbridges, etc.) and the professional training of the personnel employed to use the equipment and to carry out certain technical checks on vehicles. However, in view of the financial difficulties currently facing the public authorities at all levels, the resources available to the police in terms of manpower and equipment are inevitably being curtailed.

Despite the difficulties due to budget restrictions, it is essential that the road safety authorities do all they can to maintain an optimum level of monitoring and enforcement by operating as cost effectively as possible. Checks must therefore be qualitative and selective and effort must be concentrated on the most dangerous infringements from the point of view of road safety: violations of regulations governing the length of driving and rest periods and breaks, the carriage of dangerous goods, drink-driving and maximum permitted speeds and weights. In addition, checks must be quick, safe, co-ordinated and efficient.

3. Penalties

The object of penalties is to induce the offender to comply with the regulations and to modify his behaviour accordingly. If this objective is to be achieved, however, the penalty must be imposed as soon as possible after the offence has been committed. If the time lapse between offence and punishment is too long, the penalty will have little effect on the offender's future behaviour.

Some countries are applying or studying new techniques to speed up the handling of offences, modify penalties and relieve the pressure on the courts when offences do not involve a serious risk:

-- replacing fines by administrative penalties; this provides for penalties that are imposed quickly and

are therefore more effective in terms of road safety;

-- the direct and immediate collection of fines by the traffic supervision authorities (in the case of minor offences);

-- the creation of a central computerised file on offences so that habitual offenders can be identified more easily.

In addition, penalties must be proportional to the seriousness of the offence and the resultant danger. Thus, some countries have introduced penalties that vary with the infringement, primarily taking account of the resultant danger. Moreover, monitoring and enforcement operations should be widely publicised so that they continue to have a deterrent effect.

The replies received reveal great disparities regarding penal sanctions and administrative measures.

In the majority of countries, some offences (especially speeding or infringement of the rules on the length of driving and rest periods) can be detected and punished by reading the tachograph disks; in around two-thirds of them, this can be done not only on the road but also at the employers' premises. If several offences of the same kind are detected over a given period, the penalties are cumulative in close to half the countries that replied to the questionnaire.

In around half the countries, an employer or superior who induces the driver to commit an offence or does not prevent him from doing so is liable to the same punishment as the driver. In Germany, the punishment is even more severe to take account of the financial advantage obtained by the employer.

In the great majority of countries that replied to the questionnaire (except Switzerland and, in certain cases, Belgium), professional drivers who are guilty of speeding or driving under the influence of alcohol do not receive more severe penal sentences than other drivers committing the same offences.

The survey also revealed that international legal aid is still difficult to obtain in cases of offences committed abroad. The same is true of the international consequences of the permit suspension. In only half the countries do the authorities withdraw the permit of a driver who has committed an offence in a foreign country -- and who for that reason is banned from driving there -- and so act as though the facts and circumstances leading to restriction of the right to drive abroad had occurred on their own territory.

4. Conclusions

The European countries' experience with specific checks on lorries, as summarised in this chapter in the light of replies to the questionnaire, shows that the previous recommendations of the Council of Ministers have generally been put into effect and that all the countries carry out regular checks of this kind, as far as they are able.

Nevertheless, as the frequency of monitoring is a decisive factor in achieving a deterrent effect, it is essential that checks on lorries be stepped up and improved in each country in order to ensure a satisfactory level of compliance with road traffic regulations.

Accordingly, it would be advisable in particular:

-- To carry out more frequent checks on the length of driving periods, daily rest periods and breaks, not only on the road but also on the firm's premises. This is the most effective way of ensuring that regulations on working, driving and rest hours are properly observed. It would therefore improve road safety and help protect the health of professional drivers themselves.

-- To make provision for the penalisation of employers or superiors who induce drivers to commit an offence, or do not prevent them from doing so.

-- To step up the efficiency of checks by using a range of different procedures and types of equipment.

-- To endeavour to impose penalties promptly and give wide publicity to operations to monitor and punish offences that seriously jeopardise road safety.

-- To continue to carry out the technical inspections needed to ensure that the roads and national territory are safe.

-- To develop mutual assistance in legal matters and increase co-operation among countries in order to recognise and enforce suspensions internationally.

-- To increase co-operation among countries with a view to achieving harmonization of the monitoring and penalties relevant to lorry drivers.

