RESOLUTION NO. 46 ON MEASURES TO REDUCE THE ACCIDENT RISK OF YOUNG DRIVERS

[CM(85)18]

The Council of Ministers of Transport, meeting in Paris, on 22nd November 1985, **HAVING REGARD** to the attached report on "Measures to reduce the accident risk of young drivers";

CONSIDERING that the risk of accident is considerably greater for young drivers than for older drivers and that young drivers are more likely to be involved in accidents using the vehicle with which they first participate in motorised road traffic;

CONSIDERING that the reasons for the particular accident-proneness of young drivers are mainly inexperience, willingness to take risks and the learning situation of these road users;

CONSIDERING that because of their inexperience and often limited training young drivers are frequently involved in specific types of accident in which they lose control of the vehicle in a critical situation – going off the road, skidding, excessive speed and so forth;

CONSIDERING that their particular willingness to take risks stems from attitudes and behaviour patterns specific to young people and which can have serious effects particularly in motorised road traffic;

CONSIDERING that young drivers after obtaining their driving licence frequently gather experience in road traffic that influences their learning situation in an undesirable direction, such as witnessing violations of traffic regulations, such violation going unpunished, aggressive driving, etc.

RECOMMENDS that the governments of ECMT countries should:

a) Implement measures to improve the unfavourable accident situation for young drivers.

b) Set the minimum age for participation in motorised road traffic sufficiently high with regard to national conditions.

c) Consider the desirability of allowing young drivers initially to ride motorcycles of limited power only for a certain period unless the national legislation provides that the driver's ability is assured through other driving experience.

d) Consider whether a probationary licence should be introduced for new drivers.

e) Examine whether a driving licence should be introduced for mopeds.

f) Encourage the improvement of driving school training and driving tests in such a way that the content is more related to attitudes and behaviour patterns.

g) Step up publicity campaigns for young drivers and road safety education in schools.

h) Consider persuading vehicle manufacturers to use voluntary restraint in their advertising in order to avoid the safety-reducing aspects (e.g. advertisements stressing maximum speeds).

i) Step up traffic policing for the problem areas “driving under the influence of alcohol” and “inappropriate speed”, as these are among the most important causes of accidents among young drivers.

j) Work towards making technical modifications, in particular to increase the maximum speed of mopeds impossible or at least considerably more difficult in countries where such tampering with mopeds is a particular problem.

k) Examine whether importers could voluntarily renounce importing motorcycles with a power exceeding 75 kW.

INSTRUCTS the Committee of Deputies to take all necessary steps to improve the accident situation of young drivers and to report back in due course, taking account of experience in the various member countries.

REPORT ON MEASURES TO REDUCE THE ACCIDENT RISK OF YOUNG DRIVERS

[CM(85)18]

1. Aims and structure of the report

This paper gives an overview of the accident situation of young drivers and of measures already implemented, planned or under discussion in the various countries to reduce their risk of accident involvement.

There are some differences across member countries in the regulations with respect to the definition of vehicle categories and the admission of persons to use these vehicle categories. These regulations are therefore reviewed in Chapter II.

Chapter III contains statistical data on accidents in individual countries, with particular emphasis on a detailed presentation of the younger age groups. Changes in the vehicle stock are taken into account through a comparison of the years 1970 and 1982. The reasons for the particular high accident rate for young drivers have been the subject of research in several countries. The main findings of this research are given in Chapter IV.

Chapter V describes the measures introduced or planned in different countries to reduce the accident risk of young drivers. A distinction is made between regulations governing the admission of drivers and vehicles, measures concerned with driver training and testing, driver improvement courses, road safety education, policing and technical measures.

2. Regulations

For the sake of simplicity, vehicles are divided into just three broad categories,

a) Moped.
b) Motorcycle.
c) Car.

Emphasis is placed on pointing out features peculiar to specific countries.

The following terminology applies to two-wheeled motor vehicles:

Français/French	Anglais/English	Allemand/German
Véhicule à deux roués à moteur	Two-Wheeled motor vehicle	Motorisiertes Zweirad
Cyclomoteurs[1] (engins de 50 cc ou moins, limités à 50 km/h ou moins)	Mopeds (engines up to 50 cc and top speeds not exceeding 50 km/h)	Kleinkrafträder (Mopeds) (Maschinen bis zu 50 cc Hubraum mit einer Höchstgeschwindigkeit bis zu 50 km/h)[2]
Motocycles (engins de plus de 50 cc)	Standard motorcycles (engines over 50 cc)	Motorräder (Maschinen über 50 cc Hubraum)

1. In France, mopeds without automatic drive are not classified as mopeds but as light motorcycles (51 to 80 cc).
2. In Austria, the maximum speed for mopeds is 40 km/h and for light motorcycles 70km/h.

a) Mopeds

In all countries there is a maximum engine capacity for mopeds of 50 cc. The specific regulations for individual countries are shown in the following table:

Table 1. **Provisions for the use of mopeds in Member countries**

	Km/h	Age	Licence	Helmet
Luxembourg	50	16	yes	yes
Portugal	50	16	yes	yes
Yougoslavia	50	16	yes	no
United Kingdom	48	16	yes[a]	yes
France	45	14	no	yes
Austria	40[g]	16	no	yes
Belgium	40[h]	16[b]	nob	yes[b]
Italy	40	14	no	no
Netherlands	40[b]	16[b]	no[b]	yes[b]
Spain	40	16[f]	yes[d]	no
Denmark	30	16	yes[e]	yes
Finland	40	15	no	yes
Sweden	30	15	no	yes
Switzerland	30	14	yes[a]	no
Germany	40[e]	16[c]	yes[c]	yes[c]
Greece	40	16	yes	yes

a) Separate licence not required if rider already holds a full driving licence for car, etc.

b) There is also a slower moped in use (in the Netherlands called “Snorfiets”) with maximum speed of 25km/h in Belgium and in the Netherlands. The same age and licence requirements apply, but helmets need not be worn.

c) There is also a slower and lighter moped with a maximum speed of 25 km/h, for which the minimum riding age is 15, the wearing of helmets is not obligatory and a licence is not required, only a test certificate.

d) Permit. There is no test, simply a declaration that the rider is familiar with the highway code.

e) From 1st January 1980.

f) A “licence” can be obtained at age 14 on passing a theory test.

g) Light motorcycle: 70km/h; age 16, licence and helmet required.

b) Motorcycles

In various countries a distinction is made between two categories of motorcycles. While there is no absolute limit on engine capacity in any country, although a limit of power of 75 kW is looked as desirable in several countries, the upper limits for light motorcycles are as follows: Switzerland and Sweden 125 cc, Germany and France 80 cc. Light motorcycles must not exceed a maximum of 80 km/h in Germany and 75 km/h in France.

The minimum age for riding light motorcycles is 16 in Germany, France and Sweden and 18 in Switzerland. In France the same licence can be used for machines up to 125 cc provided the rider is at least 17. The minimum age for driving bigger motorcycles is 18 in all countries. In Switzerland, before obtaining a licence for a motorcycle with capacity in excess of 125 cc, an applicant must have had at least two years experience in driving a motorcycle of capacity no more than 125 cc.

