

EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT

**VOLUME II**

**RESOLUTIONS OF THE COUNCIL  
OF MINISTERS OF TRANSPORT  
AND  
REPORTS APPROVED IN 1978**

Brussels, 31st May/1st June 1978  
Paris, 12th December 1978



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*The European Conference of Ministers of Transport (ECMT) was instituted by a Protocol signed at Brussels on 17th October 1953. It comprises the Ministers of Transport of the following 19 countries : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom and Yugoslavia (associated countries : Australia, Canada, Japan, United States).*

*The purposes of the ECMT are :*

- to take whatever measures may be necessary to achieve, at general or regional level, the maximum use and most rational development of European inland transport of international importance ;*
- to co-ordinate and promote the activities of International Organisations concerned with European inland transport (rail, road, navigable ways), taking into account the work of supranational authorities in this field.*

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*Part One*

*RESOLUTIONS*



## GENERAL PROBLEMS

### RESOLUTION N° 34 AMENDING RESOLUTION N° 26 [VERSION DATED 10th NOVEMBER, 1977 - CM(77) 30] CONCERNING THE MULTILATERAL QUOTA FOR INTERNATIONAL TRANSPORT OF GOODS BY ROAD

[ CM(78)11 final ]

The Council of Ministers of Transport, meeting at Brussels on 1st June, 1978,

Having regard to Resolution N° 26 [version dated 10th November, 1977 - CM(77)30] concerning the multilateral quota for international transport of goods by road,

Notes that Member countries are willing to make certain improvements to the provisions concerning the multilateral quota,

#### DECIDES:

- A. The following amendments shall be made to Resolution N° 26 [Version dated 10th November, 1977 - CM(77)30] :
- 1) Article 1, paragraph 3 shall be amended as follows:
    3. Nor shall they affect the provisions for implementing Resolution N° 16 of the Council of Ministers [version dated 14th November, 1977 - CM(77)31], concerning international transport by road and the liberalisation of certain categories of such transport.
  - 2) Article 2, paragraph 1 shall be amended as follows:
    1. The multilateral quota shall comprise 458 licences (hereinafter called "ECMT" licences).
  - 3) Amendment to Article 2, paragraph 2 and Article 3, paragraph 1 of French text (replacement of the word "seront" by "sont") which does not affect the existing English wording.
  - 4) Article 5, paragraph 4 shall be amended as follows:
    4. The competent authorities of each Member country shall provide the Secretariat with the statistics shown in Annex IV, by 15th August and 15th February of each year, in respect of the periods 1st January to 30th June and 1st July to 31st December respectively.
  - 5) Annex I shall be amended to read as follows:



## ANNEX I

## ALLOCATION OF THE MULTILATERAL QUOTA

SERIAL N°	MEMBER COUNTRIES		NUMBER OF LICENCES	NUMBER OF LICENCES IN YUGOSLAVIA
1	Federal Republic of Germany	D	65	54
2	Austria <sup>1</sup>	A	16	13
3	Belgium	B	30	25
4	Denmark	DK	22	18
5	Spain <sup>2</sup>	E	24	20
6	France	F	52	43
7	Greece	GR	18	15
8	Ireland	IRL	16	13
9	Italy	I	30	25
10	Luxembourg	L	16	13
11	Norway	N	18	15
12	Netherlands	NL	42	35
13	Portugal	P	16	13
14	United Kingdom	GB	24	20
15	Sweden	S	19	16
16	Switzerland	CH	20	17
17	Turkey <sup>3</sup>	TR	13	13
18	Yugoslavia	YU	17	17
			458	385

1. For each Member country, 16 licences at most shall be valid on Austrian territory.
2. For each Member country, 30 licences at most shall be valid on Spanish territory.
3. For each Member country, 13 licences at most shall be valid on Turkish territory.

6) A further annex, as shown below (Annex IV) shall be appended:

ANNEX IV  
STATISTICS

The Member countries' authorities concerned shall provide the Secretariat with the following information, by 15th August and 15th February of each year, in respect of the periods 1st January to 30th June and 1st July to 31st December respectively:

Country .....

Number of licences: .....

	TOTAL TONNE-KM CARRIED	AVERAGE TONNE-KM CARRIED PER LICENCE
Bilateral traffic:		
Multilateral traffic: - of which loaded or unloaded in the country where the vehicle is registered:		
GRAND TOTAL		

NOTE : Tonne-Km carried in transit through a country where ECMT licences are not valid must not be taken into account.

B. The present Resolution shall come into force on 1st January, 1979.

The Committee of Deputies is instructed:

- to follow up the application of this Resolution;
- to draw up a co-ordinated text of Resolution N° 26 as now amended; and
- to suggest further improvements to the Council in due course.

RESOLUTION No. 35 AMENDING RESOLUTION No. 16  
[VERSION DATED 14th NOVEMBER, 1977 - CM(77)31]  
CONCERNING THE REGULATIONS GOVERNING  
INTERNATIONAL TRANSPORT BY ROAD AND  
THE LIBERALISATION OF CERTAIN TYPES OF SUCH TRANSPORT\*  
[CM(78)12]

The Council of Ministers of Transport, meeting at Brussels on 1st June, 1978,

Having regard to Resolution No. 16 [version dated 14th November, 1977 - CM(77)31] concerning the regulations governing international transport by road and the liberalisation of certain types of such transport,

Noting that [the majority of] Member countries are willing to make certain improvements to the provisions under the above-mentioned Resolution,

DECIDES:

A. The following amendments shall be made to Resolution No. 16 [version dated 14th November, 1977 - CM(77)31] :

1) The wording of Item a. 3 shall be amended to read as follows:

a. 3 Goods transport in frontier areas up to 25 km on each side of the frontier as the crow flies, provided that the total length of haul does not exceed 100 km as the crow flies. <sup>1, 2</sup>

The area thus defined can be extended by each Member country to suit its administrative organisation, its geographical features or the economic structure of its territory. <sup>2, 3</sup>

In the case of transport between Member countries whose territories are separated only by a stretch of sea, no account shall be taken of the distance travelled on board a means of sea transport specially constructed and equipped for the carriage of commercial vehicles and operated as a regular service. The total distance of 100 km shall be made up of the sum of the distances as the crow flies from the loading point to the embarkation point and from the disembarkation point to the unloading point. <sup>3, 4</sup>

1. The Austrian, Finnish and Portuguese Delegations have entered a reservation on Item a. 3 as a whole.
  2. The Swiss Delegation has entered a reservation on the first paragraph of Item a. 3.
  3. The Spanish Delegation has entered a reservation on the second and third paragraphs of Item a. 3. The Greek, Italian and Turkish delegations have entered a reservation on the third paragraph of Item a. 3.
  4. The German Delegation limits the application of the third paragraph of Item a. 3 to transport between Ireland, the United Kingdom and Germany.
- \* NOTE : On the adoption of this Resolution, reservations concerning provisions in the co-ordinated text of Resolutions 16, 27 and 32, as set out in document CM(77)31, were withdrawn as follows:
- the Spanish Delegation withdrew its reservation on Item a. 14 ;
  - the Portuguese Delegation withdrew its reservation on Item b. 4 in section (d);
  - the Turkish Delegation withdrew its reservation on Item a. 2.

- 2) The wording of Item a. 7 shall be amended to read as follows:
  - a. 7 Transport of damaged or disabled vehicles.
- 3) The wording of Item a. 14 shall be amended to read as follows:
  - a. 14 Transport of spare parts and provisions for ocean-going ships and aircraft. <sup>5</sup>
- 4) The wording of the first sentence of Item b. 2 shall be amended to read as follows:
  - b. 2 Freight transport from a Member country to the frontier area of a neighbouring country and vice-versa; the delimitation of "frontier area" shall be as provided under Item a. 3. <sup>6</sup>

B. The present Resolution shall come into force not later than 1st January, 1979.

The Committee of Deputies is instructed:

- to follow up the application of this Resolution;
- to draw up a co-ordinated text of Resolution No. 16, as now amended and,
- to suggest further amendments to the Council in due course.

5. The German Delegation limits the scope of Item a.14 to the exemption from quota of spare parts for ocean-going ships and aircraft. The Turkish Delegation has entered a reservation on Item a.14.
6. The Finnish, Italian, Portuguese, Swiss and Turkish Delegations have entered a reservation on Item b.2.

RESOLUTION No. 36 CONCERNING THE ACTIVITIES  
OF THE EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT

[CM(78)10]

The Council of Ministers,

Meeting in Brussels on 31st May and 1st June, 1978

HAVING REGARD TO:

- the report [CM(78)10] by the Committee of Deputies on the future role and contribution of the ECMT in the transport field ;
- the Protocol of 17th October, 1953 concerning the European Conference of Ministers of Transport, and notably Article 3 which deals with the purposes of the Conference;

REAFFIRMS:

- the role allotted to the Conference for all matters connected with international activities in the transport field, and especially its inherent suitability for dealing with transport policy options at Ministerial level;
- its role, as defined in the provisions of its Protocol, as regards relations with other International Organisations concerned with transport;

CONSIDERING:

- that the growing inter-relationships between transport modes and the importance assumed by various transport systems call for multimodal co-operation and that problems must be more and more carefully investigated from a multimodal angle;
- that economic development and social progress objectives imply a more closely integrated policy approach which, in the case of transport, means that fuller consideration should be given to matters such as manpower problems, energy, regional planning, the environment and the quality of life;
- that the changing circumstances facing society in our countries as regards the economic situation, the frame of reference and operating conditions of transport systems call for sustained research so as to enlighten the political decision-making process;
- that in determining and implementing transport policy, due regard must be paid to the implications of what is being done with reference to European integration;
- that the ECMT can make an active contribution to the settlement of transport problems;
- that the value of this contribution is due to the ECMT's facilities for free and flexible action because of its structure and working methods;

- that also bearing in mind the co-operation of its Associate Members, the ECMT more particularly provides a forum for the investigation of European transport problems, and that its thinking and guidance can play a promotional role for action to be taken in geographical areas other than that covered by its Member countries.

RECOMMENDS:

- that transport problems should be tackled from a broad angle with due regard to intermodal relationships for passenger and goods transport alike;
- that, in this connection, the Conference should also take into account problems that are extraneous to transport but have a close bearing on it, such as energy conservation, noise and pollution and the special problems concerning transport in urban areas;
- that the Conference's activities, based where necessary on economic research, should be directed towards the preparation of conclusions suitably designed for a policy decision;
- that the Conference should keep under review transport activities of other international organisations in order that Transport Ministers meeting in ECMT may in accordance with their Protocol co-ordinate, promote and direct effort in the international transport field where it is most valuable;
- that the Conference should reorganise its work in such a way as to achieve its objectives with the required flexibility and efficiency;

ADOPTS the Report of the Committee of Deputies on the basis of the foregoing recommendations;

INSTRUCTS the Committee of Deputies to implement the recommendations of the Report.

REPORT FOR THE GENERAL DISCUSSION ON  
"THE FUTURE ROLE AND CONTRIBUTION  
OF THE ECMT IN THE TRANSPORT FIELD"

A. INTRODUCTORY NOTE

The international situation in the transport field is now very different from what it was in 1953 when the Protocol setting up the European Conference of Ministers of Transport was signed.

Apart from many economic and technical developments and changes in the general operation of the transport market during the last 25 years, several major developments extraneous to the transport sector, but having a strong impact on it, have occurred in more recent years. They include the problems raised by the reversal of the economic trend, the widening of the European Economic Community, the energy situation and also the problems arising from the desire for better environmental protection or better land-use planning.

All these changes together with recently revealed new problems affecting transport have not yet been sufficiently reflected in the general guidelines for the activities of the Conference or in its working methods; nor has it yet led to careful inquiry into the future role and contribution of the Conference in the transport field, notably in relation to the work of other international organisations.

Among the international organisations concerned with transport in one way or another, the Conference has many assets. It has political value in bringing together Transport Ministers at regular intervals; it facilitates exchanges of information and ideas between Member countries faced with similar problems and is able to tackle transport problems both in detail and from a very broad angle. The Protocol gives it a special status on the international scene by providing that one of its main purposes is "to co-ordinate and promote the activities of international organisations concerned with European inland transport".

The Conference provides at present an instrument which does not exist elsewhere for international consideration of transport within its whole area.

The resources of the Conference will continue to be largely allocated to work on the three modes of inland transport with a view to serving the general interest and providing the people of Europe with transport facilities that are as efficient as possible. But the general approach to these problems will be on a more comprehensive and multi-modal basis than before. At the same time, the Conference will be more keenly concerned to find solutions to problems specific to a given mode and to essentially practical issues. It will also expand the efforts already begun in the research field by endeavouring to make them match the Council's preoccupations more closely, to ensure wider coverage of all the subjects where more basic research is required and give even better technical assistance to Member countries. The Conference will include in its activities and programmes of work, with more regularity and greater weight than in the past, matters concerning the environment, energy and regional planning, whilst adopting a suitable approach for each subject.

In order to improve the efficiency of the Conference and achieve the objectives laid down, its working methods and procedures must be adapted accordingly. The adjustments envisaged do not, however,

imply a break with the past. What is in fact involved is to bring about changes whilst keeping a steady course. The scope allowed by the provisions of the Protocol of 1953 and their very great flexibility are such that the introduction of a new organisational structure does not call for an amendment of that Agreement.

Roughly speaking, the structural adjustments are intended to strengthen the pre-eminent and central role of the Council of Ministers and the "steering" role of the Committee of Deputies, and to reorganise the subsidiary bodies of the Conference to make them even more effective.

The relations of the Conference with international organisations will be designed in such a way as to re-affirm its functions concerning co-ordination and promotion of their activities. A specific approach is envisaged depending on the kind of organisation concerned.