Chapter VII

ROAD SAFETY CAMPAIGNS CONCERNING LORRIES

Over the past decade, information and awareness campaigns have gradually come to be accepted as a means of improving road safety. There is a limit to what regulation, signs and signals, and even penalties can achieve, as has been revealed by reports on human behaviour and decentralised road safety policies: other, complementary measures are required to back up and strengthen the role of the State. All countries use information, education and awareness campaigns to help reduce road accidents of all types, and especially those involving lorries. If safety rules are repeated often enough, it may be hoped that they will finally be adopted by road users and become automatic reflexes. "Post-campaign" polls conducted in some countries indicate that at least some good habits may have been adopted. While progress is undoubtedly slow, it is nevertheless steady.

Awareness and information campaigns are as a general rule regarded as an essential supplementary means of promoting safety, a point that was discussed in great detail in the report on ways of influencing human behaviour with a view to improving road safety [CEMT/CM(86)15].

More particularly, the greatest possible stress must be laid on the need to increase the awareness of all concerned: governments, haulage firms, professional drivers and their federations, with a view to developing joint activities. Road safety must therefore be promoted within the haulage business itself, both by drivers and for drivers, within their firms and together with their employers.

Awareness and information campaigns are by and large organised by government at national, regional and local levels. Private initiatives by hauliers, unions and employers' organisations are by no means negligible, however, and in some countries account for the main thrust in certain cases.

When campaigns more specifically target lorry drivers, the topics addressed and advice given relate mainly to conditions of work, rest periods, loading and unloading of goods, especially those which are harmful or hazardous, and the risks to other road users, in particular pedestrians and two-wheelers.

In many countries, drivers who take the point being made and follow the advice given and who are ready to change or adapt their driving to reduce accident risks may qualify for more favourable insurance terms (bonus/surcharge), may be rewarded by their employers (with bonuses or extra days off) or receive fringe benefits from the government (extra holidays, early retirement).

In practical terms, consideration may be given to rising the level of awareness by:

-- creating and promoting a climate of road safety within haulage firms with the participation of hauliers' organisations and federations;

-- ensuring that all concerned are committed to take practical steps to improve safety and inviting them to sign charters to this effect;

-- accentuating the role of social partners.

-- alerting drivers to their professional responsibilities as drivers, providers of services and custodians of material and social goods.

-- alerting them to the imperatives of accident prevention by holding competitions and encouraging discussion between haulage firms and professional bodies.

-- providing rewards and incentives for salaried drivers.

-- promoting the role of user associations and professional federations.

RESOLUTION No. 93/5 ON DRINK AS A FACTOR IN ROAD ACCIDENTS

[CEMT/CM(93)5/FINAL

The Council of Ministers, meeting in Noordwijk on 26 and 27 May 1993:

HAVING REGARD to the Report on "Drink as a factor in road accidents";

NOTING:

-- that the majority of countries have stated that drink-driving is one of their priority for a road safety policy;

-- that the consumption of alcohol, particularly among young people, is still high in most countries;

-- that, in some countries, up to 40 per cent of fatal accidents are alcohol-related and although the statistical systems are improving, they still give in general under-estimated figures on drink/driving percentage breakdowns;

-- that, in all countries, those involved in drink/driving accidents are predominantly males in the younger age groups;

-- that the maximum permitted alcohol level varies from 0.2 g/l to 0.8 g/l for blood tests and from 0.1 mg/l to 0.45 mg/l for breathalyser tests;

-- that, in 40 per cent of countries, blood tests are still the only form of legal evidence;

-- that drink-driving is mainly a structural and social problem;

-- that, in spite of the detrimental effects of the consumption of some medicines and drugs (combined or not with alcohol) on driving ability, no systematic survey on these effects has been performed on a large scale;

-- that, in certain Member countries, a warning symbol is systematically printed on the packaging of medicines likely to impair driving, particularly if these are taken in conjunction with alcohol, and that a Recommendation on this specific issue was unanimously agreed upon within the Economic Commission for Europe in 1988;

RECOGNISING that at national level ministers who deal with social welfare, police affairs and health also have responsibility in campaign against alcohol;

RECOMMENDS THAT MEMBER COUNTRIES

-- continuously fully apply the previous Resolutions (Nos. 12, 21 and 41) accepted in ECMT. These account especially for:

  - the establishment of effective data-collecting systems;

- the continuous making of provisions for a wider range of penalties applicable to persons who drive under the influence of drink;

- the imposing of rehabilitation programmes;

- the carrying out of public campaigns to discourage drink-driving, in co-operation with social and medical welfare institutions;

-- regularly evaluate the results of activities in this field;

-- furthermore, Member countries should:

- adopt, if possible, a maximum blood-alcohol level of 0.5 g/l [1] and determine a similar maximum level for breathalyser test;

- facilitate easier alcohol-level controls, if necessary by promoting the legislative changes to make the breath-test permissible evidence, and ensure that controls may be carried out or developed when there has been neither an accident, or a traffic offence, or any indication of such;

- ensure that drivers are better informed about the additional dangers involved in the taking of certain drugs and medicines, especially when these are taken in combination with alcohol;

- also encourage and develop further research in this field and ensure that new regulations and control methods are based on field experiments;

- ensure co-ordinated and active accident-prevention measures are taken jointly by the ministries concerned with the use and the combined influence of alcohol, medicines and drugs;

- encourage the use of systematic printing of a warning symbol on the packaging of medicines likely to impair driving, particularly if taken in conjunction with alcohol;

INSTRUCTS THE COMMITTEE OF DEPUTIES

-- to follow up the implementation of this Resolution and report back in due course;

-- to continue its work on driving under the influence of medicines and drugs and later, produce a report on this subject.

Note

1. The Delegations of Denmark, Germany, Ireland, Italy and the United Kingdom entered a reservation on this level.

REPORT ON DRINK AS A FACTOR IN ROAD ACCIDENTS

CEMT/CM(93)5/FINAL

I. INTRODUCTION

In spite of the measures that have been introduced in every country to fight against drink and driving, the problem remains a crucial one, and it has assumed a social dimension that is not reflected accurately in the statistics. Accidents due to alcohol are the cause of large-scale economic losses, not to mention the suffering inflicted on victims and those close to them. This is why the Ad hoc Group on Road Safety, which has been involved for the past thirty years in the campaign against drinking in the driving community, has felt it necessary to focus its efforts on the issue once again and to draw up a fresh report. Its aim in so doing is not only to underline the wisdom of the ECMT's previous Recommendations, but also, and more particularly, to establish new and specific lines of action that should be incorporated within a comprehensive and vigorous health programme in order to be effective on a lasting basis.

At both national and international level, there is now a deeper understanding of the effects of alcohol use on driving ability. The knowledge gained has brought effective measures to combat driving under the influence of alcohol. In some cases, these measures have been brought into effect on an international scale. Our task in 1993 should be to assess our achievements in the field of minimising alcohol use by drivers, and to use those assessments as the basis for planning action for the future.

II. REMINDER OF THE EFFECTS ON DRIVERS DERIVED FROM DRINKING

The consequences of drink and driving are closely bound up with the effects of alcohol on the organism and on human behaviour in general, starting with a phase of excitement in which inhibitions disappear and a feeling of mental competence develops, together with the release of somewhat aggressive impulses, often involving the desire to drive competitively.

With high levels of consumption, the brain is affected to the extent that motor functions cease to be co-ordinated. Simple driving routines can still be carried out, but it is more difficult to ensure more complex responses to unusual situations.

Alcohol not only interferes with motor functions, but also affects cognitive functions in a way which is less obvious but which affects driving ability, and thus increases the danger of accidents.

When behaviour and essential functions are impaired in this way, there is a greater danger of involvement in traffic accidents and, generally, of being the party responsible, a risk that increases more and more rapidly as the blood/alcohol level rises.

Researchers have established through statistics that the risk for traffic accidents is three times higher at 0.5 per thousand and 10 times at 0.8 per thousand.

The disturbances are mainly visual:

-- the field of vision becomes narrower so there is a high risk when two vehicles cross each other;

-- perception of distance becomes confused, which has its effect when vehicles are overtaking;

-- a longer time is required for visual responses, and this affects braking;

-- sensitivity to being dazzled by lights is increased;

-- night vision is reduced.

-- vigilance is reduced, and so is resistance to fatigue;

-- co-ordination of movement is impaired;

-- hearing is impaired and the sense of balance deteriorates.