A driving licence is required for all types of motorcycles in all countries, but attendance at a driving school is compulsory only in Germany and Denmark. All countries require motorcyclists to pass theoretical and practical tests before a licence is issued.

In the United Kingdom, legislation was made in 1981 to:

a) Reduce to 125 cc the maximum size.

b) Provide for a two part test, taken on separate occasions, for learner motorcyclists.

c) Limit the duration of the motorcycle provisional licence to two years. It is then not possible to take out another provisional licence until a further year has passed.

The effectiveness of these measures is currently being reviewed.

Helmets are compulsory in all countries. In several ECMT countries, the use of headlights is compulsory even during daylight hours.

c) Cars

The regulations concerning cars are uniform in all countries. There are no restrictions on engine capacity, powers rpm or top speed in any country. In all countries the driving licence can be obtained at the age of 18 and is compulsory. In Sweden and outside urban areas in Finland the use of headlights is required even during daylight hours.

3. Accident rates of young drivers

Figures 1-3 show the breakdown of accident victims (killed or injured) among moped riders (Fig. I), motorcyclists (Fig. 2) and car drivers (Fig. 3) according to age for the year 1982. The abscissa covers the age groups 15-17, 18-20, 21-24, 25-64 and 65 and over.

The finer breakdown of the youngest age groups permits a more detailed analysis of the problem with which we are concerned.

Because of the different sizes of the age groups and populations in member countries, it would be difficult to compare the absolute accident figures. This data has therefore been converted to show the number of victims per 100 000 inhabitants of the age group concerned for each country. The accident rate can thus be read off from the Ordinate.

A much better comparison of the accident risk of individual age groups could be obtained by relating the accident figures to annual kilometrage, but no such data are available broken down by age group.

Accident figures for 1982 are not available for France, Luxembourg, Portugal and Turkey. Tables with the absolute and relative accident figures and population data are to be found in the annex.

In general the graphs provide impressive confirmation of the very high accident risk of young road users. Accident rates for the 25-64 age group are in virtually all cases substantially lower than for the younger age groups.

Examination of the curves for the different categories of vehicle shows in virtually every case that the most accident-prone age group is that in which users of the vehicle concerned are first admitted to road traffic. For mopeds this is the 15-17 age group and for motorcycles and cars the 18-20 group.

In France it has been determined that in the first year after obtaining their licence drivers are 3 to 4 times more likely than the average driver to be involved in personal injury accidents. This proportion is very stable overtime. It is a phenomenon concerning mainly young males, their accident frequency being 3 to 4 times that of females. This overrepresentation of young people in accidents is particularly marked among motorised two-wheeler riders in France.

There are substantial differences in accident rates across countries for the different categories of vehicle. In the case of moped riders, the highest accident rates are in Austria for the age groups 15-17 and 18-20, with over 1.3% of the 15-17 age group being involved in accidents in 1982. The lowest accident rate for this age group is in Yugoslavia – 0.028%.

In the case of motorcyclists the highest accident rate among 18-20 year olds was in Switzerland (840 per 100 000 or 0.84%), and the lowest again in Yugoslavia (36 per 100 000 or 0.036%).

Lastly, the highest accident rate for 18-20 year old car drivers was in Germany (1 016 per 100 000 or 1.016%) and lowest in Yugoslavia and Greece. (In the case of Greece no precise figures are possible since the population statistics allow no finer breakdown within 15-20 age group.)

Closer examination of the curves reveals that the above general statements about the particular accident of the “new road user” cohorts need some modification in the case of certain countries. This is to some extent due to peculiarities of the statistical system used and differences in the regulations regarding admission to road traffic. Thus in Germany the accident rate for 15-17 year old motorcyclists (611 per 100 000) was higher than for 18-20 year olds (477 per 100 000). The reason is that in Germany the minimum age for driving light motorcycles is only 16 and the accident figures here are included with the figures for all classes of motorcycle.

The purchasing power of young people also affects the figures in some countries. In the case of car drivers, there is no such clear tendency for the youngest age groups to be particularly accident prone in Spain, and no such tendency at all in Greece and Yugoslavia. In these countries, acquisition of a car is presumably not possible until people have worked long enough to reach a certain income level.