## B. DRAFT REPORT CONCERNING THE DISCUSSION OF THE COUNCIL OF MINISTERS ON "THE FUTURE ROLE AND CONTRIBUTION OF THE ECMT IN THE TRANSPORT FIELD"

### I. TERMS OF REFERENCE

At its meeting of 2nd November, 1977, the General Transport Policy Committee considered that a Group of Rapporteurs should be appointed to prepare a paper to be submitted at the meeting of the Council of Ministers in May-June 1978 for the general discussion on "the future role and contribution of the ECMT in the transport field". On 3rd November, 1977, the Committee of Deputies agreed to the appointment of this Group.

In the light of the two following main guidelines concerning the matter at issue:

- what future role should be assigned to the ECMT in the political, economic and social context of Europe, having regard to the activities of other inter-governmental or non-governmental international organisations directly or indirectly concerned with transport; and
- what kind of arrangements should Conference make as regards its structure and working methods in order to deal effectively with transport policy problems;

the terms of reference given by the Committee of Deputies were to consider the four following points:

- to review the successive stages of the Conference's past career with special emphasis on recent years;
- to outline the future activities of the Conference in the transport field;
- to determine working methods whereby the general and specific topics selected by the Conference for investigation can be effectively dealt with;
- to specify the arrangements for the relations of the Conference with other international organisations and more generally with the outside world, and for circulating the results of its work.

Special attention should be given to matters concerning the environment, energy and regional planning that have a bearing on transport.

### II. THE PAST RECORD OF THE CONFERENCE

The activities of the Conference from its creation in 1953 to the present day can be roughly divided into three periods:



### 1. The first ten years (1953-1963)

This first period was much influenced by the circumstances in which the Conference was instituted, more especially: the birth of a long stage of sustained economic growth, a new awareness of the importance of policies over-stepping national boundaries and the need to bring transport supply into line with steadily increasing demand.

Without any doctrinal premises, the Conference studied a series of concrete problems which arose in scattered array and dealt with them pragmatically.

At the end of this period, it was found necessary to determine a general transport policy and formulate a programme of work open to yearly revision.

### 2. The second ten years (1963-1973)

During this second period economic growth reached its peak. There was bursting expansion of international traffic, both for passengers and freight; the promotion of such traffic was sought by the authorities concerned.

The continuance of economic growth being taken for granted, the main objective of transport policy was to optimise operation of the transport market. Under the influence of this scheme of things, the Conference adopted its first programme of work in 1963 and made systematic and comprehensive arrangements accordingly.

This programme was based on the choice of a transport policy essentially geared to the distribution of traffic according to the costs of each mode, bearing in mind that the aims were to minimise costs and achieve commercial viability, together with freedom of choice for users and transparency of the market. The underlying objective was to introduce market economy principles in the transport industries by taking action in three directions: liberalisation of the market, harmonization of the terms of inter-modal competition and organisation of the market as regards capacity control, requirements for access to the market and operation of the market.

These ten years of affluence were marked by the rising rate of car ownership and a quickening process of urbanisation. Among other developments, the substantial increase in air transport, for instance, also had important implications for the inland transport system. Chiefly because of such factors, the pattern of personal mobility and freight transport which followed changes in the location of industry gradually became altogether different.

Being anxious to look into the problems arising out of these developments, the Conference widened the scope of its investigations with closer enquiry into urban transport matters and those relating to road safety, road signs and signals and road safety which it had already given attention to during the previous decade.

At the same time, it expanded its economic research and transport documentation activities.

### 3. The recent years - since 1973

Under the pressure of many different kinds of developments extraneous to transport as such, it was found necessary to pay due regard to matters such as the environment, energy and regional planning when considering the transport sector.

Apart from this, because of the economic downturn - the first signs of which appeared in 1974 - inflation and the trade crisis, the transport sector as a whole was very closely hit by the recession which, besides its short-term aspects, also brought to light various structural traffic movement problems concerning the various modes. These different developments did not lead to any basic structural changes in the overall initial programme of the Conference, rather did they bring about adjustments on specific points.

The recession has, however, had some effects on the activities of international organisations: the enthusiasm and optimism with which they used to be regarded has given way to more cautious attitudes and lengthier discussions. Our governments can be seen to be showing more circumspection than before when having to take a decision on matters concerning expansion of traffic and rules for the operation of the transport market.

This tendency became stronger when governments realised that it was impossible for international organisations to solve all the questions relating to transport, even if they confined themselves to the international transport sector, and also because of the effects of routine and habit which ultimately prevent the basic questions from being put, lead to unduly rigid working methods and end up by clouding the objectives, role and purpose of these organisations. The Conference has not escaped this process. More recently, however, our governments have once again shown greater interest in the work of the international organisations.

Furthermore, in recent years the Conference has given importance to the long-term and to the outlook for passenger and freight transport during the coming decades by co-operating in two studies.

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This brief review of the first 25 years of the Conference's career shows that the present frame of reference in which it works is partly due to views which prevailed at earlier stages and that it has not always been possible to give sufficient attention to certain problems which have either arisen recently or which now have a sharper edge than they did before, for instance:

- European integration at the political, economic and social levels;
- the growing inter-dependence of transport modes and the importance assumed by various transport processes inevitably involving inter-modal co-operation;
- transport labour cost and employment problems, bearing in mind that these are anxious and vital issues throughout the whole sector;
- the need to provide a better link between the problems examined from a theoretical angle by economic research and the practical policy concerns of the Council, but also bearing in mind that research must be left some degree of independence if it is to make progress;
- the need to give wider coverage than at present to the technical research field, notably by using the studies conducted elsewhere in order to work out their economic and transport implications and help towards political decision-making;
- factors extraneous to transport, such as the environment, energy and regional planning when studying the transport sector.

However, as the Conference is a specially suitable forum for Transport Ministers having regard to the possibilities it offers as compared with those of other international organisations, and as its Protocol explicitly provides for co-ordination of other international organisations' activities concerning transport, and as its working methods enable it to carry out indepth investigations, it is both able and duty-bound to play an important role in the transport field, especially with reference to international transport, and to contribute to better general standards of living by improving transport conditions.

### III. MAIN GUIDELINES FOR THE FUTURE ACTIVITIES OF THE CONFERENCE

As it has done from the start, the Conference will have to devote the best part of its resources to consideration of the three inland transport modes: road, rail and inland waterway transport.

It will also have to continue to give attention to problems concerning the future development of transport, and always shape the course of its activities with an eye to the general interest by helping to provide the people of Europe with transport facilities that are as fully satisfactory and efficient as possible.

To a greater extent than before, the main guidelines for the Conference's future activity should be seen from a comprehensive angle, more particularly involving a multi-modal approach to anything connected with the operation and organisation of the transport market. The work undertaken must be more tightly geared to true situations, topical issues and lines of thinking.

This readjustment of the working objectives of the Conference must not, however, preclude its continuing to show interest in matters specific to one mode of transport or another, nor could it possibly mean that all its present centres of interest will be scrapped. The solutions to concrete problems must also be an objective which the Conference will try to achieve more systematically than in the past.

Among the main options which should inspire the work of the Conference in future, the following may be mentioned:

1. The multi-modal and comprehensive approach to inland transport problems in their economic, social and technological context

This is essential if inland transport problems are to be seen in their general context. Since the solution given to a specific problem for one mode of transport nearly always has implications for other modes, due regard has to be paid to a multi-modal approach when preparing reports and draft resolutions for the Council of Ministers. To give an instance, simply by way of illustration: it seems reasonable, on the face of it, that a report and resolution on the financial situation of the railways should be prepared by experts on railway problems, but the solutions proposed may well affect waterway and road transport to a greater or lesser degree and may depend on the policy applied to the latter modes. Admittedly it lies with the Committee of Deputies to see to it that problems are looked at from an overall angle, and it is also true that, apart from the hearings of international non-governmental organisations, the representatives of each mode have opportunities to give their views on the reports given to the Council of Ministers. But it is nonetheless clear that, in practice, the reports prepared by a specialised committee or by a group of experts for a single mode do not pay sufficient regard to the implications that the solutions they propose may have for other modes of transport.

Thus, when a report or resolution is to be prepared for the Council of Ministers, and even when a matter specific to a given mode of transport has to be examined, experts in different fields should be involved.

Furthermore, by their very nature, many problems arise for, or in connection with, the three modes of transport. For instance:

- seeking ways of raising productivity and commercial viability of each mode;
- advantages and disadvantages of policies affecting modal split;
- labour cost and employment problems;
- marketing policy;
- transport costs and pricing;
- disparities in terms of competition;
- infrastructure policy and rational use of transport networks;
- more objective use of modal complementarity and of combined transport systems, including investigation of the impact of modes of transport not traditionally examined by the Conference on the three inland modes;
- technical research on the various transport systems and analysis of the economic implications.

## 2. Continuing action

Though many problems must be considered from a multi-modal angle, it does not follow that the activities undertaken by the Conference in recent years must be broken off, nor does it imply a complete revision of the programme of work and the topics hitherto selected within the guidelines traced by the General Transport Policy Committee.

The Conference should not only work as an instrument for exchanging ideas and information on long-term policy objectives and how to achieve them, it should also be a forum where solutions are sought to quite plainly practical problems arising in the transport sector. This doubtless suggests a "step-by-step" policy, but an essentially pragmatic policy such as this can bring about improvements in international transport conditions as regards both infrastructures and transport management. In many cases, the way these concrete problems are dealt with is what has the most direct impact on users. Quite commonly, such problems will be of fairly limited regional scope; in some cases, only a few Member countries will be directly interested, for instance when the object is to eliminate bottlenecks at frontiers or to develop certain routes used for combined transport.

The Protocol of the Conference having provided the required structure for dealing with these matters, there is no reason why they should not be tackled more systematically than in the past.

Consideration might even be given to putting certain existing bilateral or trilateral relationships under the auspices of the Conference. This would give them a wider European interest since other Member countries would be informed and could, if necessary, contribute. By proceeding in this way, the Conference would be better able to extend its activities in a very flexible manner and so increase its efficiency.

## 3. Economic research in the transport field

Economic research must continue to be given clear importance as the Conference is an ideal forum in this respect. Research results should be even more closely geared to the concerns of the Council than they are at present. To this end, theoretical research findings obtained from Symposia or Round Tables should be carefully selected so as to provide Ministers with material for discussion that they will consider attractive, and the production of research findings should be better synchronised to match subsequent discussion at political level.

Technical assistance on a regional basis in the form of economic advice (a process which has already begun with the advisory role occasionally played by the Secretariat for the benefit of certain Member countries and by Regional Round Tables) together with the documentation work begun some years ago - these are activities to be supported and encouraged.

## 4. Environment, energy and regional planning problems

These problems have some common features: they are fairly recent, they are anxious problems and they are extraneous to the transport sector. The relationships between these three factors with transport policy have become increasingly important. It is desirable that the Conference should develop its activities in these fields so as to bring about a fair compromise between the requirements of transport systems and those of the environment, energy and regional planning. This work, carried out notably by using studies conducted elsewhere, would truly distinguish the Conference from other international organisations, draw the attention of the international community more quickly to the specific requirements of transport in this context, and would be most useful to Ministers whose responsibilities include transport.

A suitable approach is wanted in each case:

### a) Environment

Work concerning transport and the environment the quality of life covers a very wide field and is of interest to many international organisations or institutions. Central co-ordination of all these

activities would be difficult, even undesirable, so the Conference should not seek to absorb all the activities concerning transport and the environment. But in view of the Conference's unique role in the transport field, it should proceed in such a way that environment considerations are taken into account in the formulation of transport policy guidelines and measures. In consequence, the Conference should:

- keep constantly informed about the activities of organisations dealing with environment problems which have a bearing on transport; participation of representatives of these organisations in certain ECMT activities could be useful;
- make its own contribution to the solution of these problems involved if required, either by specific studies, or by giving advice on or contributing to the work of other organisations.

b) Energy

The Conference can play a more direct role in the investigation of this matter. Its intervention should be on the same principles as those described for the environment. The energy factor has indeed become a criterion for decisions concerning infrastructure policy and for determination of transport supply; it also has a bearing on the attention given by the Conference to technological developments and their economic implications.

Another field of action that the Conference should carefully consider is the promotion of transport systems that are economically efficient as regards energy consumption. The Conference should also look into the possibilities of more rational use of energy for each mode of transport.

c) Regional planning

Transport is invariably an essential component of regional planning, notably because of the importance of transport infrastructures. This is a matter of primary concern as regards action in favour of European co-operation for economic development and social progress.

Throughout Europe, regional planning is carried out at local authority or government level. With the encouragement of the Council of Europe, the Conference co-operates with the European Conference of Ministers responsible for Regional Planning (CEMAT) and with organisations representing local interests, notably the European Conference of Local and Regional Authorities, in order to begin some co-ordination at international level and investigate the interrelationships between transport and regional planning.

Within the ECMT itself, interest in this matter should be revived by making arrangements for restricted groups to deal with transport problems in a limited geographical context.

#### IV. WORKING METHODS AND PROCEDURES OF THE CONFERENCE

The aim is to enable the Conference to deal with transport problems practically and effectively in order to make political decisions and choices.

Several permanent subsidiary bodies, besides the Committee of Deputies, are at present available to the Council of Ministers for the implementation of its programme of work.

The functions or tasks assigned to most of these bodies are still reminiscent of the issues prevailing at the time when they were set up. Experience shows that this form of organisation for the Conference's work is no longer entirely suitable for a sound approach to the problems which arise. The present "modal" or "sectoral" scheme of things is no longer fully suitable for achieving the purposes assigned to the ECMT as it leads to close partitioning of the activities of committees and working groups and to structural rigidity which make it difficult for questions to be dealt with effectively and thoroughly. It fails to give the right scope for making the best choices as to what the Conference should do because each body is attracted by those topics that are of interest to its members. A review of the ECMT's working methods and the way in which its tasks are allocated to the various working bodies must therefore be envisaged.

Subjects falling within the scope of the ECMT should be considered with a view to submitting to the Council of Ministers problems which require action at policy level. In consequence, having regard to the nature of present inland transport problems, these should, to a large extent, be tackled from a multimodal angle and in such a way that the Conference's working methods and conditions can be flexibly adapted to the practical concerns of the Council and to changing situations and lines of thinking.