Other, more complex functions are also affected by alcohol, such as decision-taking and risk assessment, owing to the driver's overestimation of himself and his abilities.

III. DEVELOPMENTS ON AN INTERNATIONAL SCALE

Over the past thirty years, international organisations have at various different levels been dealing with many aspects of the problem of drinking and driving.

1. The ECMT

In 1960, 1967 and 1980 the ECMT already adopted resolutions in this connection. These resolutions reflect a trend towards developing a more specific mechanism for dealing with the drink/driving problem.

The 1960 Resolution takes an overall perspective on tackling the problem, recommending measures such as the following:

-- severe penalties for drink/driving offences;

-- introduction of legal provisions to permit screening of drivers suspected of being under the influence of alcohol;

-- fixing the maximum permitted blood/alcohol level for drivers;

-- improving means of educating and informing the public about the risks involved;

The 1967 Resolution was more specific in that it recommended notably the following:

-- improved statistical data;

-- the perfecting and simplifying of detection of drivers under the influence of alcohol through quick check tests;

-- blood tests under specified circumstances;

-- the prescription of a legal blood/alcohol level of 0.8 g/l (which corresponds to 0.8 per thousand);

-- the application of sanctions even if there has been no traffic offence or accident;

-- provision for the withdrawal of driving licences.

In 1980, the Council of Ministers adopted a resolution recommending notably that Member countries takes steps to:

-- assess the role of alcohol in road accidents more clearly and, accordingly, ensure access to results of tests on blood/alcohol levels of injured persons suspected of having caused accidents;

-- promote legislative changes to make possible the use of breath-testing apparatus by police and the establishment of international standards for this apparatus;

-- make legal provision for the withdrawal of licences and their restitution only subject to the offender's participation in rehabilitation programmes;

-- provide better information, particularly among young people, on the risks involved in drinking and driving;

2. Other international organisations

That we are dealing here with a problem of international dimension is illustrated by the fact that, at various points, international organisations other than ECMT have expended considerable effort on trying to find remedies for the drink/driving problem.

The WHO and the OECD, for example, have published a number of papers on the subject of drinking and road accidents, such as:

-- the WHO report **Health For All by the Year 2000**, in which many of the 38 stated targets relate to alcohol abuse in general, and alcohol-impaired driving in particular;

-- the report published by the OECD's S14 Road Research Group in 1979 on the role of alcohol and drugs, and a series of legislative and regulatory measures to be backed up by information, education and rehabilitation programmes.

Another important step to be mentioned in this context is the adoption in 1988 of Resolution 123 by the Principal Working Party on Road Transport of the United Nations Economic Commission for

Europe. This particular resolution urged that national authorities take many important measures to reduce the incidence of driving under the influence of alcohol.

Shortly after the United Nations commission's resolution, the Commission of the European Communities submitted to the Council of Ministers a proposal for an EC directive in 1988 [COM(88)707 Final Office Journal of the European Communities, 31 January 1989]. The principal objective of the draft directive was to reduce blood/alcohol content to 0.5 g/l (which corresponds to 0.5 per thousand), with effect from 1 January 1993.

Due to differences of opinion over the competence of the Commission in this particular field, the proposal was not pursued at the time. The issue is consequently still open to discussion.

Among other initiatives taken in this field figure the International Conferences on Alcohol, Drugs and Traffic Safety (ICADTS), taking place every three years. These conference provide a forum for exchanges of views and information between experts, policy-makers and practitioners. Above all, they are ideal opportunities for evaluating progress to date and drawing up recommendations for future programmes.

At one of these conferences -- T86, Amsterdam -- it was stated, for instance, that by examining statistics and comparing figures from European countries, variations could be observed in driver behaviour under the influence of alcohol that could not be attributed to different legal definitions alone. It thus became clear that the epidemiological methods had to be studied in order to obtain comparable results.

On 9 October 1992, the General Assembly of the International Automobile Federation (FIA) approved a recommendation on drink and driving. This recommendation stresses, once again, the urgency of pursuing the implementation of effective programmes to reduce the number of accidents caused by excessive alcohol consumption.

IV. PRESENT SITUATION

On the basis of a questionnaire issued in 1989, information concerning the present status on driving under the influence was collected from ECMT Member countries. A summary of this information is given below.