Figure 1. **Moped riders killed or injured in each country (year 1982)**

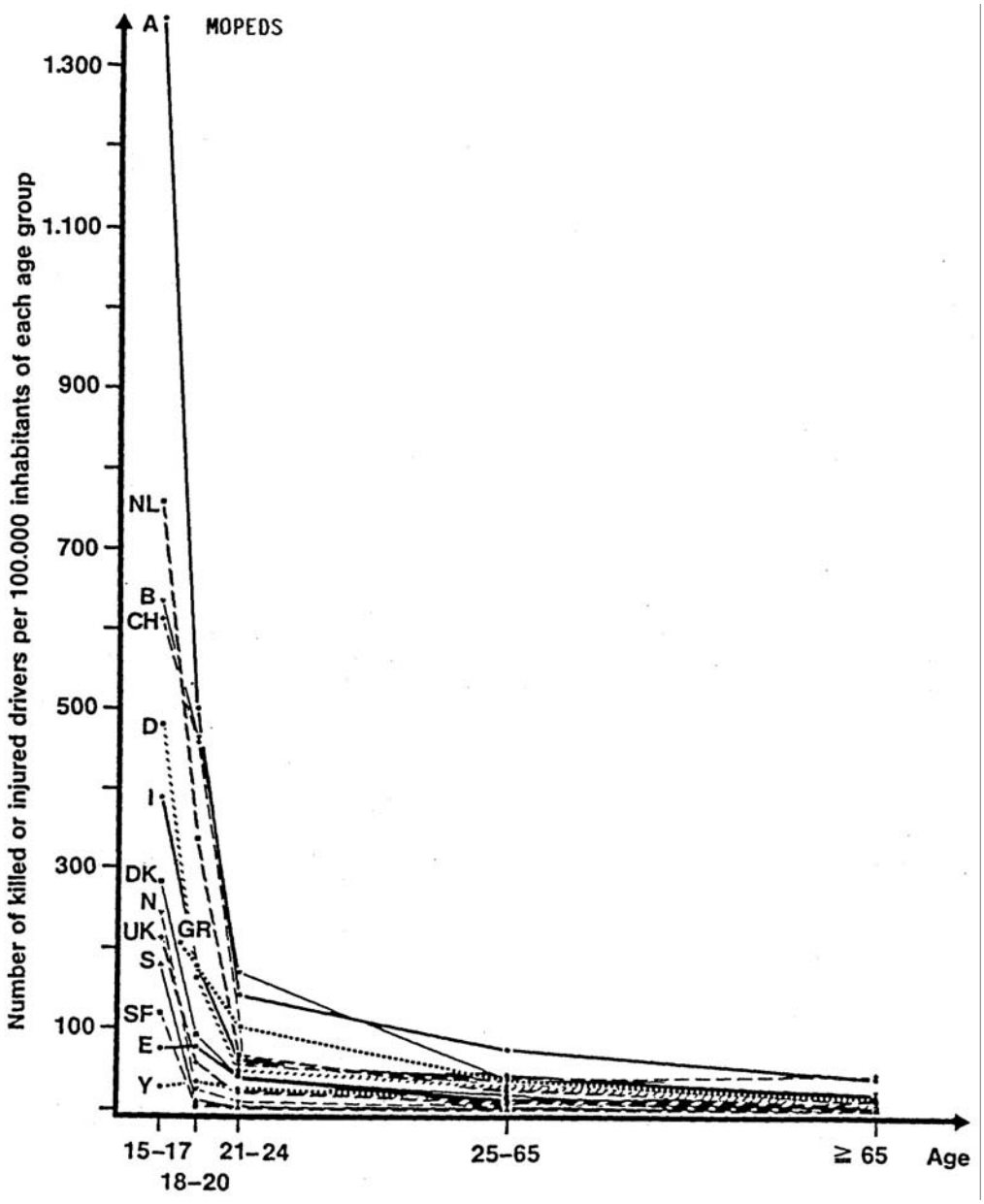


Figure 2. **Motorcyclists killed or injured in each country (year 1982)**

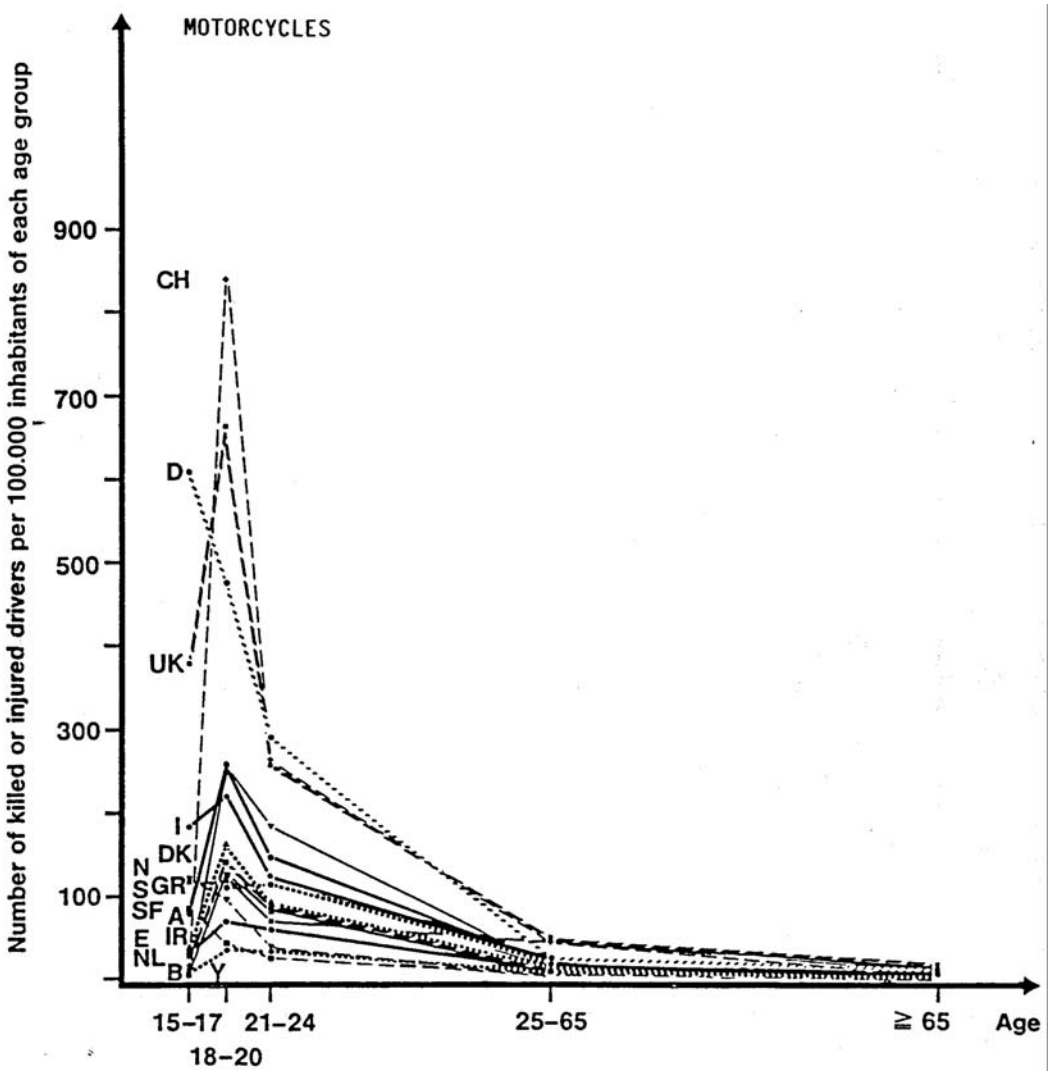


Figure 3. **Car drivers killed or injured in each country (year 1982)**

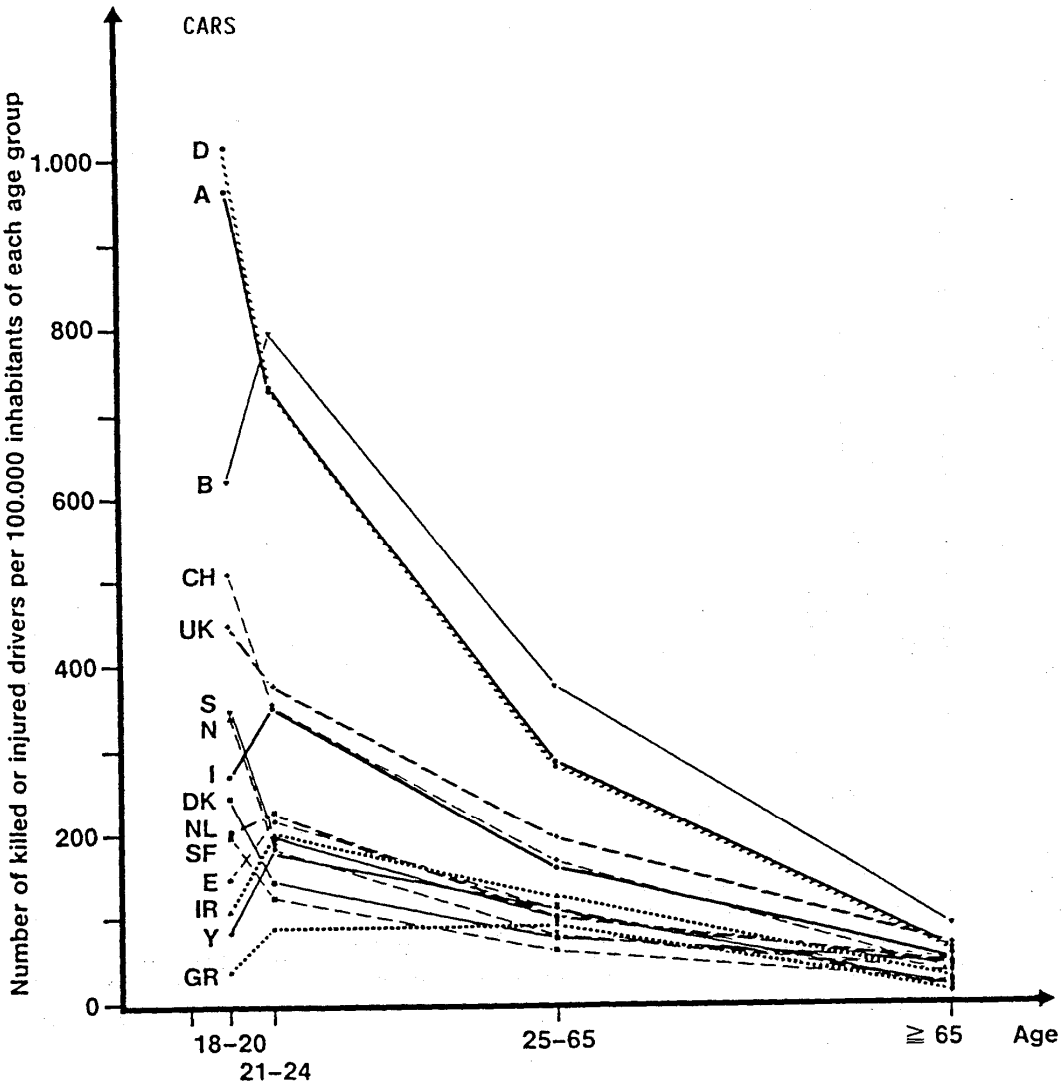


Figure 4. **Mopeds at the end of the year 1970 and 1982 (x 1000)**

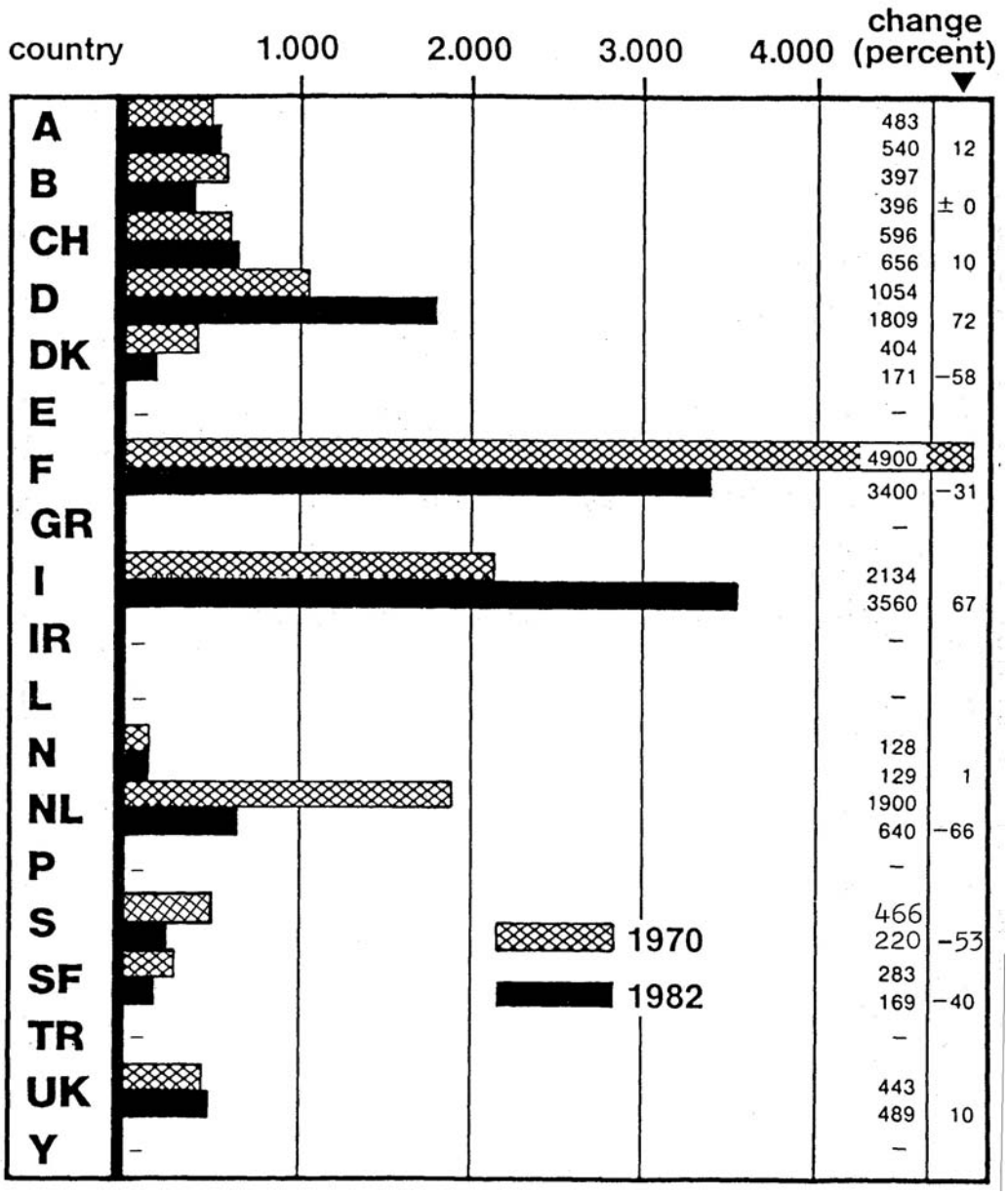


Figure 5. **Motorcycles at the end of the year 1970 and 1982 (x 1000)**

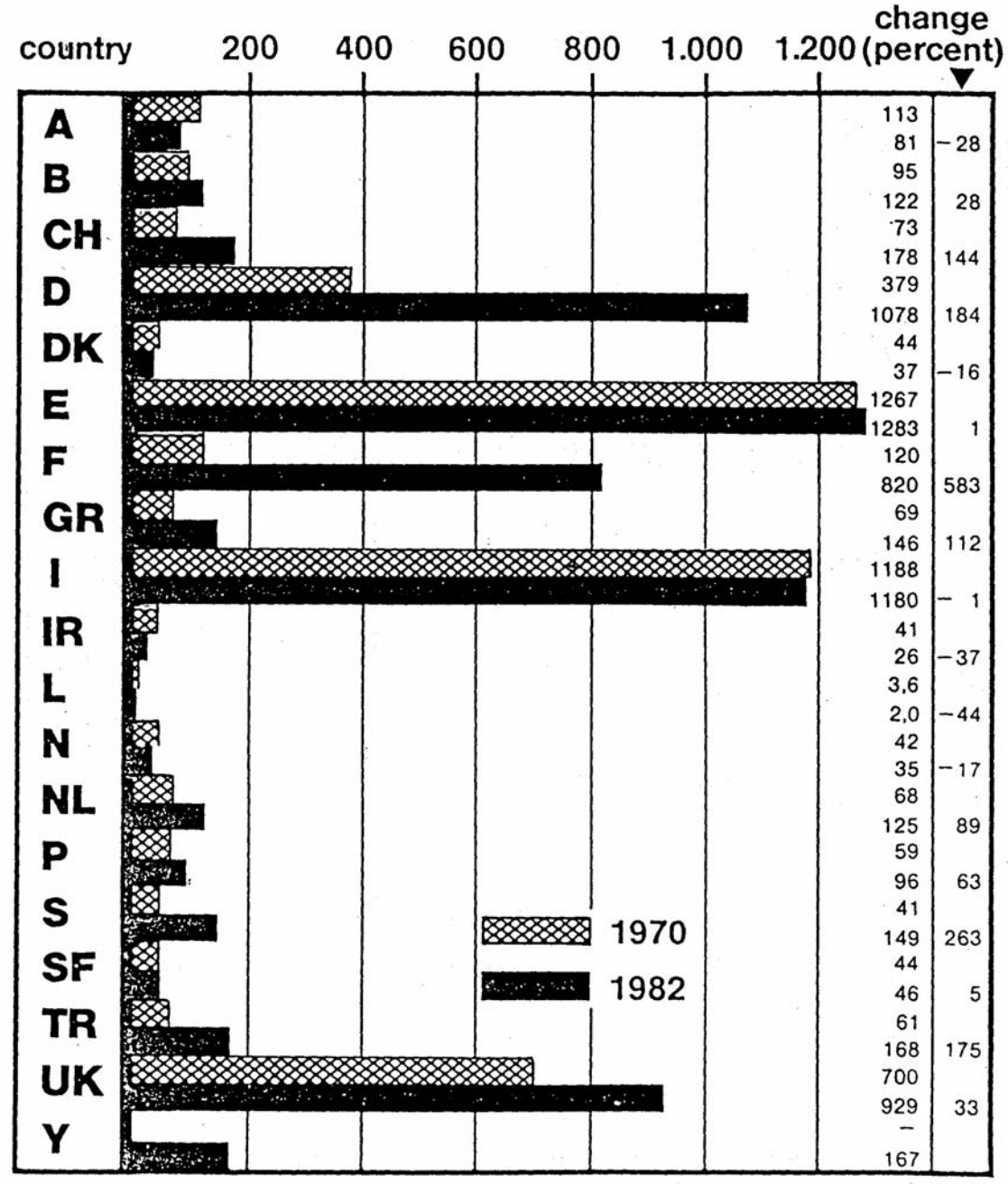
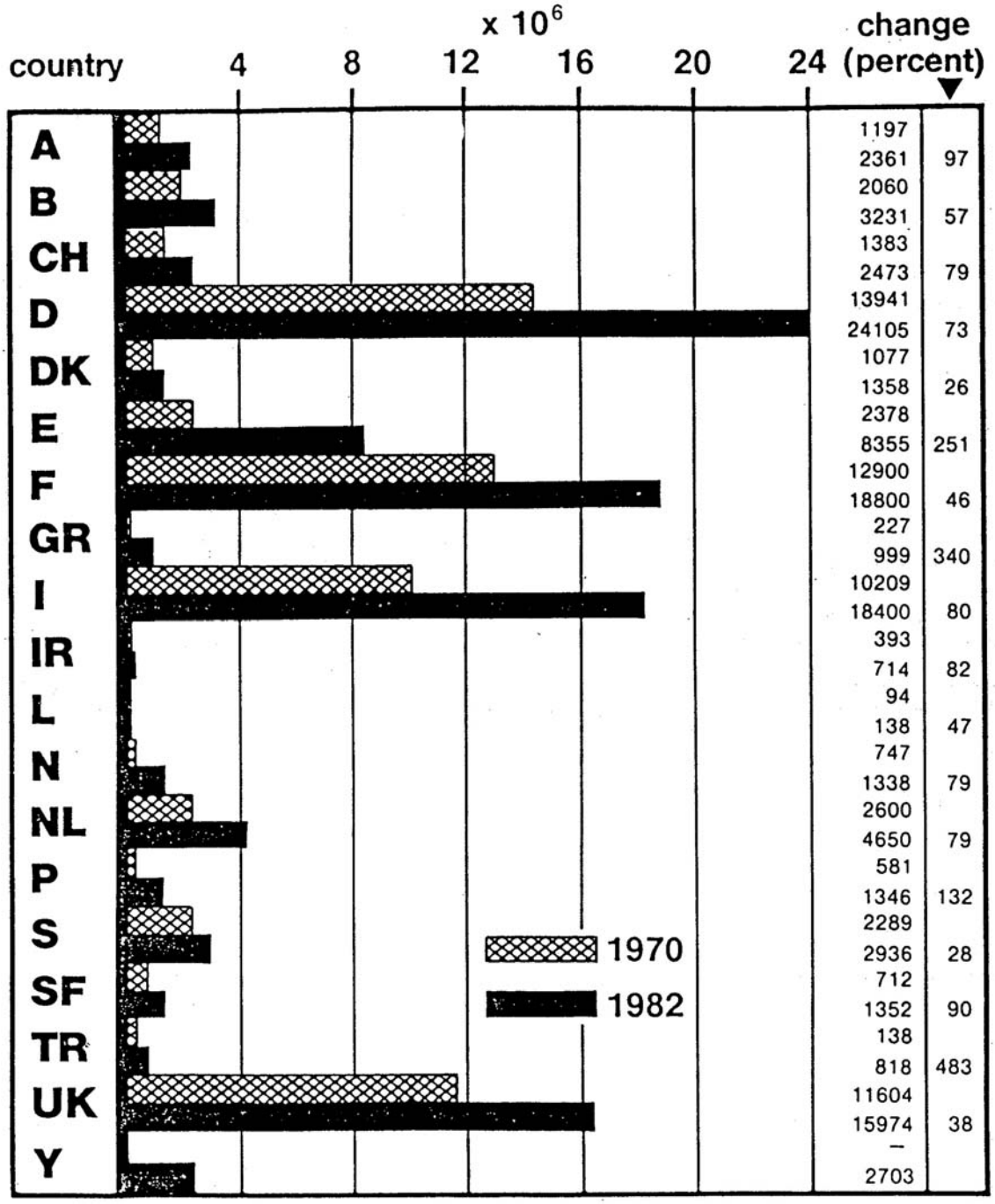


Figure 6. **Private cars at the end of the year 1970 and 1982 (x 1000)**