#### 1. General guidelines for reorganisation

a) As the Protocol instituting the Conference gives full scope for organisational adjustments, there is no need to revise it.

b) To dispense with minor issues at meetings of the Council of Ministers more effective use should be made of the Protocol's provisions (Article 6) for delegation of authority to the Committee.

c) Provision should be made for the more efficient use of restricted groups on the lines specified in the Protocol. Experience in fact shows that many problems have bilateral or multilateral practical aspects of limited scope.

d) The organisational structure should be so designed that problems can be tackled from a multimodal angle.

e) The ECMT should adjust its working methods and structure with due regard to the activities of other international organisations so as to give the utmost effectiveness to its own proper contribution to the implementation of transport policy at European level.

#### 2. The Conference's new organisational structure

The ECMT's work must be organised with an eye to the fact that the Committee of Deputies is the body responsible for giving effect to the Council's decisions and preparing its meetings. It is also the body which has most competence for organising the Conference's work, particularly for setting up the "subsidiary" bodies which give it support.

Hence, except for the restricted groups whose special status and role are laid down by the Protocol, the other subsidiary bodies are simply "lower-gearred" offshoots of the Committee of Deputies.

In the light of the foregoing considerations, the Committee of Deputies should restructure the Conference's machinery on the following lines:

- Winding up of the Railways, Road Transport, Inland Waterways and Investment Committees to ensure a multimodal approach to problems in these sectors.
- In view of the continuing nature of problems concerning road traffic, road signs and signals, road safety and economic research, the Committees dealing with these subjects should be retained.
- The case of the Urban Transport Committee deserves special attention, notably because of the relations the ECMT maintains with other international organisations (e.g. OECD). The ECMT must therefore retain a special urban transport body, of limited membership, in order to deal with problems of transport co-ordination in urban areas.
- The collection of data, so far undertaken by the Investment Committee, will be taken over by a drafting group, chaired by the Secretariat of the Conference, which will draw up the annual report drafting group which will also take stock of the Conference's statistical requirements.

The introduction of these arrangements means that the programme of work of the Conference, and the conditions of its performance, must be carefully defined. If the new structure is to work effectively, the topics to be dealt with, and the timing and other arrangements for their investigation before submission to the Council of Ministers must be clearly determined. To this end, the Committee of Deputies will be assisted by an ad hoc Committee composed of a few delegations which will meet,

together with the Officers of the Committee of Deputies and the Secretariat immediately after the meeting of the Council of Ministers to determine the guidelines for the Conference's work in accordance with the political will expressed by the Council.

The purpose of this ad hoc Committee is not, of course, to take over the responsibilities of the Committee of Deputies, but simply to enable that Committee to come to a decision as efficiently as possible on its own responsibility as to what action should be taken in the light of the discussions and decisions of the Council of Ministers.

In this new structure, whatever the committee or group concerned, the chairman's term of office must not exceed five years.

The new structure will be introduced gradually and the change will be completed by 1st January, 1979.

### 3. Ministerial Meetings

The traditional procedure whereby the Conference generally holds Ministerial meetings in June and December, raises certain practical problems, notably with regard to delegations' other engagements and the preparatory work to be done by the Secretariat. It has been suggested that the meetings should be held at the end of May and October. It will be for the Council of Ministers to decide on this point.

It is proposed that the agenda for one of the two Council meetings should continue to include a topic of general interest, as was the case in December 1976 for urban transport and in December 1977 for the railways.

## V. ECMT RELATIONS WITH OTHER INTERNATIONAL ORGANISATIONS AND THE OUTSIDE WORLD. CIRCULATION OF THE RESULTS OF ECMT ACTIVITIES

Of all the international organisations concerned in one way or another with transport, the Conference has a unique status in that its main purpose is the periodical meeting of Ministers responsible for transport.

It must also be borne in mind that the Protocol signed in 1953 explicitly provides, under Article 3, that one of the tasks of the Conference is to co-ordinate and promote the activities of international organisations, and that another of its tasks is to prepare agreements.

### 1. Relations with the European Economic Community

Nine Member countries of the Conference are also Members of the EEC. The treaty under which the EEC was established provides for a common transport policy. These provisions are gradually implemented by a series of measures, usually on specific points, that are binding on Member states.

The EEC is represented at meetings of the Council of Ministers and Committee of Deputies by the Member State which holds the chairmanship of the Council and by the Commission, but is not a full Member of the Conference and has no vote. The Commission can also participate in the work of certain subsidiary bodies of the Conference.

All Members of the Conference are not Members of the EEC; furthermore, the Conference is a convenient forum for Transport Ministers and its working methods enable it to investigate certain matters in depth. Its Protocol also gives it a special status among all the international organisations dealing with transport. For these reasons, the Conference is and will remain the only forum of its kind, even for countries belonging to both Organisations. Other factors in support of this claim are the differences in the kinds of decisions taken by each Organisation and the fact that there are matters of common interest which outstrip the geographical boundaries of the Nine.

Given the reality of the EEC, it might perhaps be wondered whether it is still a good thing for the Conference to formulate a programme of work encompassing the entire transport field in close detail, or whether it should direct its attention more particularly to research and studies in more "autonomous" fields or those where a wider geographical frame of reference than that of the Nine is needed. Whatever one's views about this alternative may be, it still remains that the ECMT must continue to deal with those matters for which its Protocol gives it competence. This being so, when shaping the guidelines for the Conference's work, due regard will have to be paid to developments concerning the Community's activities.

This procedure for determining the guidelines of the Conference would also make it possible for the Community to be more closely involved in certain preparatory activities where ideas could be brought to a more mature stage before incorporating them in a binding framework.

Furthermore, the appointment of temporary working groups further strengthens co-operation between the two Organisations and makes it more effective than a general form of co-operation which would inevitably be looser. In this way, the separate identity of the Conference is also more easily safeguarded.

The ECMT machinery should also be used to the fullest extent to transfer EEC decisions to a wider geographical framework, notably when this may seem to require ad hoc negotiations between the EEC and other Member countries of the Conference for the conclusion of multilateral agreements on transport matters.

## 2. Relations with other international organisations

With regard to ECMT relations with international intergovernmental organisations covering a roughly similar geographical area, what really matters is to reaffirm the assignment given to the Conference for anything connected with international activities in the transport field, notably its inherent claim to priority for dealing with transport policy options at Ministerial level.

International organisations primarily concerned with matters extraneous to transport (such as the environment, energy or regional planning) can inspire the approach to problems tackled by the Conference, whereas those dealing with transport topics from a sectoral angle can contribute, by their more detailed studies, documentation for shaping the guidelines of the Conference.

All the Member countries of the Conference belong to the United Nations Economic Commission for Europe and the practical links between the two organisations should be maintained by exchanging programmes of work and by contacts between their Secretariat. The ECMT's co-ordination of the stands taken by its Member countries' on certain ECE activities in the past should be borne in mind.

As the subjects dealt with by the Inland Transport Committee of the ECE and the ECMT are similar and as the latter carries out preparatory work which can be used by the ECE for agreements embracing all European countries, the Conference should consider, for policy and technical reasons, arrangements whereby its Secretariat might be given Observer status in the ECE.

A Liaison Committee caters for relations between the Conference and the OECD. By reactivating the work of this Committee, co-operation between the two organisations should be improved and there should be better co-ordination of work programmes concerning particular fields such as road safety, urban transport and road research, etc. so that each organisation can deal with them in accordance with its own prerogatives.

The Council of Europe has long been urging governments to treat the Conference as the right place for co-ordination of projects and lines of thinking, whether they concern intrinsically international problems or problems which can more usefully be looked at from an international angle. In 1966, the Consultative Assembly's Resolution Number 320 in reply to the 12th Annual Report of the Conference stated this quite clearly. In consequence, the Conference should spare no effort to go on receiving that Organisation's support.

Practical links between the Conference and all the organisations must be maintained at technical level by contacts between Secretariats or international experts (not excluding their actual participation,



or attendance in an Observer capacity in certain activities) and maintained at policy level, by mutual exchange of work programmes.

### 3. Relations with non-governmental organisations

On this point, it is worthy of note that, among the international inter-governmental organisations, it is the Conference that gives non-governmental organisations most opportunities for expressing their views at Ministerial level. As things stand at present, these contacts are satisfactory. The collaboration of these organisations for certain ECMT activities must continue.

### 4. Relations with the Press

It seems that the Secretariat cannot alone cater for contacts between the Conference and the Press. It is desirable that Member countries should take a more active share in future, notably through the Bureau of the Council and of the Committee of Deputies, so as to circulate information on the results achieved more widely and give more publicity to decisions.

### 5. Practical arrangements for external relations of the Conference

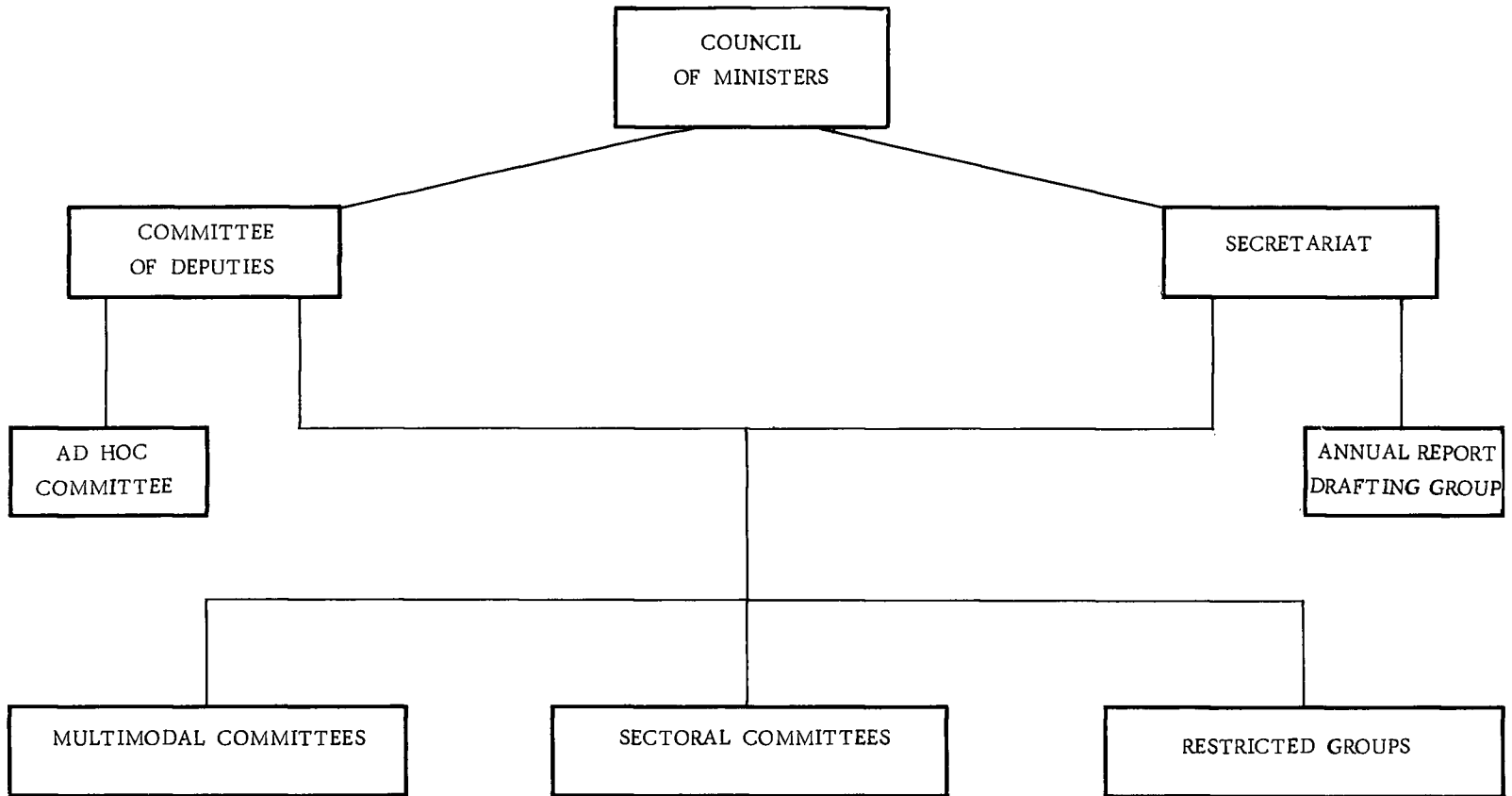
The Conference's relations with non-governmental organisations and the Press can no doubt be suitably taken care of by the Bureau of the Council of Ministers and the Committee of Deputies, with the help of the Secretariat, but relations with other international organisations are a different case when multilateral agreements have to be prepared or when plans have to be made for meetings involving all Member countries of the Conference are to be held elsewhere; meetings of the EEC Inland Transport Committee, for instance.

It is proposed that the Ad hoc Committee should be responsible for handling and co-ordinating such matters.

### 6. Dissemination of the results of the work of the Conference in scientific circles.

The Conference should promote whatever action may be taken to disseminate the results of some of its activities in scientific circles. It is proposed that the Secretariat should submit to the Committee of Deputies any suggestions which it considers suitable on this point.

PROPOSED NEW ORGANIGRAM FOR THE ECMT



## RESOLUTION No. 37 CONCERNING COMBINED TRANSPORT

[CM(78)30 revised]

The Council of Ministers of Transport, meeting in Paris on 12th December, 1978.