1. General findings

a) In the majority of the countries, many traffic accidents are still alcohol-related. In one case, a Member country reports that 39 per cent of killed in road accidents were alcohol-related, as shown in Table 1.

b) Some figures are numbers provided through police forms, others come from studies made with a representative sample of population. The table hereafter is only an example of available data.

c) In general, it must be stressed that there is a strong under-estimation of the exact number of alcohol-related accidents, especially when it concerns the number of fatalities. Since the police is in most

cases not able, or not even allowed, to take blood samples, the official data does not totally reflect the real situation. Several studies indicate that, in reality, up to 40 per cent of the fatalities are alcohol-related.

d) Another factor which makes inter-country data comparison difficult, or even impossible, is the use of different standards. Only general observations will be made at this point.

Table 1. **Fatalities and injuries estimates resulting from alcohol-related accidents**

Country	**Fatalities %**			**Persons injured %**		
	1980	**1985**	**1988**	**1980**	**1985**	**1988**
Austria	14.1	12.6	12.7	8.7	8.1	6.8
Denmark	34	33	30	21	21	19
Finland	13	11	16	12	12	13
France	39	39		20	20	20
Netherlands	14.4	14	9.4	9.3	8.7	6.5
Sweden	8.1	8.6	6.6	5.6	4.4	5.5
Switzerland	21	18	19	12	12	12
W. Germany	22	20	18	13	11	10
Great Britain	14	13	10	5.5	5	4
Portugal		3.7	3.6	--	4.7	4.7

In the majority of cases, casualties result from accidents involving a young male driver (20-30 years old). Apart from young people, the "problem drinkers" group figures large in this field.

As for the highest-risk period, it was generally observed that it was during summer weekends, more particularly in the evening and after dark.

2. Regulations

Table 2 shows the legal maximum alcohol levels permitted for drivers. Blood tests, unlike breath tests, are accepted as legal evidence in all Member countries. Breath tests are not accepted as legal evidence in 30 per cent of the countries.

The following general remarks have to be made in relation to the table:

-- in Nordic countries, the "Widmark" definition for "pro-mille" (per thousand) is used. It means one milligram ethanol per gram blood (weight by weight);

-- in other European countries, the definition for "pro-mille" (per thousand) is milligrams per millilitre and gram per litre (weight by volume).

The result is that one per thousand in Germany equals 0.94 per thousand in Sweden.

Since the differences are not big, we will not go into further detail and we shall use only the value of per thousand.

Table 2. **Maximum blood/alcohol and breath/alcohol levels**

Country	Blood alcohol content per thousand	Breath legal evidence: mg/l
Austria	0.80[1)]	0.4
Belgium	0.80	0.35
Denmark	0.80	pre-test
Finland	0.50	pre-test
France	0.80	pre-test 0.4
Germany	0.80	currently under discussion
Luxembourg	0.80	0.40
Netherlands	0.50	0.22
Portugal	0.50	0.45
Spain	0.80[1)]	0.8[2)]
Sweden[3)]	0.20	0.1
Switzerland	0.80	pre-test
United Kingdom[3)]	0.80	0.35

1. Because certain road-users are especially at risk, the legal level can be lower. For example, Austria applies 0.1 per thousand for new drivers, Spain applies 0.5 per thousand for professional drivers of lorries of more than 3.5 tons and 0.3 for drivers of taxis, buses, ambulance, fire-brigade or police, or vehicles carrying dangerous goods or loads requiring special authorisation for special dimensions and weight. In Germany, a law is in the process of reducing the blood/alcohol level to 0.50 per thousand and making breath tests admissible as legal evidence.

2. Some countries are considering the introduction of 0.5 per thousand, in accordance with the draft EC directive.

3. In the UK and Sweden, the urine test is also legally accepted.

3. Control and enforcement

Most countries report testing of the alcohol levels only for drivers who are involved in road accidents resulting in serious bodily injury, or who are guilty of serious breaches of road safety regulations, or when there is some indication of alcohol absorption.

Some countries provide for the carrying out of checks on the blood/alcohol levels of drivers, independently of accidents or offences. The general tendency here is to ensure that the checks are sufficiently frequent to have a deterrent effect. Checks are therefore carried out at the most critical times and places, especially at night and during weekends. To reduce the number of drink/driving offences, all countries report that drivers are penalised if they exceed the maximum blood/alcohol level. The penalties vary from one country to another and may be penal and/or administrative.