The probability of accident involvement depends among other things on the number of registered motor vehicles in the country concerned. The rate of increase in the vehicle stock has in some cases been very substantial in recent years, particularly for cars. Figures 4-6 compare vehicle stocks in 1970 and 1982, showing the percentage change.

In the case of mopeds (Figure 4) the picture is not at all uniform — while the vehicle stock increased or remained steady in seven countries, it fell in four.

In the case of motorcycles (not separated from mopeds in some countries) the stock increased in twelve countries and fell in six.

Only in the case of cars was there an increase — sometimes very substantial — in all countries, the fastest growth rate being in countries with initially relatively low car ownership rates (Turkey, Greece, Spain and Portugal).

4. Reasons for the high accident rates among young drivers

In attempting to account for the particular accident-proneness of young drivers, the psychological and sociological aspects will be discussed first. Three main explanatory factors emerge:

a) Inexperience.
b) Propensity to take risks.
c) Learning situation.

a) Inexperience

The inexperience of new drivers means first of all that they are not fully aware of the dangers of road traffic and do not react early enough, or do not always recognise the signs of an impending dangerous situation. Second, new drivers do not yet have a sufficiently developed set of responses to be able to avert dangerous situations themselves. It is obvious that only in the course of time do drivers learn what is important for safety in road traffic.