Having regard to the Report on the present situation and future prospects of combined transport [CM(78)21], and having approved the conclusions and terms of reference it contains ;

### CONSIDERING:

- that combined transport can help to relieve main traffic arteries, notably those used by transit traffic, which in some cases have reached the limit of their capacity or will do so in the foreseeable future;
- that combined transport can help to make better use of existing railway capacity;
- that the use of combined transport brings added benefits to the various modes involved in it;
- that the aim of combined transport should be to provide a commercially viable service;
- that the development of combined transport also seems attractive for reasons concerning environmental protection, road safety and saving of oil fuel, and that further extension of the road network often meets with increasing difficulties, notably as regards land-use resources;

INVITES the Governments of Member countries to promote combined transport, and more particularly

- to encourage each mode of transport, especially the railways to introduce and develop, at national and international level, suitable piggy-back and/or containerised transport systems on appropriate routes;
- to take the necessary steps to enable the railways to make these systems a commercially viable proposition by taking into account, possibly for a "running-in" period, at least the marginal operating costs of this type of transport;
- to promote the necessary measures for the financing during a "running-in" period of investment expenditure needed to introduce and/or develop suitable combined transport systems;
- to eliminate any administrative obstacles to the growth of combined transport;
- to settle the practical problems of combined transport between the countries concerned by bilateral and multilateral negotiations, the ECMT providing an appropriate framework for such negotiations.

**REPORT ON THE PRESENT SITUATION AND FUTURE PROSPECTS  
OF COMBINED TRANSPORT WITHIN THE ECMT**

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## SUMMARY AND CONCLUSION OF THE REPORT

1. Combined transport in its three forms piggyback, container transport and roll-on/roll-off traffic<sup>1</sup> has in almost all countries of the ECMT continually increased since 1975. Where this was not the case, the reason for this can be found in the special conditions of the countries concerned.

2. Piggyback transport offers in general advantages to the enterprises engaging in it (shipper, road transport operator, railways), costs and quality of service should be taken into consideration in each case. The macro-economic advantages of piggyback transport are to be found in the relief of the trunk roads from heavy lorry traffic and the better utilisation of the capacity of the railways.

The advantages of international piggyback transport can be fully brought to bear only if it is promoted by agreements between the States concerned within the framework of their general transport policy. It is necessary that Governments co-ordinate their planning in this field over a long time to come and that they decide in favour of certain uniform piggyback techniques, in order to keep investment costs as low as possible. Furthermore, the Government should encourage national piggyback operators to co-operate on an international basis and more particularly induce them to improve their organisational, financial and tariff structures.

3. The micro- and macro-economic aspects of container transport of the railways are largely the same as those of piggyback transport.

On account of the advantages of the use of containers in combined transport, the Governments of the Member countries should encourage the individual modes of transport in this field.

4. When the question was investigated why the share of combined rail/road transport is particularly high on certain routes, it was found out that the situation and the equipment of the terminals are of great importance.

The Governments should promote appropriate measures that the terminals for combined transport are equipped with adequate transshipment facilities.

5. Concerned Member Governments should decide jointly where and how many terminals should be set up to cope with such an increase in piggyback traffic, since international co-operation is essential for sound planning and investment.

Furthermore, consideration should be given to the possibility of extending the "Rhine Corridor" to the Italian ports.

Lastly, after consulting together, Governments should encourage their railways to acquire appropriate rolling stock for combined transport.

6. The route which runs along the Rhine and then to Northern Italy is particularly suitable for piggyback transport. In future international co-operation arrangements, special attention should also be paid to combined transport routes from North European countries via Austria to Yugoslavia, Greece and Turkey.

7. The carriage of containers and piggyback consignments in block trains seems advantageous for various reasons.

The Governments should encourage their national railways to offer block trains to be jointly used for container and piggyback transport at reasonable prices.

1. See the statistical annex.

## TERMS OF REFERENCE

THE COUNCIL OF MINISTERS OF TRANSPORT INSTRUCTS THE COMMITTEE OF DEPUTIES:

- to direct its efforts, in co-operation with non-governmental international organisations, to seeking concrete solutions to problems concerning the infrastructure and operation of certain forms of combined transport where intergovernmental co-operation - particularly through so-called "Restricted" Groups - seems likely to help the promotion of this type of transport or to eliminate obstacles to its development;
- to consider the effects of pricing measures designed to ensure the growth of combined transport on a harmonized basis, notably by making the price of rail transport more competitive;
- to keep the development of containerised inland waterway transport under review;
- to submit a report to the Council of Ministers by the end of 1980 on the progress made in the above-mentioned fields and to inform it, as necessary, on any important economic, structural or technological changes likely to involve new developments.

## INTRODUCTION

At its meeting held in Toulouse on 16th to 17th June, 1976 the Council of Ministers adopted the report concerning problems of combined transport [CM(76)12].

The Council of Ministers instructed the Committee of Deputies:

- to keep the various forms of combined transport under review, with the assistance of the international Organisations;
- to study the economic viability of piggyback and container transport systems at macro- and micro-economic levels;
- to analyse the causes for combined rail/road transport's large share of the traffic between certain centres and to identify the reasons why the technique has not reached the same level of development in other cases;
- to report on the ways in which the Directive of the Council of the European Communities regarding the establishment of common rules for certain combined rail/road goods transport services between Member States has affected the growth of combined transport;
- to keep in touch with the work of the United Nations Conference on Trade and Development (UNCTAD) as regards:
  - the drafting of a Convention on international multimodal transport; and
  - the work of an ad hoc intergovernmental group on standardization in the field of container transport;
- to submit a report to the Council of Ministers in 1978;
- to consider, as a matter of urgency, the extent to which combined transport could be used for shipments to South-East Europe and the Middle East. A report would have to be drafted in the course of 1977.
- to consider any government aids for combined transport (with special reference to tax relief and investment aids).

The Committee of Deputies instructed the Combined Transport Group to produce the report requested with a view to its submission to the Council of Ministers.

Experts from the Federal Republic of Germany (Chairman), Austria, Belgium, France, Finland, Italy, the Netherlands, Spain, Switzerland and the United Kingdom took part in the work of the Group. As in the case of previous reports, contributions were also made by representatives of the Secretariats of the OECD Maritime Transport Committee, of the Economic Commission for Europe of the United Nations and of the Commission of the European Communities.

In addition to that, the Group also took part in the work of the Committee for analysing the problems of goods transport to and from the Middle East. The report of the latter contains a contribution prepared by the Group concerning the possibilities of combined transport, with proposals to the governments.

## 1. PRESENT SITUATION OF COMBINED TRANSPORT

The Group sent the draft report to the international organisations and invited them to submit comments. The justified requests of the organisations have been incorporated in this report.

In derogation from former practice the present report has been presented in a substantially condensed form. It was believed that by now the state of combined transport is known to such an extent that lengthy presentation would no longer be required.

### 1.1 Piggyback Transport<sup>1</sup>

Piggyback transport has taken a different development in the various Member countries. Generally it can be said that in 1977 piggyback transport increased in the countries of the ECMT as compared with 1975, although not all countries could again achieve the high increase of 1976.

### 1.2 Container Transport<sup>2</sup>

Container transport experienced a strong increase in almost all Member countries as compared with 1975. The individual ports did not in each case have an equal share in this additional amount of transport. The number of containers carried has also risen as compared with the figures of the last report CM (76)12 covering the years 1973 to 1975.

### 1.3 Roll-on/Roll-off Traffic<sup>3</sup>

Where figures could be made available by the Member countries it becomes evident that this type of transport has increased again. Some countries show growth rates of about 10 per cent vis-à-vis 1975, but these figures have been submitted only by part of the Member countries.

## 2. INVESTIGATION OF THE ECONOMIC EFFICIENCY OF PIGGYBACK AND CONTAINER TRANSPORT UNDER MICRO-ECONOMIC AND MACRO-ECONOMIC ASPECTS

### 2.1 Piggyback Transport

Piggyback transport means the carriage of goods by motor vehicles, with the lorries, trailers, semi-trailers (with or without tractor) or their swop bodies on part of the route being carried by rail. The technical design of the swop bodies is similar to that of the containers developed for European

1. op. statistical Annex (Table 5).
2. op. statistical Annex (Tables 1.1, 1.2, 2.1, 2.2 and 3).
3. op. statistical Annex (Tables 4.1 and 4.2).



inland transport. In general, however, they are not equipped with top corner fittings and may be removed from the vehicle without the employment of handling equipment.

#### 2.1.1 Micro-Economic Aspects

There are no provisions in the Member countries of the European Conference of Ministers of Transport, which would contain an obligation to carry out certain types of transport only by piggyback. Both shipper and mode of transport only by piggyback. Both shipper and mode of transport (road and rail) have the fundamental freedom to decide whether they want to participate in piggyback transport. Apart from the quality of this technique the comparison of the costs of transport entirely by road with those of piggyback transport is of decisive importance. In this comparison all cost factors of transport from door to door have to be taken into account.

##### 2.1.1.1 Micro-Economic Aspects of the Shippers

The primary cost factor for the shipper in the carriage of his goods by commercial transport operators is the price he has to pay him for this service. Normally the price for the entire carriage by road is the same as in transport carried by piggyback. In some Member countries this is even laid down in the tariff regulations. Sometimes the shipper does not even know if his products are carried by piggyback. In this situation the shipper does in most cases not influence the decision of the road transport operator for or against the carriage of his goods in piggyback transport.

There may, however, be special circumstances that make the shipper insist upon his goods being carried in piggyback transport. One advantage of piggyback transport is that the transport is hardly ever affected by bad weather (slippery roads due to ice and snow). The safety and the punctuality of piggyback transport can, therefore, be the decisive factor to insist on carriage by piggyback, even in the case of higher prices. The shipper therefore is interested in having his goods carried by piggyback transport. He would be even more interested if the price of piggyback transport were reduced in comparison to that of goods transport carried merely by road. This has been specially emphasized by the international organisations of shippers in their hearing.

##### 2.1.1.2 Micro-Economic Aspects of the Road Transport Operators

The price the railways will charge for a piggyback shipment is of prime importance for the road transport user in his decision for or against carriage by piggyback. It should not exceed the difference between the road haulier's costs for a door-to-door haul and the costs of the initial and terminal road transport.

The operating expenses of the road transport operators vary greatly. They are on the one hand dependent on the size of the firm, on the other hand, however, on the number and the size of the vehicles employed. Where special additional appliances are required on the semi-trailer for piggyback transport, their costs must also be taken into account. The operating expenses of the individual operator can hardly ever be obtained. Where this is possible in individual cases, they are disclosed only in confidence.

Road transport operators also attach great importance to the quality of service provided by the railways, e. g. optimum conditions for loading road vehicles on and off railway wagons, compliance with time-tables and so on.

He will also be interested in the installation of terminals close to major traffic axes and in an effective organisation of the terminal transport (in order to obtain return loads more easily). The adaptation of his vehicle stock to one or the other technique of piggyback transport (harmonized at European level) may also result in a modification of his operating costs.

##### 2.1.1.3 Micro-Economic Aspects of Railways

Piggyback transport will in the long run be generally acceptable only where the railways can cover their costs. Apart from short distances piggyback transport can cover its variable costs on

all routes. In addition to that, piggyback transport contributes to covering the overhead costs of the railways. Their volume is largely differing in the individual countries. One railway expects to be in a position to operate piggyback transport with full cover of costs from 1980-81 on.

Formerly some railways were afraid that piggyback transport would cause them to lose part of their conventional goods traffic. There seems to be hardly any reason for this fear, as the goods carried piggyback would otherwise be transported over the whole distance by road. The railways are being more and more convinced that this argumentation is correct.

### 2.1.2 Macro-Economic Aspects of Piggyback Transport

Apart from the division of labour between rail and road, which is interesting from the micro-economic point of view, piggyback transport offers also macro-economic advantages. They can hardly be given in exact figures, though, but they must nevertheless not be neglected.

The importance of piggyback transport should not be judged by its percentage in transport as a whole but in goods transport by road over 300 km. Over shorter distances piggyback transport will hardly be made use of.

Piggyback transport in large numbers relieves the roads of heavy lorry traffic over long distances. Since piggyback transport is chiefly operated in complete train-loads, which run parallel to the main lines of road traffic, it is above all on these often overloaded trunk roads that the number of heavy lorries is reduced. Traffic flow and traffic safety are improved because a great number of dangerous overtaking manoeuvres do not take place. The so-called congestion costs normally caused by a lorry are avoided in piggyback transport during the carriage by rail. Moreover, piggyback transport helps to save mineral oil, as far as the electricity used by the railways for traction purposes is produced mainly from other primary energy sources. This also helps to reduce noise and air pollution due to traffic. When selecting sites for terminal installations, any disamenities involved at local level should as far as possible be avoided.

For these reasons, some countries were in favour of promoting combined transport, on clearly defined conditions, by fiscal measures, but the majority considered that this was not practicable, at least for the time being.

### 2.1.3 Conclusions

The advantages of international piggyback transport can be fully brought to bear only if it is promoted by agreement between the States concerned within the framework of their general transport policy. It is necessary that governments co-ordinate their planning in this field over a long time to come and that they decide in favour of certain uniform piggyback techniques, in order to keep investment costs as low as possible. Furthermore, the governments should encourage the national piggyback operators to co-operate on an international basis, and more particularly induce them to improve their organisational, financial and tariff structures.

## 2.2 Container Transport

### 2.2.1 Micro-Economic Aspects

In the Member countries of the European Conference of Ministers of Transport, the principle of the free choice of the means of transport applies also to container transport. Containers are, therefore, used in combined transport only if their employment reduces all costs generated directly or indirectly by the transport.

#### 2.2.1.1 Micro-Economic Aspects of Shippers

A shipper will, in making a decision if he will dispatch his goods in containers, not only consider the price of the transport. The transport operators of the individual modes of transport have nowadays to some extent begun to calculate the rates for the carriage of goods in containers irrespective of the kind and the weight of the goods. In a comparative calculation the shipper will also take into account that in container transport packing costs can very often be saved. The costs of the trans-shipment from one mode of transport to the other are also considerably lower in the case of an employment of containers than with conventional transport. Finally, the carriage in containers reduces the danger of the goods being stolen or damaged. The constantly increasing number of containers in use is proof that container transport is advantageous for the shipper.