By and large, most countries have established a legal alcohol level over which it will be a punishable offence to drive a car. For quick testing, they encourage on-the-spot checks using electronic devices for measuring alcohol levels in the air expelled.

Some countries have authorised road surveillance services to take administrative measures against offending drivers, on-the-spot and with immediate effect.

Although the actual prosecution and the severeness of possible penalties for people who exceed the maximum blood/alcohol level differ from one country to another, penalties generally range from imprisonment to heavy fines or the withdrawal of the driving licence.

As stated before, a few countries provide for disqualification from driving at the time of arrest and an on-the-spot fine, but in most countries a penalty can only be imposed after a test has been carried out, at a police station for example.

In a small number of countries, more stringent rules are set for drivers with special responsibilities such as the public transport of persons or dangerous goods.

In addition to the "conventional" penalties, some countries also make provision for other measures such as revision courses for habitual offenders. Besides, other countries are attempting to establish specific programmes for the rehabilitation of drivers guilty of repeated offences, by applying additional or alternative sanctions, such as work for the victims of road traffic accidents. Convicted drivers may also attend courses to improve driving performance, in which case their penalties may be reduced.

The picture is somewhat less clear-cut when it comes to more specific data concerning the practical execution of penalties, or enforcement. Some 50 per cent of the countries that responded have no record of the amount of official data produced each year on drink/driving. The majority of countries, however, neither possess nor compile information on the percentage of driving-licence holders who are breathalysed each year.

An interesting observation in this domain is that the technical basis used to detect drivers under the influence of alcohol differs from country to country. The strategy of how to test is very important. Generally speaking, the effort put into police control and enforcement regarding alcohol is dependent in particular on the willingness of the police force. Some countries place the emphasis on deterrence, rather than on detection of offences. These countries claim the highest degree of effectiveness, which they establish using annual official data and the percentage of driving-licence holders whose breath is analysed.

The success of deterrence, it is reported, depends on the degree of importance that drivers attach to four perceptions: the perceived risk of being apprehended; the perceived risk of an accident; the perceived seriousness of any offence; and the perceived severity of penalties imposed.

4. Information and education

By and large, the majority of countries provide counter-measures through education at school, driving lessons and police training courses. Some countries offer special education programmes, while others organise only occasional discussions groups at schools, with police and health services representatives taking part.

Every country organises nation-wide campaigns regularly. Information on the effects of drink/driving is disseminated via television, radio, the national press, magazines, etc.

In 70 per cent of countries, measures are taken to encourage drivers intending to drink to find an alternative means of transport home (sometimes organised specially by the authorities, breweries or other independent bodies).

In addition to the above, a great deal of advertising is devoted to non- or low-alcohol drinks, the promotion of which is in general an important feature in the campaign to combat drink/driving. Here, the authorities often hold regular meetings with brewers' associations to promote these non- and low-alcohol drinks. The majority of countries report that the market for such drinks has grown in recent years.

So far as reward schemes are concerned, only 30 per cent of the countries report that they reward motorists who do not drive under the influence of alcohol. Some insurers increase the premiums of policy-holders found guilty of drinking and driving, some companies do not pay compensation for injury to the driver who drinks, or for damage to his vehicle, the aim being to reduce the level of premiums for drivers who do not drink.

5. Evaluation

The countries concerned see a structural problem in the fact that drinking/driving is mainly a social problem, meaning that drivers who drink very often repeat offences.

Alcoholics find it difficult, moreover, to recognise that they have a problem, but it is felt that a first step can be made in motivating them, for example by offering a cure for alcoholism, and by launching information campaigns, etc. Social and medical workers, too, have a role to play here, more particularly with preventive measures and rehabilitation programmes.

A few of the countries experience structural problems of cultural origin in this area, since the consumption of alcohol is widely regarded as a normal habit.

While some countries consider that a behavioural problem such as driving under the influence of alcohol is best dealt with at national government level, the majority of countries are convinced that Europe-wide policies are to a certain degree the best way to facilitate domestic measures, through the setting of common price and tax policies and low legal blood/alcohol limits, through high and sustained enforcement performance, and through the sharing of research findings.