The importance of inexperience is demonstrated by various findings. Analysis of accident statistics shows that young drivers are frequently involved in certain types of accidents in which the driver loses control over the vehicle in a critical situation - running off the road, skidding, accidents caused by excessive speed, etc. These findings can be interpreted from different points of view. First, they show that young drivers have insufficient control over their vehicles and second, it is often seen as demonstrating a propensity to take excessive risks (see below). It also shows, however, that the potential danger of certain driving manoeuvres is clearly underestimated. This last point can be explained by inadequate knowledge that can only be rectified through training and experience.

Various studies in which the eye movements of experienced and inexperienced drivers have been studied show that experienced drivers are better able to ignore irrelevant details and concentrate on the most important factors. What is important, however, is clearly learnt only in the course of time.

b) Propensity to take risks

Most of the available studies explain the high accident rate among young drivers through attitudes and behaviour patterns specific to young people and in particular their greater propensity to take risks. A risk is not taken simply for its own sake but generally because some advantage is expected from the successful negotiation of a dangerous situation. An understanding of why a greater propensity to take risks can be assumed precisely on the part of young drivers can be obtained by examining the main advantages that may be associated with risk-taking for this age group. In order to do so it is necessary to examine their needs more closely. It is assumed that in the case of young people between 15 and 25 there are typically needs connected with the testing of new experiences and behavioural possibilities; strength and power and the enjoyment of new sensations. In addition, there is the striving towards independence from the parents and hence increasing self-determination instead of heteronomy and a calling into question of the values of the adult world. Lastly, the desire for self ascertain and recognition is important for young people. Investigation of the fields in which young people can satisfy these needs reveals that

participation in motorised road traffic offers particular opportunities since a motor vehicle allows them to try new experiences, achieve independence and find recognition in their social environment. Against this background, the "driving dynamics" type of accident typical of young people and their attitude to risk take on special significance. The motor vehicle tends to some extent to be a crystalising point where young people's needs can be satisfied in an ideal way.

This combination of limited driving experience and above-average willingness to take risks thus largely explains the above-average accident-proneness of young drivers.

c) Learning situation

While the preceding section was concerned with the inexperience of young drivers, this heading deals with the conditions under which new drivers gain experience in road traffic after obtaining their driving licence. These conditions are anything but favourable from the safety standpoint.

The two main sources of experience for new drivers are:

- Observing the behaviour of other drivers.
- Success or failure of their own behaviour in performing traffic tasks.

The behaviour of other drivers is of importance in two respects. First, they can act as a model on which the new driver bases his behaviour, second, the reactions of other drivers show whether he has "done it right" and what he "can get away with" and "what he can't".

From observing other drivers the beginner learns:

- That traffic rules are clearly observed to differing extents and violations are judged according to the particular situation.
- Other drivers often gain an advantage and manage to escape punishment when they violate traffic regulations.
- Other drivers are somewhat inclined to take calculated risks and they come out unscathed.
- If he drives too cautiously, he is harassed by other drivers and clearly made to understand that he "obviously can't drive".

On the whole it must be considered that there is considerable danger of beginners' observation of other drivers influencing them more towards risky than safe driving behaviour.

Deliberate violation of the rules generally occurs when a driver expects some advantage from this unauthorised behaviour. He wants to be quicker, have more convenience (e.g. by taking no notice of a parking ban), show off, and so forth. The problem is that the advantage expected from the unauthorised behaviour does as a rule actually materialise. All too often the individual finds that he can violate traffic rules with impunity. Rule-breaking is thus encouraged in two ways, first, the desired goal is actually achieved (e.g. shorter travel time, less distance to walk to the car on a shopping trip, etc.), second, the threatened punishment is not incurred.

The observation of other drivers is not the only factor that can lead to the abandonment of originally probably good intentions, but also the beginners' own experience that violations of the rules often escape unpunished and undesirable behaviour is thereby encouraged.

Summarising, it is apparent that because of the particular situation of the group in question (inexperience, propensity to take risks, learning situation) conditions are such that the probability of dangerous driving behaviour is increased rather than reduced. It is therefore important to counterbalance the consequences as far as possible wherever the conditions themselves cannot be changed.

5. Measures

In view of the complexity of the influencing factors which combine to create an unfavourable safety situation for young drivers, various countries have planned and discussed a very wide variety of measures in different fields in order to try to reduce this accident-proneness. It would be unrealistic to expect any significant improvement in the situation from any single measure.

This approach can be summarised under the following headings:

a) Regulations.
b) Driver training and testing.
c) Road safety education and information.
d) Traffic control.
e) Technical measures.

a) Regulations

In the final analysis all types of measure mentioned (with the exception of point c) "road safety education and information" involve regulations implemented in the form of laws or rules. Under this heading, however, we consider only those regulations concerned with the admission of persons to participate in road traffic with specific categories of motor vehicle.

In laying down a minimum age, it is assumed that as from a certain age people are mature enough to drive a motor vehicle of a certain category. As is shown by the regulations at present in force (see above) the question of the minimum age is associated with that of the maximum permissible vehicle power in such a way that young age groups are prohibited from driving the more powerful or faster vehicles, while older age groups are allowed to do so.

In Austria there is at present discussion of whether it makes sense to base the assessment of maturity simply on age or whether each applicant should always be examined individually (as is already done in special cases). So far this approach has failed through lack of an answer to the question of how suitable criteria can be established for deciding that a candidate lacks sufficient maturity.

In France an experiment is under way in two departments in which young people of 16 are allowed to drive cars, under certain conditions. This experiment will be extended in 1986 in about ten other departments.

In one German Land, the minimum age for driving a moped (motorised cycle) was experimentally reduced from 15 to 14, though on condition that appropriate moped driving training was undertaken. The results obtained from this experiment show that the accident risk was higher for 14 year olds than for 15 year olds. This regulation will therefore not be extended to the whole of Germany.

In Germany an amendment to the law is being drafted according to which motorcycles of unlimited power cannot be driven by anyone under 20. Motorcycles with a maximum power of 20 kW can be driven from the age of 18.

On the basis of the fact that a driving test can necessarily only be selective and is only indirectly a pedagogic measure, on 1st October 1985 compulsory training will be introduced in Germany even for mopeds, so that in this country there will then be compulsory training for all classes of motor vehicles. In the majority of member countries there is as yet no compulsory training for light motorcycle riders.

b) Driver training and testing

Driving school training can be effective in improving road safety only if it prepares learner drivers for the actual problems they will later have to overcome on their own in road traffic. Increased attention is being paid to improving driving school training in a number of countries (France, Sweden, Spain, United Kingdom, Netherlands, Germany, and Denmark). Closely connected with this is the question of teaching methodology, i.e. the way in which driving instructors organise their teaching sessions and the way in which examiners conduct the test. The main requirements here are a more group-oriented approach in which learner drivers exchange notes and a better integration of practical and theoretical teaching.