#### 2.2.1.2 Micro-Economic Aspects of Road Transport Operators

Road transport operators carry containers in combination with ship, rail or air transport. They will always be only a link in a transport chain. They may need only a tractor to haul the containers, because the shipping company or railway often provides the containers on a chassis. Also in some cases container vehicles incur less idle time than in conventional road transport, so that the costs incurred are less as well.

The costs for a road transport operator vary so much with the individual firms, however, that there existed no special container tariffs in road transport for a long time, and even now there are many routes for which no special container tariffs have as yet been introduced. The participation of road transport operators in container transport permits one to conclude, however, that their costs are covered.

#### 2.2.1.3 Micro-Economic Aspects of the Railway

The share of the railways in container transport via the seaports varies from Member country to Member country. The extent of the cover of costs of the railways is known only in individual cases.

In all Member countries, however, container transport contributes to the cover of the overhead costs of the railways. The proportion of the cover of all costs generated directly or indirectly by the transport varies but it is to be expected that, in the long run, the railways achieve cover of complete costs in container transport. Therefore the railways intensify their efforts on this promising type of transport. In this way they intend to improve their share in general merchandise traffic which has been constantly decreasing in recent years. This makes it necessary for the railways to concentrate their container transport on operation between relatively few centres for initial and terminal haulage taking place by road. In principle private sidings should only be served with a set of wagons in the future.

In international transport the railways of the Member countries have, together with other European railways joined up and formed the company "Intercontainer", in order to achieve by means of this organisation, a better competitive position. The success of "Intercontainer" shows that this amalgamation has contributed to an increase of container transport by rail.

#### 2.2.1.4 Micro-Economic Aspects of the Inland Waterway

In the sector of the inland waterway operators the basic conditions have not changed very much since the latest report of our group. What is said there is still relevant.

Compared with other inland waterways the Rhine is still in a privileged position for container transport on account of the geographical situation of the ports at the mouth of the Rhine (Amsterdam, Rotterdam and Antwerpen). Concerning the share of the inland waterway in the transport of the total

number of containers transshipped in these ports can be said that this share grows steady, but there is no talk of a break-through, as took place ten years ago in the sea transport. Although exact figures are not available, the share of the inland waterway in this transport remains small in comparison with the road transport and the railways.

The growth of this share is caused by a number of factors. Among others the fact that now the containerisation also concerns more and more goods for which the speed is not so important and the fact that transport by road becomes more expensive on account of the improvement of the social conditions and the raised petrol-costs. Besides it is expected that severe safety requirements with regard to the transport of dangerous goods in containers leads to increasing container transport by inland waterway. The same applies with regard to the tackling of the conference-clauses (prohibition of container transport by the inland waterway to and from the ports).

Since 1969, when the Rhine Container Line first introduced container transport services on international inland waterways, other container transport services have been organised. Especially in the last year this is the case. Now about six companies maintain regular services from Rotterdam and Antwerpen to a number of places in the hinterland.

It has become clear that only through co-operation at national and international level between all inland navigation operators concerned container services from and to certain specific centres - over relative long distances and in reasonable quantities - can be operated economically.

#### 2.2.2 Macro-Economic Aspects of Container Transport

Container transport serves to reduce the overall costs of transport over long distances. This reduction of transport costs enhances the competitive capacity of the national economy of each Member country. It must be welcomed that a large part of the containers to be sent over long distances is carried by rail, which entails a relief of the roads and a better utilisation of the railway infrastructure.

The benefits of container transport by the railways for the national economy correspond to a large extent to those of piggyback transport (2.1.2).

#### 2.2.3 Conclusion

On account of the advantages of the use of containers in combined transport, the governments of the Member countries should encourage the individual modes of transport in this field

### 3.1 Causes for the Particularly Large Share of Piggyback Transport in the Traffic on Certain Routes

A review of the piggyback routes in one Member State showed that compared with end-to-end goods transport by road its share on some routes was far above the average percentage. In connection with a study prepared for the United States Department of Transportation it was even ascertained that despite their overall low market share the existing piggyback services in general were nevertheless able to reach a market share of more than 50 per cent on certain routes. Due to European conditions the realisation of such a high market share is hardly possible. It is considered possible, however, that on certain routes 20-30 per cent of road haulage may be carried out by piggyback transport.

There are various reasons for the large share of piggyback transport on particular routes.

Generally speaking, the routes on which piggyback transport operations play a particularly important part are those extending over at least 400 km. The longer the route effected by railway the lower the proportion on the costs of initial and terminal haulage and transshipment in the total costs of the transport concerned.

It should be noted that these routes used above average are always interconnecting cities with large traffic volumes. Consequently, initial and terminal transport operations are to be carried out only over short distances. Moreover, there is generally one terminal on each of these routes which has a good connection to the road network.

Furthermore, in cases where the driver accompanies the road vehicle, the amenities provided for him on the train are also an important consideration from a social angle.

It is obvious that late closing times of loading and early times of arrival in general have a positive effect on the expansion of piggyback transport.

In addition to that, an exceptionally large share in piggyback transport could be reached only by those terminals equipped with transshipment facilities capable of meeting all requirements. Consequently, it seems necessary that large terminals should be provided with a second crane or other additional ancillary equipment.

### 3.2 Causes for a Particularly Large Share of Container Transport on Certain Routes

The reasons mentioned under 3.1 above for an exceptionally large share of piggyback transport analogously also apply to container transport. It is to be taken into consideration, however, that the major portion of container transport within the ECMT Member States originates or ends in the seaports. The tendency of large deep sea container vessels to concentrate on relatively few ports tends to provide large volumes of containers for particular destinations for which rail transport is particularly suitable. In one Member country, for example, more than 80 per cent of all containers to be carried from the ports up-country over distances of more than 200 km are already transported by rail.

A rapid expansion of container transports by rail is only possible if there are sufficient storage areas available in the terminals. Moreover, it must allow for the storage of empty containers, since the availability of empty containers often results in a supplementary order for the railways to carry the laden container. Railways should try to respond to each others demands for train capacity on short notice and try to improve the handling speed of those trains.

It is of special importance that the seaports be equipped with sufficient transshipment facilities in order that container trains may be loaded or unloaded without delay. In addition to that, special care should be given to the maintenance of these transshipment facilities. Otherwise, the failure of one crane may cause the entire transport programme to be brought into disorder.

### 3.3 Conclusion

The governments should promote appropriate measures to ensure that the terminals for combined transport are equipped with adequate transshipment facilities.

## 4. PRACTICAL POSSIBILITIES OF EXTENDING THE PIGGYBACK SYSTEM FOR TRANSPORT ON THE "RHINE CORRIDOR"

A heavy flow of road traffic is developing from Rotterdam and its outskirts on the route along the Rhine through the Netherlands to Germany and then through Switzerland to Northern Italy. The volume of traffic on this "Rhine Corridor" is relatively large. Swiss statistics show that in 1975 freight in transit through Switzerland would have amounted to 6 million tonnes if road trains of 38 tonnes gross laden weight had been allowed to cross that country. In connection with this Corridor, reference must also be made to the two-way freight traffic between the Netherlands and Germany and between Switzerland and Italy. On the basis of the criteria set out under item 3.1 above, traffic on the Rhine Corridor is particularly suited to the piggyback system.

Since road trains of 38 tonnes gross laden weight are not allowed for various reasons throughout the entire length of the Corridor, piggyback transport offers a useful alternative for the movement of freight. For such a form of transport, however the railways' share must be adequate so that their distinctive features may be used to best advantage.

On the Rhine Corridor both semi-trailers and swop-bodies can be carried on piggyback trains (swop-bodies can be carried only up to the Netherlands frontier for the time being). On the Swiss section of the journey they can also take complete road trains. In view of the increase in traffic it would be useful if road trains could use the rail-hauled section of the journey throughout its length but there is not sufficient rolling stock available at present. The Swiss piggyback transport operator and the railways concerned are now testing a new wagon. According to present calculations the new wagon will have the advantage of being cheaper than the existing rolling stock as regards both capital cost and operating costs. The fairly low cost of transshipment which is a feature of this form of piggyback transport contributes reasonably well to the commercial viability of the system despite the fairly high deadweight.

The question of loading gauge must also be borne in mind if consideration is given to the expansion of piggyback traffic on this Corridor. At present, road trains must not exceed 3.50 m in height to be able to clear the Alpine tunnels, but extension of the loading gauge to provide clearance for road trains up to 3.70 m high is already well underway and should be completed by 1980-81. This improvement of the infrastructure will enable about two-thirds of the road vehicles now used for transport on this Corridor to be carried by rail. The loading gauge cannot be raised to 4 m in the near future as cost-benefit calculations show that the capital expenditure involved would be quite out of scale with expected returns.

The Swiss and German railways are striving to develop their piggyback traffic. The volume of international traffic carried in this way is expected to double, even triple, by 1985.

### Conclusions

Concerned Member governments should decide jointly where and how many terminals should be set up to cope with such and increase in piggyback traffic, since international co-operation is essential for sound planning and investment.

Furthermore, consideration should be given to the possibilities of extending the Rhine Corridor to Northern Italy and thence to the terminal port on this route. Apart from provision for the Rhine Corridor, consideration should also be given in future international co-operation arrangements to the combined transport routes running from North European countries via Austria to Yugoslavia, Greece and Turkey.

Lastly, after consulting together, governments should encourage their railways to acquire appropriate rolling stock for combined transport for the carriage of complete road trains.

## 5. JOINT CARRIAGE OF CONTAINERS AND PIGGYBACK CONSIGNMENTS IN BLOCK TRAINS

Investigations of the possibility of cost reduction in combined transport have shown that the costs can be reduced when using complete train-loads. With these trains, which should be constantly operated between two terminals, if possible, the relatively high costs of train formation can be extensively eliminated, provided that the same wagons are used at all times. In addition to that, the time required for dispatching the trains is reduced in the case of block trains.

There are only a few cases at present, however, where the volume of goods is sufficient to make full use of the capacity of a piggyback or a container train between two terminals. It will therefore be necessary to serve additional terminals by means of high-cost multiple section trains or to provide for loading and unloading en route, thereby extending the journey of the consignments.

The situation could be considerably improved by carrying containers and piggyback consignments on a single train. Technically, many of the wagons designed for piggyback transport are already capable of carrying containers. Likewise, most of the flat wagons for the transport of containers are suitable for the transport of swop-bodies, some wagons are specially designed for the transport of containers, semi-trailers and swop-bodies. Therefore are only minor technical obstacles for handling the traffic in this manner.

Difficulties are arising from the fact, however, that the fees charged by the railways for the carriage of container and piggyback consignments are differing. This is partly due to the fact that the piggyback transport organisations obliged themselves to pay a fixed price for specific piggyback trains, irrespective of the extent to which their capacity is used. It should be possible for the railways, however, to offer piggyback and container organisations favourable terms for the joint utilisation of a block train, since it may be operated at reasonable costs. In cases where complete block-train connections are already existing a joint utilisation would allow the operation of two trains with different times of departure and arrival, thus increasing the attractiveness of combined rail/road transport.

Another difficulty in using a block train for the common carriage of containers and piggyback consignments arises from the fact that the existing organisations concerned with handling container transport by rail are 100 per cent subsidiaries of the national railway. In contrast thereto, the railways have only a minor share in piggyback companies, and in one Member country they have no capital interest at all in such companies. Despite the different forms of organisation it should be possible, however, to operate block trains carrying both containers and piggyback consignments, since their economic advantage would be to the benefit of all those participating in this type of transport service.

### Conclusion

The governments should encourage their national railways to offer block trains to be jointly used for container and piggyback transport at reasonable prices.

## 6. REPORT ON THE WORK OF THE ECONOMIC COMMISSION FOR EUROPE IN THE COMBINED TRANSPORT FIELD

### 6.1 International Combined Transport

The UNCTAD Intergovernmental Preparatory Group on a Convention on International Multimodal Transport (IPG), established by Trade and Development Board Decision 96 (XII) in pursuance of Economic and Social Council Resolution 1734 (LIV), to elaborate a preliminary draft of a convention on international multimodal transport. The group has held five sessions and a sixth will be held from 19th February to 9th March, 1979.

The ECE has continued to co-operate with UNCTAD in the work of the IPG. The relevant group within ECE contributed to a paper on the minimum qualifications for multimodal transport operators prepared for the fourth IPG session.

The question of the interchangeability of Customs and transport documents, which might result in a link between the TIR Convention and a future multimodal convention, has been taken up the relevant group within ECE.

### 6.2 International piggyback transport

The ECE agreed to undertake a study of the problems, connected with the road aspects of the application of combined rail/road transport and invited the International Road Transport Union (IRU) to prepare, in collaboration with the International Chamber of Commerce, the International Union of Railways (United Kingdom) and the International Union of Combined Rail/Road UIC Transport Enterprises (UIRR) a paper on the subject, which would, in addition to piggyback transport, also cover as far as possible, aspects relating to container transport. This question will be taken up at the forthcoming sessions of the Working Parties on Rail, respectively Road Transport.

### 6.3 Standardization

With respect to standardization in the combined transport field, ECE has continued to co-operate with the International Organisation for Standardization (ISO) in its work on freight containers and on

pallets and packaging as they relate to freight containers. The relevant body within ECE has closely followed the work being undertaken within ISO/TC 104 - Freight, Containers, particularly with respect to specification and testing, thermal containers, platform and platform-based containers, corner fittings, handling and securing, external dimensions and ratings, terminology and the marking of containers.

ECE has co-operated with UNCTAD in its work on container standards for international multimodal transport. The UNCTAD Trade and Development Board, by its decision 118(XIV) in response to Economic and Social Council decision 6(LVI), established an Ad Hoc Intergovernmental Group on Container Standards for International Multimodal Transport which met in November 1976. The relevant group within ECE prepared a paper which was submitted to the Ad Hoc Intergovernmental Group and which dealt with an assessment of the work done by ISO on freight containers, as well as on pallets, packaging, handling and transport equipment insofar as they relate to such containers, an assessment of the impact of standardization in the field of container transport on the economy of the countries concerned and the practicability and desirability of eventually drawing up an international agreement on container standards.