V. DRIVING UNDER THE INFLUENCE OF MEDICINES/DRUGS

Although this paper is originally focused on the alcohol problem, we cannot neglect the findings in relation to driving under the influence of drugs/medicines. In general terms, these findings can be summarised into three major fields:

-- lack of consistent knowledge of the effect of all different drugs/medicines on driving traffic behaviour;

-- problems in relation to the effect of combined use of drugs-medicine and alcohol on driving/traffic behaviour;

-- problems related to the assessment of drugs/medicine use and the differences between assessments of alcohol use and drug/medicine use.

These anomalies may be aggravated by a number of factors. If drugs or medication are taken at the same time, there may be changes in the metabolism, or a synergy may even occur, increasing the effects. In practice, it is the interaction of alcohol with the most commonly used tranquilisers, i.e. benzodiazepines, that is most dangerous.

Quite apart from illegal drugs - on which many studies are now in hand in a number of countries and which might be dealt with as a separate issue - some industrial products such as solvents and insecticides, but also carbon dioxide, can likewise interfere with vigilance and cognitive functions. Certain physical conditions such as heat-strokes, dehydration, and more particularly fatigue, intensify the effects of alcohol on vigilance, thus increasing the risk of accidents when driving.

In anticipation of solving the above problems, many countries prohibit or advise against driving under the influence of some medicines or drugs which are incompatible with it. Governments do have policies that are designed to prevent accidents caused by drivers whose judgment is impaired by medicines and/or drugs. In practice, this means that most countries have information programmes to warn motorists and machine operators of the dangers of driving or operating machines under the influence of medicines and drugs, especially when these are combined with alcohol. In certain Member states, the Netherlands for example, a labelling warning system exists. This system consists in the systematic printing of a warning symbol on the packaging of medicines likely to impair driving or machine-operating capacity, particularly if taken in conjunction with alcohol.

In order to collect more information on the effect of drugs and/or alcohol on driving and traffic behaviour, a study is currently in progress at Limburg University in the Netherlands on the effects of taking marijuana on car-driving ability. The final results are to be published during the coming months. Initial findings would seem to be similar to those of other studies on the effects of illegal drugs carried out in the United States and France. In particular, a comparison can be drawn between the effects on driving of two marijuana cigarettes and those of an alcohol intake producing a level of 0.5 per thousand.

VI. CONCLUSIONS

-- In all ECMT countries, many of the serious traffic accidents are alcohol-related.

-- In all countries, authorities are aware of the seriousness of the problem and even of the way to tackle it, but when it comes to the execution of the solutions, great difficulties are experienced. Priority is given in most countries to the evaluation of the measures brought forward.

-- In all Member countries, those involved in drink/driving accidents are predominantly males in the younger age groups. In general, the authorities feel big (social) responsibility towards this group. Since the group has a long future ahead, execution of preventive measures is very important here.

-- Although information-gathering systems are improving in many countries, some of the more important statistics on drinking/driving percentage breakdowns, such as those between weekends and weekdays, cannot be provided since the distinction is usually not made.

-- The maximum permitted alcohol level is, in most cases, 0.5 or 0.8 per thousand. In some 60 per cent of countries, breath tests are accepted as legal evidence.

-- Penalties for exceeding the maximum alcohol level also differ very much from one country to the next.

-- In most countries, structures for assessing police enforcement are not available. The techniques used to detect drivers under the influence of alcohol also differ. Those countries which place the emphasis on deterrents rather than detection claim to be the most effective.

-- By and large, the majority of countries provide all kinds of education and information programmes.

-- In only a few countries is the policy to use reward systems.

-- The majority of countries see a structural problem in the fact that drinking/driving is a social problem, as drivers who drink very often repeat offences.

-- A few of the countries experience structural problems of cultural origin in dealing with drinking/driving, since the consumption of alcohol is widely regarded as a normal habit.

-- The recent experiment of drink-driving in combination with drugs/medicine adds a very important aspect to the drink-driving problem. In practice, the symptoms look alike, but have different effects. A basic differentiation needs to be made between legal drugs and medicines and illegal drugs use.

-- While driving under the influence of medicines and drugs is illegal in most of the ECMT countries that responded (almost) none of them have structures for compiling statistics on this subject. The findings of scientific research in this area are still fairly rudimentary in most countries.