The test determines the content and methodology of driver training courses. This is no disadvantage so long as the test is not limited to an oral examination of knowledge of the rules but also contains more probing questions connected with attitude and behaviour-related training goals.

The introduction of audio-visual tests in Austria, France, Belgium, Switzerland and, since 1 January 1984, in the Netherlands, is a significant step in this direction.

Training and testing systems with more complex content and methodology also require more highly qualified instructors and examiners. These questions are currently under consideration in Germany, Austria, France and Denmark.

Certain training goals connected with attitudes and behaviour, the judgement of complex traffic situations and the safe handling of the motor vehicle are very difficult to include in driving school courses. Assuming that the cost to be kept within realistic limits, driver training is too short and the learner lacks the road traffic experience upon which the instructor would need to base himself in order to be understood.

Partly because of this, a two-stage training scheme has been introduced in Norway. Under this scheme all new drivers after they have driven alone in motorised road traffic for a certain time have to return to driving school to consolidate and learn from their experience. Practical exercises (e.g. driving at night and in snowy conditions) are included in this second stage. Similar schemes are being discussed in Germany, Finland and Sweden.

The introduction of phased training for motorised two-wheelers, as planned in Germany, is based on the same concept of a gradual acclimatisation to motorised road traffic. The steps light motorcycle — moped, motorcycle together with the regulations concerning the minimum driving age are obviously not enough to ensure the safe handling of heavy machines. Among other things it is hoped that the regulation that motorcycles of unlimited power cannot be driven by people under 20 means that appropriate experience will first be gained on less powerful machines. In Switzerland, this regulation is applicable since 1977.

The French regulations provide for progressive stages in the driving of motorcycles, the criteria being the power of the machine and the length of time a licence for that category has been held (this period changing for each category). A provisional driving licence is being planned for Germany and is under consideration in France. Under this system the new driver is subject to more stringent driving regulations during the first two years.

If he makes himself conspicuous a series of measures ensue:

First step:	Obligatory further training in which specific beginners' problems are dealt with in seven two-hour sessions and in practical exercises
Second step:	Retaking of the driving test
Third step	Production of the certificate of physical and psychological aptitude

In addition to helping new drivers with problems it is hoped that this regulation will have a generally dissuasive effect, encouraging new road users to drive more carefully. (In Luxembourg a provisional driving licence has already been introduced.)

In Denmark, driver training will in the future begin on special practice areas so that the learner first acquires the necessary skill in handling the vehicle without at the same time having to worry about other road users or traffic signals. In the Netherlands, such areas are available in the country. Only after this will the learner drive in traffic, gradually being familiarised with situations of increasing difficulty. Training will culminate in a course in a special driving centre where handling the vehicle in particularly critical situations (slippery roads, high speeds, etc) will be practiced. This new driver training system is based on a fairly sophisticated programme in which theory and practice are integrated in order to make the learner better able to use his theoretical knowledge in practical situations.

The introduction of an audio-visual test for the theoretical examination is also planned in Denmark. In addition, new guidelines are being drawn up to ensure that special driving manoeuvres are included in the practical test.

c) Road safety education and information

Regarding road safety education in schools, considerable efforts are being made to develop curricula for training moped riders (in Germany and the Netherlands, for example). The school offers an ideal opportunity to reach this age group (15 and 16 year olds) and to organise systematic and thorough training.

Regarding publicity campaigns, there are good opportunities here too for reaching young people as moped, motorcycle or car drivers, though particular care has to be taken to develop modern forms of communication and address to which the target group reacts in the desired way.

Publicity campaigns with the aim of increasing the safety of young drivers could take a two-pronged approach. First, it should be made clear to young drivers what risks they run if they give way in uncontrolled fashion to the pleasures of speed or competition. Second, more experienced drivers should be made aware that they serve as an example for younger drivers.

In order to develop safe driving skills and increase the awareness of danger among young drivers, Germany offers safety training programmes for young people as light motorcycle and moped riders and for young adults as motorcycle and car drivers.

In this connection attention is drawn to the importance of vehicle advertising insofar as this relies on the speed and acceleration capabilities of the vehicle and hence appeals to safety-reducing motivations. In most countries voluntary self-restraint in advertising is considered necessary. In 1984, the French government concluded a protocol agreement of this type with the automobile industry and attaches great importance to it.

In Germany, car and motorcycle manufacturers and dealers have voluntarily undertaken to frame their advertising appropriately.

d) Traffic control

Traffic control related to driver age or experience is impossible for practical reasons, but generally tighter and more effective control can reduce the negative learning effects mentioned above which result from the violation of traffic regulations by other road users who manage to escape punishment. A major area here is speed controls – an area that is particularly problematical for young drivers. Alcohol tests also, however, are concerned with a problem that has increased precisely among young drivers in recent years. All in all, stricter traffic control, both pedagogic and repressive, can have a positive effect on the driving behaviour of young drivers.

e) Technical measures

Technical measures to make vehicles safer are not aimed at any particular age group or at new drivers. Improved breaking systems, seat belts, protective helmets and clothing for riders of motorised two-wheelers or improved signalling through lights, reflectors or conspicuous clothing benefit all motorised road users.

There is nevertheless clearly a particular problem of a technical nature specifically concerning young riders of motorised two-wheelers — tuning. It is obvious that young people's temptation to make their light motorcycle or moped faster through technical modifications is so great that even a legal prohibition and the possibility of serious legal consequences are not enough to make them refrain from "soaping up" their machines. It is therefore desirable to endeavour at European level to make this type of modification technically impossible or at least considerably more difficult.

National regulations of this type can be circumvented through reciprocal acceptance of regulations on the removal of barriers to trade. For this reason regulation at European level should be aimed at.

ANNEX

Figures 7-9 contain data about accident victims (killed and injured) — moped riders (Figure 7), motorcyclists (Figure 8) and car drivers (Figure 9). The countries are designated by the international vehicle identification codes in alphabetical order: A = Austria, B = Belgium, CH = Switzerland, D = Germany, DK = Denmark, E = Spain, F = France, GB = United Kingdom, GR = Greece, I = Italy, JR = Ireland, L = Luxembourg, N = Norway, NL = Netherlands, P = Portugal, S = Sweden, SF = Finland, TR = Turkey, YU = Yugoslavia.

The first line for each country (abs.) shows the absolute figures for killed and injured drivers, while the second line (rel.) gives the number of accident victims per 100 000 inhabitants of the age group concerned in the country concerned. These relative figures were the basis for the graphs in Figures 1-3, the 0-14 age group being left out because of the low figures and unreliable results.

The figure appearing in the “total” column does not always correspond with the total of the data in the individual age group columns, as the former also includes accident victims whose age is not known.

Figure 10 gives population data by age group for the individual countries. This data forms the basis for calculating the relative accident figures in Figures 7-9.

All data for 1982 are taken from: Statistics of Road Traffic Accidents in Europe, 1982, New York (United Nations), 1983.