The Ad Hoc Intergovernmental Group was unable to reach agreement on the fundamental question of the practicability and desirability of drawing up an international agreement on container standards. The Economic and Social Council accepted the Group's recommendation to transmit its report to the UNCTAD Trade and Development Board so that the Board could consider appropriate arrangements for further action. The Trade and Development Board has decided that a second session of the Ad Hoc Intergovernmental Group should be held from 20th November to 2nd December, 1978, and for that session the UNCTAD Secretariat is to prepare in close collaboration with IMCO, the regional economic commissions and other relevant United Nations organisations pertinent analytical documents to facilitate the work of the Ad Hoc Intergovernmental Group and to permit determination of the practicability and desirability of an international agreement on container standards. The relevant group within ECE has prepared preliminary comments and will make a further contribution to the second session of the Ad Hoc Intergovernmental Group.

#### 6.4 Marking and Identification of Containers and their Movement Control

The relevant body within ECE has continued to serve as a forum for an exchange of views on a wide range of subjects related to the marking and identification of containers and their movement control such as the automatic reading of marks on containers, a special marking for containers equipped with ladders and a consolidated data plate for containers.

#### 6.5 Safety Questions

The International Convention for Safe Containers (CSC), elaborated under UN/IMCO auspices, entered into force on 6th September, 1977. As of 1st August, 1978, there were 17 Contracting Parties: Byelorussian Soviet Socialist Republic; Bulgaria; Czechoslovakia; France; German Democratic Republic; Federal Republic of Germany; Hungary; India; Liberia; New Zealand; Romania; Spain; Ukrainian Soviet Socialist Republic; Union of Soviet Socialist Republics; United Kingdom; United States of America and Japan.

Since the adoption of the Convention in 1972, the relevant group within ECE has served as a forum for an informal exchange of views on various problems related to the implementation of CSC. Among the major areas of concern is the adequacy of the five-year grace period for the plating of existing containers for countries which ratify the CSC late or in which there are large numbers of containers to be plated. Also of concern is the possibility that widely differing approved examination schemes might exist in different countries and that such a lack of uniformity might create an economic advantage for certain owners in countries with the most liberal requirements. A lack of uniformity in control procedures might also create certain difficulties, and problems also exist in the area of reciprocal recognition of classification societies. These and other problems related to implementation of the Convention must be resolved as provided in the Convention within the framework of IMCO which is the depositary for the Convention.



## 6.6 Operating Experience and New Combined Transport Services

The relevant group within ECE regularly exchanges information on practical operating experiences and new combined transport services, with the detailed study of combined rail/road transport<sup>1</sup> in the ECE region the subject of particular interest. A special study on the road aspects of combined rail/road transport is being undertaken for the relevant bodies within ECE by the International Road Transport Union in collaboration with the International Union of Combined Rail/Road Enterprises, international Chamber of Commerce and the International Union of Railways.

## 6.7 Combined Transport Statistics

The ECE has begun to publish in its Annual Bulletin of Transport Statistics for Europe, as a complement to previously published data on container traffic and transport of containers by rail, information on the international movement of large containers in transport involving a sea journey. The relevant group within ECE is undertaking the preliminary work on the development of uniform guidelines for the collection and publication of container transport statistics. Also being considered is the question of harmonization of definitions related to combined transport and multimodal transport.

## 6.8 Customs Questions and Frontier Controls

The 1975 Customs Convention on the International Transport of Goods under Cover of TIR Carnets (TIR Convention), under which road vehicles and containers in transit may cross frontiers within Customs inspection, was signed by a total of 18 governments and the European Economic Community. The Convention entered into force on 20th, March, 1978, at which time there were a total of 10 Contracting Parties. An earlier TIR Convention, elaborated in 1959, which is still in force but which will ultimately be replaced by the 1975 Convention, has a total of 38 Contracting Parties (nine outside Europe). Various aspects of the territorial expansion of the TIR system are under study within ECE.

The 1972 Customs Convention on Containers which entered into force in 1975 had 14 Contracting Parties at the end of 1977. Twenty additional governments, in response to an ECE resolution are applying wholly or in part the substantive provisions of the Convention as they were originally drawn up in 1970. The 1956 Customs Convention on Containers, which is still in force, has a total of 37 Contracting Parties.

A revised version of Resolution No. 212 dealing with facilitation of health and quality inspection for goods transported by rail was adopted by the Inland Transport Committee in 1977, and the entire question of frontier controls and formalities has been considered by a number of bodies within ECE. The possibility of an international agreement on the harmonization of conditions for exercising controls undertaken at frontiers is under study within ECE.

## 6.9 Facilitation of International Trade Procedures

The relevant body within the ECE has adopted a number of recommendations on various subjects related to the facilitation of international trade procedures. Those recently adopted have dealt with common access reference, code for ships' names, and data elements in maritime and combined transport.

Work is continuing on the development of a number of codes which are relevant to transport, including a port/location code and a packaging code. Interest has been shown in a study of the standardization and simplification of shipping marks internationally, and a detailed study of import procedures has been undertaken with a view to future work on the rationalisation of import documents. A draft recommendation has been prepared of steps which can be taken to simplify the documents and procedures for dangerous goods transport, and it includes a section on problems related to combined transport

1. Combined rail/road transport = piggyback transport.

A Trade Facilitation Manual, updating the 1966 ECE Guide on Simplification and Standardization of External Trade, is nearing publication. The manual will contain, inter alia, specimens of foreign trade documents and examples of aligned series.

#### 6.10 Future Work

Within the ECE there is a continuing effort to define new areas for practical international co-operation. In the field of combined transport, this effort is aimed primarily at the development of appropriate measures to promote combined transport and to ensure maximum utilisation of equipment used for such transport.

### 7. REPORT ON THE FURTHER DEVELOPMENT OF THE EEC DIRECTIVE ON INTERNATIONAL PIGGYBACK TRANSPORT

The Council Directive (EEC) of 17th February, 1975<sup>1</sup> has liberalised certain types of combined road/rail carriage of goods between Member States from any quantitative restrictions of international road haulage (quota) and of various administrative constraints of a national character (authorisations). These rules, provided to promote combined transport are at present effective only until 31st December, 1978.

For this reason, in December 1977 the Commission submitted a report to the Council. The Commission stated that the directive has come up to the expectations set out in it and that it should be considered as a positive element for the future development of this traffic. The Commission therefore has come to the conclusion that the system established by the directive should, without any further temporary limitation, be made permanent with, however, certain additions and improvements.

At its meeting of 12th June, 1978 the Council approved the report on the Commission's ideas. The Council asked the Commission to examine also the other measures which could be taken at Community level in order to promote the combined road/rail carriage and to eliminate the obstacles still existing.

In July 1978, the Commission submitted on the basis of these guidelines a proposition to the Council amending the directive of 1975. The most important amendments proposed concerned the inclusion of container traffic in the field of application of the system and the liberalisation of the carriage to the loading station and from the unloading station from all systems of authorisation. The discussion on the Commission's proposal within the Community institutions could be concluded at the November 1978 session of the Council.

In autumn 1978 the Commission also started consultations with the interested economic sections and with governments in order to discuss further measures to be taken to promote combined road/rail carriage. The discussions cover especially the following areas:

- fiscal impositions on the road vehicles employed in combined carriage;
- investment aids for rolling stock and installations;
- aids for the operation of the enterprises during the initial period of combined traffic;
- traffic and rate-fixing for carriage by rail in combined traffic;
- access to the market and the control of capacity in road haulage;
- technical harmonization.

The questions are being discussed at present and the results of such discussion cannot be anticipated.

1. O.J. of the E.C. No. L 48/31 of 22nd February, 1975.

## 8. THE PRESENT STATE OF THE WORLD HIGH-SEAS UNIT-LOAD SHIPPING FLEET AND THE DIRECTION OF ITS PROBABLE DEVELOPMENT

(Note by the Maritime Transport Secretariat, OECD)

### 8.1 General

In spite of the very rapid growth of the fully cellular container ship during the early seventies, it has by no means eliminated its unit load competitors (the part-container ship, the roll-on/roll-off ship and the barge carrier), the conventional general cargo ship, or even the multi-deck tramp ship, although this last category has suffered very severe inroads. After 1973, there were two years of near stagnation, with the growing point transferred to the barge carriers and roll-on/roll-off ships (ro/ro vessels). However during 1976 and 1977 there has been a pronounced recovery in the speed of development of both fully containerised and ro/ro vessels, and by the end of 1977 the capacity of these totalled 440,000 TEU (+ 33 per cent since 1975) although no new barge carriers have been delivered since 1975.

The recent influx of ro/ro shipping into deep-sea routes has been due to their ability to handle cargoes of the "semi-bulk" type such as wool, forest products and partly refined metals, none of which are readily containerisable, and which, save for wool, are not normally regarded as liner cargoes. This makes ro/ro ships a valid alternative on routes with imbalanced trades, and they can more readily be switched in periods of reduced cargo demand. The recent surge in ro/ro shipping has been particularly associated with their freedom from the need to use sophisticated port facilities, as conventional container ships and general cargo vessels require, most notably in the Middle East.

### 8.2 The Present Fleet and its trading pattern

The present fleet of fully containerised ships falls into two parts, the "coastal and short sea" group between 1,000 and 6,000 grt and the "deep-sea" group over 10,000 grt. In the latter, 35 per cent of ships and capacity are in the 1,000/1,500 TEU range, which form the workhorses for the fleet. 8 1/2 per cent of full container ship capacity is in vessels more than 25 years old which will require replacing soon, whereas the other unit-load types are virtually all less than 10 years old. Over the next two years, ro/ro ships will be the fastest growing category with 45 per cent of the unit-load capacity on order, at the end of 1977, compared to less than 20 per cent two years earlier.

1977 marked a milestone in the development of containerisation, with the start or full operation of the Europe/South Africa, Europe/New Zealand and Japan/New Zealand services. In effect, with these three services, all trades between developed countries can be said to be at least partly containerised although the extent of penetration in the different trades varies considerably, and already the South African service is suffering from overtonnaging.

### 8.3 Probable Developments in the Unit-Load Trades and Fleet

By the end of 1976 the penetration into the established trades, such as those from Europe to North America and Japan had been completed, and growth in these trades will be limited to the overall growth in total volume. Over the next few years the main developments will be in the trades with the developing countries. This has already started with West Africa and the Far East other than Japan but the Middle East route, whose containerised trade from Europe grew more than seven fold between 1975 and 1977, has suffered very heavily from port congestion and the lack of return cargoes to employ the containers fully.

The need for flexibility in the trades with the developing countries could have been an encouragement to barge carrier systems. However, their highly capital-intensive nature and, as yet, the absence of replacement shipping of this type on the market has outweighed their flexibility and their freedom from sophisticated port-handling equipment and extensive inland infrastructure provided they are not at the same time container ships. As a result only the Soviet Union and, after a long break, the United States are actively developing new barge carrier systems.

The prospects beyond the medium term suggest that, up to 1985, according to a recent study, OECD-related liner trades will require some 62 million dwt (1976: 47 million dwt). Of this, general cargo ships will increase their tonnage only marginally leaving almost all the increase in the total trade to be transported by the unit-load fleet which is expected to increase between 1976 and 1985 from 9.6 to 21.0 million dwt with the growth approximately equally distributed between classical full-container ships and ro/ro vessels. This is in line with present unit-load world order books.

In conclusion, then, it appears that the unit-load fleet will continue to grow, expanding principally into the trades with the developing countries and to a lesser extent increasing its penetration into the existing general cargo trades between developed countries. However, there seems a considerable danger that the shipping at present on order for delivery within the next eighteen months could lead to an excess of capacity in the unit-load trades of a similar nature to that currently being experienced in the dry-bulk and oil trades. The fleet requirement can be expected to slightly more than double between 1976 and 1985 but on present new building schedules the available capacity is likely to grow by 40 per cent before the middle of 1979 (i. e. the first quarter of the period) and this development suggests an uncertain prospect for owners and shipbuilders during the early eighties.

## COMBINED TRANSPORT

### Annex I

#### 1. TRANSHIPMENT OF LARGE CONTAINERS AT SEAPORTS

Table 1.1. NUMBER OF CONTAINERS TRANSHIPPED  
(20 feet and over; laden and empty)

PORTS		1975	1976	1977
		NUMBER OF CONTAINERS		
1	Germany <sup>1</sup>			
	Hamburg .....	268,812	329,573	378,000
	Bremen/Bremerhaven .....	246,276	283,258	318,000
	Other ports .....	124	1,112	6,000
	Total .....	515,212	613,943	702,000
2	Belgium			
	Antwerpen <sup>3</sup>	265,762	293,291	365,150
	Zeebrugge	116,539	112,202	137,966
	Gent	10,477	10,949	9,313
3	Spain			
	Barcelona .....	63,921	89,116	126,774
	Bilbao .....	52,518	54,909	59,311
	Algeciras-La Linea .....	19,945	40,750	72,470
	Sta. Cruz de Tenerife .....	37,645	44,931	52,994
	Cadiz .....	30,745	37,691	43,858
	La Luz-Las Palmas .....	41,744	40,563	54,046
	Valencia .....	28,883	42,258	53,136
	Alicante .....	38,402	33,459	34,630
	Other ports .....	122,172	137,613	181,128
Total	434,525	521,290	678,347	

1. Not including goods in containers transported by road or rail.
2. Estimates.
3. Of which empty: 43,256 (in 1975), 45,891 (in 1976), 60,854 (in 1977).