Figure 7. **Moped riders killed or injured by age group (1982)**

Country		Age						
		0-14	15-17	18-20	21-24	25-64	⩾ 65	Total
A	abs.	41	5 193	1 968	701	2 897	468	11 305
	rel.	3	1 363	502	144	78	42	
B	abs.	29	3 047	2 211	1 082	2 071	273	8 882
	rel.	1	636	465	170	42	19	
CH	abs.	195	1 913	948	275	1 333	407	5 071
	rel.	16	613	460	57	41	46	
D	abs.	180	15 453	5 154	1 880	8 826	1 339	32 891
	rel.	2	481	166	49	28	14	
DK	abs.	27	722	217	124	553	132	1 779
	rel.	3	284	93	42	22	18	
E	abs.	49	1 477	1 532	973	3 099	241	7 454
	rel.	1	77	80	39	17	6	
F	abs.							
	rel.							
GB	abs.	19	6 054	1 633	767	3 207	197	11 921
	rel.	0	213	58	22	12	2	
GR	abs.	68	672	848	733	1 729	97	4 181
	rel.	3	... 208		105	36	8	
I[a]	abs.	2 500	11 051	4 782	2 103	8 786	1 943	31 689
	rel.	20	390	179	65	31	25	
IR	abs.	(Drivers of Mopeds are included under motorcycles)						
	rel.							
L	abs.							
	rel.							
N	abs.	13	487	51	26	110	554	680
	rel.	1	246	27	11	6	9	
NL	abs.	94	5 705	2 584	667	1 727	288	11 083
	rel.	3	760	340	68	24	17	
P	abs.							
	rel.							
S	abs.	60	667	37	10	175	109	1 058
	rel.	3	180	11	2	4	8	
SF	abs.	66	272	8	7	140	73	566
	rel.	7	121	3	2	6	12	
TR	abs.							
	rel.							
YU	abs.	69	307	396	374	1 686	86	2 918
	rel.	1	28	35	25	15	4	

a) 1981 data.
abs. = absolute figures.
rel. = number of accident victims per 100 000 population of the age group concerned.

Figure 8. **Motorcycle riders killed or injured by age group (1982)**

Country		Age						
		0-14	15-17	18-20	21-24	25-64	⩾ 65	Total
A	abs.	3	309	1 014	722	697	49	2 798
	rel.	0	81	259	148	19	4	
B	abs.	2	52	1 209	1 178	982	21	3 554
	rel.	0	11	255	185	20	1	
CH	abs.	–	57	1 730	1 280	1 505	82	4 654
	rel.	0	18	840	265	46	9	
D	abs.	31	19 615	14 842	11 036	7 852	141	53 571
	rel.	0	611	477	290	25	1	
DK	abs.	1	16	330	260	175	5	787
	rel.	0	6	141	88	7	0	
E	abs.	7	683	1 356	1 527	2 074	33	5 748
	rel.	0	35	71	62	12	1	
F	abs.							
	rel.							
GB	abs.	64	10 780	18 820	8 947	13 037	270	52 317
	rel.	1	379	664	258	48	3	
GR	abs.	13	172	620	804	1 056	18	2 707
	rel.	1	108		115	22	1	
I[a]	abs.	113	5 308	5 936	4 068	6 495	386	22 643
	rel.	1	184	222	125	23	5	
IR	abs.	–	77	289	195	155	7	762
	rel.	0	39	163	93	11	2	
L	abs.							
	rel.							
N	abs.	5	241	184	103	61	–	619
	rel.	1	122	97	42	3	0	
NL	abs.	3	46	941	815	665	5	2 479
	rel.	0	6	124	84	9	0	
P	abs.							
	rel.							
S	abs.	10	438	412	315	342	7	1 524
	rel.	1	118	121	72	8	0	
SF	abs.	4	190	99	77	50	5	425
	rel.	0	85	43	25	2	1	
TR	abs.							
	rel.							
YU	abs.	4	124	403	522	1 250	33	2 340
	rel.	0	11	36	35	11	2	

a) 1981 data.
b) Including mopeds.

abs. = absolute figures.
rel. = number of accident victims per 100 000 population of the age group concerned.

Figure 9. **Car drivers killed or injured by age group (1982)**

Country		Age						
		0-14	15-17	18-20	21-24	25-64	⩾ 65	Total
A	abs.	5	71	3 777	3 555	10 545	671	18 647
	rel.	0	19	964	730	284	60	
B	abs.	6	64	2 934	5 053	18 371	1 231	28 417
	rel.	0	13	618	794	374	88	
CH	abs.	1	15	1 049	1 704	5 235	436	8 440
	rel.	0	5	509	353	159	49	
D	abs.	34	633	31 593	27 842	87 831	5 107	153 240
	rel.	0	20	1 016	731	281	54	
DK	abs.	2	41	556	416	1 989	304	3 324
	rel.	0	16	243	141	77	41	
E	abs.	32	70	2 787	5 342	19 346	716	28 602
	rel.	0	4	146	216	108	17	
F	abs.							
	rel.							
GB	abs.	34	2 307	12 701	13 036	52 852	5 373	86 764
	rel.	0	81	448	376	193	64	
GR	abs.	13	46	227	616	4 464	107	5 510
	rel.	1	37		88	92	8	
I[a]	abs.	4	90	7 195	11 472	46 764	2 440	69 278
	rel.	0	3	269	352	166	32	
IR	abs.	–	30	190	420	1 730	99	2 641
	rel.	0	15	107	200	124	27	
L	abs.							
	rel.							
N	abs.	4	40	656	446	1 506	228	2 969
	rel.	0	20	345	181	76	36	
NL	abs.	3	43	1 522	2 198	6 937	678	11 346
	rel.	0	6	201	225	98	41	
P	abs.							
	rel.							
S	abs.	19	51	1 152	852	4 205	650	6 929
	rel.	1	14	338	195	100	47	
SF	abs.	5	18	450	369	1 476	133	2 451
	rel.	1	8	197	122	59	23	
TR	abs.							
	rel.							
YU	abs.	1	53	922	2 605	12 253	186	16 035
	rel.	0	5	82	176	110	9	

a) 1981 data.

abs. = absolute figures.
rel. = number of accident victims per 100 000 population of the age group concerned.

Figure 10. **Population of ECMT countries by age group ('000s)**

Country	Age					
	0-14	15-17	18-20	21-24	25-64	⩾ 65
A	1 477	381	392	487	3 718	1 116
B	1 966	479	475	636	4 906	1 401
CH	1 210	3123	206	483	3 289	885
D	10 803	3 212	3 109	3 811	31 296	9 452
DK	1 021	254	233	296	2 567	748
E	9 533	1 928	1 910	2 470	17 950	4 183
		. . .				
F	11 884	4 276		4 225	26 393	7 307
GB	11 369	2 841	2 834	3 466	27 349	8 461
		. . .				
GR	2 179	732		701	4 833	1 284
I	12 403	2 837	2 676	3 260	28 223	7 742
IR	1 030	197	177	210	1 393	361
L	67.5	16.7	17	23.4	190.5	49.5
N	871	198	190	247	1 987	629
NL	3 073	751	759	976	7 058	1 668
		. . .				
P	2 585	913		828	4 548	1 032
S	1 571	370	341	438	4 218	1 386
SF	957	224	229	302	2 515	586
		. . .				
TR	16 059	4 462		3 538	14 217	1 814
YU	5 488	1 104	1 122	1 480	11 099	2 034