Table 1.1 (Cont'd)

PORTS		1975	1976	1977
		NUMBER OF CONTAINERS		
4	Finland			
	Total of which: .....	59,908	59,144	57,650
	(a) to seaports .....	27,722	26,275	22,350
	(b) from seaports .....	32,186	32,869	35,300
5	France			
	All French ports .....	297,544	436,454	530,400
6	Greece			
	Pireaus .....	64,184	78,714	93,000 <sup>5</sup>
	Salonica <sup>6</sup> .....			
7	Ireland <sup>8</sup>			
	Cork .....	16,440	21,121	}
	Dublin .....	158,660	153,720	
	New Ross and Waterford ....	52,298	61,979	
	Other ports .....	4,638	3,615	
	Total .....	232,036	240,435	
8	Italy			
	Genova .....	14,056	14,826	8,241
	La Spezia .....	4,272	4,974	4,844
	Livorno .....	6,091	6,219	6,766
	Napoli .....	7,989	7,793	7,877
	Palermo .....	153	161	172
	Cagliari .....	215	222	236
	Brindisi .....	3,335	3,368	3,324
	Ravenna .....	114	121	73
	Venezia .....	950	834	891
Trieste .....	9,224	9,322	9,463	
9	Netherlands			
	Rotterdam .....	719,312	813,817	896,107
	Amsterdam .....	24,028	24,174	33,874
	All ports .....	776,746	889,630	966,181

4. Estimates.

5. Estimates. 77,505 containers carried during the last ten months.

6. About 2,000-5,000 containers, respectively, have been transported during the last two years.

7. Not yet available.

8. Figures include "Lancashire flats", 10' x 8' containers and bulk liquid containers of a minimum capacity of 500 gallons.

9. First six months.

Table 1.1 (Cont'd)

PORTS		1975	1976	1977
		NUMBER OF CONTAINERS		
10	United Kingdom			
	London .....	228,000	276,000	297,000
	Southampton .....	154,000	195,000	204,000
	Liverpool .....	132,000	148,000	188,000
	Felixstowe .....	144,000	142,000	162,000
	Other ports .....	738,000	677,000	681,000
	Total UK ports .....	1,396,000	1,437,000	1,532,000
11	Portugal			
	Leixoes .....	46,859	35,005	20,781 } <sup>10</sup>
	Douro .....	277	3	8 } <sup>11</sup>
	Lisboa .....	43,899	64,750	67,775
12	Sweden			
	Gävle hamn .....	156	218	} 12
	Göteborgs hamn .....	126,744	144,564	
	Halmstads hamn .....	1,406	735	
	Helsingborgs hamn .....	20,744	19,961	
	Malmö hamn .....	3,658	2,165	
	Norrköpingshamn .....	779	2,742	
	Oxelösunds hamn .....	-	-	
	Stockholms frihamn .....	7,667	6,295	
	Stockholms hamn .....	345	421	
	Umea hamn .....	20	-	
	Västeras hamn .....	292	241	
	Wallhamns hamn .....	12,066	12,570	
	Ystads hamn .....	-	-	
	Ornsköldsviks hamn .....	24	20	
	Total .....	173,901	189,932	

10. First six months.

11. Figures liable to correction.

12. Not yet available.

Table 1.2 TONNAGE OF GOODS ARRIVED IN CONTAINERS  
(20 feet and over)

PORTS		1975	1976	1977
		TONNES		
1	Germany <sup>1</sup>			
	Hamburg .....	2,137,557	2,805,082	3,423,000
	Bremen/Bremerhaven .....	2,443,340	2,874,338	3,363,000
	Other ports .....	1,077	14,114	99,000
	Total .....	4,581,974	5,693,534	6,885,000
2	Belgium			
	Antwerpen .....	3,335,558	3,723,225	4,878,466
	Zeebrugge .....	1,493,858	1,418,563	1,811,897
	Gent .....	41,581	51,723	48,063
3	Spain			
	Barcelona .....	535,230	828,043	932,275
	Bilbao .....	688,199	773,036	804,565
	Algeciras-La Linea .....	242,670	616,117	1,041,503
	Sta. Cruz de Tenerife .....	330,204	459,731	571,018
	Cadiz .....	371,644	445,295	536,988
	La Luz-Las Palmas .....	335,169	424,692	638,347
	Valencia .....	223,896	337,858	473,731
	Alicante .....	266,586	289,193	305,443
	Other ports .....	1,084,307	1,214,611	1,723,472
Total .....	3,977,905	5,388,576	7,027,342	
4	Finland <sup>3</sup>			
5	France			
	All French ports <sup>7a</sup> .....	3,811,300	5,423,400	6,450,900
6	Greece			
	Pireaus .....	428,000	635,000	730,000 <sup>4</sup>

1. Not including goods in containers transported by road or rail.

2. Estimates.

3. No data available.

4. Estimates. During the first ten months the volume of goods carried was 607,000 tonnes.

7a. Gross: containers and goods.



Table 1.2 (Cont'd)

PORTS		1975	1976	1977
		TONNES		
7	Ireland <sup>5</sup>			
	Cork .....	74,384	86,336	} 6
	Dublin .....	992,399	1,153,491	
	New Ross and Waterford ..	496,282	614,242	
	Other ports .....	56,949	37,841	
	Total .....	1,620,014	1,891,910	
8	Italy			
	Genova .....	228,774	213,620	120,114
	La Spezia .....	33,426	40,012	39,970
	Livorno .....	25,726	32,616	33,077
	Napoli .....	57,194	52,667	52,946
	Palermo .....	1,182	1,244	1,275
	Cagliari .....	2,267	2,492	2,558
	Brindisi .....	18,259	24,126	23,998
	Ravenna .....	700	677	388
Venezia .....	14,621	13,006	13,154	
Trieste .....	72,463	78,640	78,813	
9	Netherlands			
	Rotterdam .....	8,244,747	9,531,099	10,782,800
	Amsterdam .....	296,542	277,400	387,707
	All ports .....	8,937,344	10,432,918	11,790,117
10	Portugal			
	Leixoes .....	292,152	370,383	223,352
	Douro .....	2,751	-	50
	Lisboa .....	425,578	712,778	748,100 <sup>8</sup>
11	United Kingdom			
	London .....	2,067,000	2,433,000	2,656,000
	Southampton .....	1,478,000	1,931,000	2,088,000
	Liverpool .....	1,351,000	1,501,000	1,792,000
	Felixstowe .....	1,524,000	1,466,000	1,645,000
	Other ports .....	7,403,000	6,941,000	7,077,000
	Total UK ports .....	13,824,000	14,272,000	15,258,000

5. Figures include "Lancashire flats", 10' x 8' containers and bulk liquid containers of a minimum capacity of 500 gallons.

6. Not yet available.

7. First six months.

8. Figures liable to correction.

2. SEABORNE CONTAINER TRAFFIC ON MAJOR ROUTES

Table 2.1 NUMBER OF CONTAINERS  
(containers 20 feet and over; laden and empty)

LINKS		1975	1976	1977
		NUMBER OF CONTAINERS		
1	Germany <sup>1</sup>			
	Federal Republic of Germany			
	- Europe .....	103,740	136,793	175,000
	- United States .....	176,604	205,231	209,000
	- Asia .....	173,219	195,925	217,000
	- Australia .....	31,735	33,540	33,000
	- Africa .....	12,812	20,270	32,000
	- Canada .....	7,551	8,418	13,000
- Other .....	9,551	13,766	23,000	
	Total .....	515,212	613,943	702,000
2.	Austria <sup>3</sup>			
	- Germany .....	6,097	6,438	7,409
	- Italy .....	4,504	4,808	6,895
	- Czechoslovakia .....	1,825	2,574	2,614
	- Belgium .....	1,276	1,927	2,495
	- United Kingdom .....	1,147	1,445	1,012
	- Yugoslavia .....	985	912	1,418
	- Netherlands .....	545	474	584
3	Belgium			
	Antwerpen			
	- North America .....	105,196	112,834	125,824
	Zeebrugge			
	- United Kingdom .....	82,114	80,623	83,133
	- Australia and New Zealand .....	23,099	21,434	24,143
	- North America .....	8,666	6,103	8,080
	- elsewhere of which:	2,128	7,866	22,610
	- South Africa .....	-	-	12,682
	- West Africa .....	-	-	2,172
	- Middle East .....	-	-	437
- North-East Europe ..	-	-	2,844	
- elsewhere .....	-	-	4,475	

1. Not including goods in containers sent by road or rail.

2. Estimates.

3. Rail transport only.

Table 2.1 (Cont'd)

LINKS		1975	1976	1977
		NUMBER OF CONTAINERS		
	Gent			
	- Sweden .....	10,477	10,499	8,794
	- elsewhere of which :	-	-	519
	- West africa .....	-	-	485
	- Middle East .....	-	-	34
4	Spain			
	Foreign trade .....	175,871	227,276	313,752
	Coastal .....	258,654	294,014	364,595
5	Ireland <sup>4</sup> .....			
	Ireland - United Kingdom ...	184,500	184,726	} 5
	Ireland - elsewhere .....	47,536	55,709	
6	Italy			
	United Kingdom .....	21,892	28,671	14,830
	Belgium .....	15,558	19,963	9,573
	Netherlands .....	11,873	13,831	8,672
	Germany .....	13,773	27,842	18,800
	Spain .....	8,382	11,748	5,562
	Austria .....	4,504	4,808	3,263
	France .....	7,476	9,171	7,160
7	Netherlands			
	Rotterdam-Europe .....	300,611	329,789	377,151
	United Kingdom/Ireland ....	195,659	214,748	232,894
	Germany .....	22,858	20,666	27,623
	Spain/Portugal .....	31,572	42,266	52,451
	France .....	18,534	21,092	23,130
	Africa .....	13,923	17,614	33,571
	North America .....	243,482	273,134	265,519
	South America .....	1,725	2,144	1,349
	Asia .....	138,650	172,991	193,347
	Saudi Arabia .....		13,221	37,058
	Singapore .....	16,345	18,022	15,600
	Japan .....	70,511	79,385	64,854
	Hong Kong .....	24,400	28,318	27,517
	Australia/New Zealand .....	20,881	18,145	25,170
	Amsterdam-Europe .....	11,799	7,140	10,872
	United Kingdom .....	5,814	305	6,224
	Sweden .....	4,682	5,103	3,118
	North America .....	12,099	16,948	12,950
	Other .....	121	86	263

4. Figures include "Lancashire flats", 10' x 8 containers and bulk liquid containers of a minimum capacity of 500 gallons.

5. Not yet available.

6. First six months.

Table 2.1 (Cont'd)

LINKS		1975		1976		1977	
		NUMBER OF CONTAINERS					
		LEIXOES	DOURO	LEIXOES	DOURO	LEIXOES	DOURO
8	Portugal						
	United States and Canada ....	2,254		1,960		1,285	} 6
	Far East .....	84		107		60	
	United Kingdom and Ireland ..	10,702	159	10,168	3	5,754	
	FRG .....	421	15	781		392	
	Scandinavia .....	1,923		7,367		4,157	
	Benelux .....	8,375	103	9,695		6,358	
	France .....	740		666		208	
	Spain and Portugal .....	957		1,990		1,463	
	Italy .....	1,272		1,259		242	
	Greece .....	23		195		40	
	Morocco .....	14		109		18	
	Other .....	2,901		708		804	
				L i s b o a			
	Total .....	43,987		64,750		67,775	} 7
	Northern Europe .....	13,947		19,501		23,962	
	United Kingdom .....	10,540		11,439		14,271	
	Northern Spain and France ...	3,224		5,297		4,598 <sup>1</sup>	
	Mediterranean .....	6,673		12,905		12,520	
	North America and Canada ...	7,317		11,779		6,559	
	Australia .....	240		321		554	
	Japan .....	162		60		342	
	Other .....	1,884		3,448		4,969	
9	United Kingdom						
	Foreign trade						
	Ireland .....	144,000		110,000		114,000	
	Continent .....	359,000		382,000		379,000	
	Scandinavia and Baltic ... countries .....	165,000		173,000		172,000	
	Iberian peninsula and Mediterranean .....	91,000		106,000		124,000	
	North America .....	226,000		240,000		252,000	
	Other .....	237,000		303,000		369,000	
	Total .....	1,222,000		1,313,000		1,409,000	
	Coastal shipping	174,000		123,000		123,000	
	Total foreign trade and coastal shipping .....	1,396,000		1,437,000		1,532,000	

6. First six months.

7. Figures liable to correction.

Table 2.2 TONNAGE CARRIED IN CONTAINERS  
(20 feet and over)

LINKS		1975	1976	1977
		TONNES		
1	Germany <sup>1</sup>			
	Federal Republic of Germany			
	- Europe .....	877,265	1,251,241	1,714,000
	- United States .....	1,881,213	2,297,656	2,377,000
	- Asia .....	1,341,488	1,502,373	1,866,000
	- Australia .....	256,341	280,208	308,000
	- Africa .....	82,170	152,933	272,000
	- Canada .....	78,841	101,696	147,000
	- Other .....	64,656	107,427	201,000
Total .....	4,581,974	5,693,534	6,885,000	
2	Austria <sup>3</sup>			
	- Germany .....	72,143	78,153	77,000
	- Italy .....	34,570	48,109	70,912
	- Czechoslovakia .....	19,712	22,097	26,929
	- Belgium .....	24,090	36,200	44,747
	- United Kingdom .....	21,925	23,548	14,391
	- Yugoslavia .....	1,420	1,191	8,914
	- Netherlands .....	9,453	6,216	8,251
3.	Belgium			
	Antwerpen			
	- North America .....	1,664,265	1,820,203	2,062,134
	Zeebrugge			
	- United Kingdom .....	1,091,885	1,070,690	1,176,184
	- Australia and New Zealand	274,870	221,255	246,183
	- North America .....	100,151	80,427	106,686
	- elsewhere of which:	26,473	46,191	282,584
	- South Africa .....	-	-	169,539
	- West Africa .....	-	-	16,994
	- Middle East .....	-	-	5,440
	- North-East Europe ...	-	-	33,707
	- elsewhere .....	-	-	56,904
Gent				
- Sweden .....	41,581	51,723	42,372	
- elsewhere of which:			5,691	
- West Africa .....	-	-	4,977	
- Middle East .....	-	-	714	

1. Not including goods in containers sent by road or rail.

2. Estimates.

3. Rail transport only.

Table 2.2 (Cont'd)

LINKS		1975	1976	1977
		TONNES		
4	Spain			
	Foreign trade .....	1,992,254	2,811,872	3,657,044
	Coastal .....	1,985,651	2,576,704	3,370,298
5	Ireland <sup>5</sup>			
	Ireland-United Kingdom ....	1,191	1,353	} 4
	Ireland-elsewhere .....	429	539	
6	Italy			
	United Kingdom .....	414,043	557,093	286,437
	Belgium .....	284,012	381,104	179,926
	Netherlands .....	171,289	213,997	124,641
	Germany .....	188,480	403,447	254,266
	Spain .....	33,956	41,637	18,068
	Austria .....	34,599	48,159	35,907
France .....	35,588	36,401	48,245	
7	Netherlands			
	Rotterdam-			
	Europe .....	3,389,365	3,905,629	4,557,528
	United Kingdom/Ireland .....	2,201,975	2,474,561	2,807,381
	Germany .....	220,929	208,204	304,843
	Spain/Portugal .....	396,395	610,653	713,062
	France .....	235,549	259,608	264,169
	Africa .....	107,653	165,279	318,047
	North America .....	3,152,127	3,629,470	3,707,253
	South America .....	8,416	8,419	8,992
	Asia .....	1,396,117	1,644,243	1,950,031
	Saudi Arabia .....		119,630	360,875
	Singapore .....	196,373	167,942	172,771
	Japan .....	720,657	784,410	680,341
	Hong Kong .....	211,806	238,027	255,473
	Australia/New Zealand .....	191,069	178,059	240,949
	Amsterdam-			
	Europe .....	139,484	85,730	147,603
	United Kingdom .....	71,694	4,634	95,306
Sweden .....	50,936	56,989	33,477	
North America .....	157,058	190,849	276,235	
Elsewhere .....		821	2,391	

4. Not yet available.

5. Figures include "Lancashire flats", 10' x 8' containers and bulk liquid containers of a minimum capacity of 500 gallons.

6. First six months.

Table 2.2 (Cont'd)

LINKS	1975		1976		1977	
	LEIXOES	DOURO	LEIXOES	DOURO	LEIXOES	DOURO
8	Portugal					
	United States and Canada .....	26,389		26,128	18,833	
	Far East .....	1,133		1,705	1,048	
	United Kingdom and Ireland ...	89,782	1,268	105,401	59,061	
	FRG .....	6,703	258	10,079	5,531	
	Scandinavia .....	28,305		49,705	31,132	
	Benelux .....	107,724	1,225	138,693	93,713	
	France .....	7,143		10,001	2,180	
	Spain and Portugal .....	6,336		8,877	6,317	
	Italy .....	12,699		15,414	775	
	Greece .....	11		102	167	
	Morocco .....	75		234	108	
	Elsewhere .....	5,852		4,044	4,487	50
	L i s b o a					
	Total .....	424,703		712,778	748,475	
	Northern Europe .....	154,609		222,348	268,117	
	United Kingdom .....	93,023		119,673	145,748	
	Northern Spain and France ..	29,220		51,979	52,047	
	Mediterranean .....	55,586		134,889	147,606	
	North America and Canada ...	78,052		151,014	89,503	
	Australia .....	2,010		2,754	6,296	
	Japan .....	905		524	4,427	
	Elsewhere .....	11,298		29,597	34,731	
9	United Kingdom					
	Foreign Trade					
	- Ireland .....	1,311,000		1,073,000	1,113,000	
	- Continent .....	3,773,000		4,190,000	4,173,000	
	- Scandinavia and Baltic countries .....	1,564,000		1,641,000	1,588,000	
	- Iberian peninsula and Mediterranean .....	987,000		1,032,000	1,323,000	
	- North America .....	2,584,000		2,737,000	2,937,000	
	- Elsewhere .....	2,146,000		2,828,000	3,319,000	
	- Total .....	12,365,000		13,501,000	14,453,000	
	Coastal shipping .....	1,459,000		771,000	805,000	
	Total foreign trade and coastal shipping .....	13,824,000		14,272,000	15,258,000	

6. First six months

7. Figures liable to correction

**3. LARGE CONTAINER (20 FEET AND OVER) TRAFFIC  
BETWEEN SEAPORTS AND THE HINTERLAND**

**Table 3. NUMBER OF CONTAINERS CONSIGNED BY RAIL,  
ROAD VEHICLES AND WATERWAY CRAFT TO AND FROM SEAPORTS**

MODE	1975	1976	1977	
	NUMBER OF CONTAINERS			
1	Germany <sup>1</sup>			
	Rail of which: .....	71,191	99,759	99,065
	(a) to seaports .....	41,633	52,491	51,797
	(b) from seaports .....	29,558	47,268	47,268
	Road vehicles <sup>2</sup> of which: .....	145,000	190,000	232,000
	(a) to seaports .....	64,000	85,000	107,000
	(b) from seaports .....	81,000	105,000	125,000
2	Belgium			
	Percentage for ports of Zeebrugge and Gent (Z, G)			
	Rail, of which:			
	(a) to seaports .....	Z 80% G -		
	(b) from seaports .....	Z 75% G -	id. <sup>3</sup>	id <sup>3</sup>
	Road vehicles, of which:			
	(a) to seaports .....	Z 20% G 100%		
	(b) from seaports .....	Z 25% G 100%	id. <sup>3</sup>	id <sup>3</sup>
3	France			
	Rail, of which:			
	(a) to seaports .....		69,036	89,062
	(b) from seaports .....		37,782	44,022
	Waterway craft, Rhine traffic			
	Inward .....	44	497	491
	Outward .....	40	9	89
	Total .....	84	506	580
	Rail (laden containers)**			
	- inland transport .....	*	59,073	
	- land transport, imports ....	*	25,143	
	- land transport, exports ....	*	17,137	

1. Figures relate to laden containers going to or from German ports.

2. Estimates.

3. Same percentage for 1976 and 1977 - statistics are inadequate.

\*\* - Inland transport = transport between two french inland stations.

- Land transport, imports (exports) = transport between a foreign railway station and a French inland railway station via a land frontier crossing (or vice versa).

\* Not known.



Table 3 (Cont'd)

MODE		1975	1976	1977
		NUMBER OF CONTAINERS		
4	Finland			
	Total of which:			
	(a) to seaports .....	27,722	26,275	22,350
	(b) from seaports .....	32,186	32,869	35,300
	Land container transport (imports) .....	5,347	4,044	3,300
	Land container transport (exports)	3,719	9,613	15,550
5	Spain			
	Rail of which:			
	(a) to seaports .....	2,962	2,378	4,328
	(b) from seaports .....	885	949	1,726
6	Greece			
	Rail, of which:			
	(a) to seaports .....		918	1,176
	(b) from seaports .....			
	Road vehicles, of which:			
	(a) to seaports .....	10,485	15,172	33,000 <sup>4</sup>
	(b) from seaports .....			
7	Italy			
	Rail, of which:			
	(a) to seaports .....	24,128	30,812	17,428
	(b) from seaports .....	20,310	27,141	15,532

## Number of containers carried by FS - International and domestic traffic

	1975		1976		1977	
	LADEN	EMPTY	LADEN	EMPTY	LADEN	EMPTY
Domestic	45,363	39,362	66,854	57,566	34,306	35,354
International I <sup>6</sup>	33,650	17,575	47,927	21,227	28,152	10,606
E <sup>7</sup>	37,463	5,433	49,054	10,531	27,600	9,250

4. Estimates

5. First six months.

6. I = Imports.

7. E = Exports.

Table 3 (Cont'd)

MODE		1975		1976		1977	
		NUMBER OF CONTAINERS					
8	Netherlands <sup>8</sup>						
	Rail .....	121,500		151,200		158,000	
		( <sup>+</sup> - 25%)		( <sup>+</sup> - 23%)		( <sup>+</sup> - 22%)	
	Road .....	+ 65%		+ 67%		+ 68%	
	Inland waterway .....	+ 5%		+ 5%		+ 5%	
	Errors and omissions .....	+ 5%		+ 5%		+ 5%	
9	Portugal						
	Rail of which:	DOURO	LEIXOES	DOURO	LEIXOES	DOURO	LEIXOES
	(a) to seaports .....	-	-	-	268	-	-
	(b) from seaports .....	-	-	-	64	-	-
	Road vehicles, of which:						
	(a) to seaports .....	-	-	-	3,265	-	1,243
	(b) from seaports .....	-	1,385	-	-	-	1
	Waterway craft of which:						
	(a) to seaports .....	-	-	-	-	-	-
	(b) from seaports .....	-	-	-	-	-	-
	Total of which:						
	(a) to seaports .....	-	-	-	3,533	-	1,243
(b) from seaports .....	-	-	-	64	-	1	
10	United Kingdom						
	Rail, of which: <sup>9</sup>						
	(a) to seaports .....	327,000		372,000			
	(b) from seaports .....						

Number of containers<sup>9</sup> carried by rail,  
international and domestic traffic

Domestic .....	341,000	381,000	366,000
International .....	327,000	372,000	371,000
Total .....	668,000	753,000	737,000

8. Full figures not available.

9. Laden containers (estimates).

Table 3 (Cont'd)

	MODE	1975	1976	1977
		NUMBER OF CONTAINERS		
11	Switzerland			
	Rail, of which:			
	(a) to seaports .....	8,561	10,506	13,132
	(b) from seaports .....	9,027	9,842	11,810
	Road vehicles, of which:			
	(a) to seaports .....			
	(b) from seaports <sup>10</sup> .....			
	Waterway craft, of which:			
	(a) to seaports .....	123	139	248
	(b) from seaports .....	255	530	610
	i) inland container transport;	13,643	13,424	16,168
	ii) inland container transport (imports) .....	3,035	3,651	4,365
	iii) inland container transport (exports) .....	2,976	3,115	3,973

10. No data available.

#### 4. ROLL-ON/ROLL-OFF TRAFFIC

Table 4.1 NUMBER OF VEHICLES CARRIED  
(lorries, semi-trailers; trailers, laden and empty)

	ROUTE	1975	1976	1977
		NUMBER OF VEHICLES		
1	Germany			
	All links .....	394,770	440,000	440,000 <sup>2</sup>
	of which:			
	between German Baltic ports and Scandinavia .....	366,820	417,346	1

1. Not yet available.

2. Estimates

Table 4.1 (Cont'd)

ROUTE		1975	1976	1977
		NUMBER OF VEHICLES		
2	Belgium			
	Antwerpen .....	3	3	3
	Zeebrugge - United Kingdom .	65,000 <sup>2</sup>	71,866	80,000 <sup>2</sup>
	Gent .....	3	3	3
3	Greece			
	Total .....			3,000 <sup>4</sup>
4	Ireland			
	Total .....	61,544	86,401	5
5	Italy			
	Continent-Sicily and vice-versa	103,423	175,332	112,864 <sup>6</sup>
	Continent-Scandinavia and vice-versa .....	7,274	9,398	5,809
6	Netherlands			
	Netherlands .....	225,813	235,845	226,143
7	Europe .....	225,129	235,216	224,420
	United Kingdom .....	218,573	227,830	219,242
	Sweden .....	5,324	5,643	4,958
	Rotterdam .....	142,246	154,870	142,847
	Amsterdam .....	7,750	5,940	5,005
	from/to Hoek van Holland .	15,222	15,870	14,870
	Scheveningen ....	46,951	42,093	38,317
	Vlissingen .....	13,644	17,072	25,104
7	Portugal			
	Total .....	305	X	X
	United Kingdom .....	298	X	X <sup>7</sup>
	Other .....	7	X	X
8	United Kingdom			
	Foreign trade of which: .....	865,000	995,000	1,105,000
	France .....	252,000	283,000	342,000
	Belgium .....	221,000	261,000	304,000
	Netherlands .....	223,000	226,000	212,000
	Denmark/Sweden .....	94,000	100,000	100,000
	Coastal shipping .....	202,000	271,000	292,000
	Total .....	1,067,000	1,266,000	1,397,000

2. Estimates. 3. No figures available.

4. Estimates.

5. Not available.

6. First six months.

7. X - Figures not know.

Table 4.2 TONNAGE OF GOODS CARRIED BY ROLL-ON/ROLL-OFF SERVICES

ROUTE		1975	1976	1977	
		TONNES			
1	Germany <sup>1</sup>				
	All links	3,246,000	3,606,000		
	of which:			2	
	between German Baltic ports and Scandinavia	2,938,500	3,449,000		
2	Belgium				
	Antwerpen	710,654	807,577	1,015,789	
	Zeebrugge- United Kingdom <sup>a)</sup>	2,286,577 <sup>a)</sup>	2,771,165 <sup>a)</sup>	3,150,614	
	Gent <sup>b)</sup>	292,214 <sup>b)</sup>	323,561	404,212	
		205,430	205,535	200,123	
3	Finland				
	Total inward	787,320	816,237	5	
	Total outward	622,588	781,281		
4	Greece				
	All links			32,000 <sup>6</sup>	
5	Ireland				
	Total	615,987	820,917	7	
6	Netherlands				
	Total	4,468,062	4,463,302	4,621,279	
	Netherlands				
	Europe	4,458,122	4,456,157	4,600,731	
	from/to	United Kingdom	4,368,022	4,355,571	4,517,292
		Sweden	78,014	82,703	78,282
		Rotterdam	2,843,824	2,863,473	3,032,517
		Amsterdam	117,811	83,963	78,564
		Hoek van Holland	266,700	271,145	112,962
		Scheveningen	950,708	917,769	815,771
Vlissingen	289,019	326,952	341,465		

1. Estimates.
2. Not yet available.
3. First six months.
4. a) = with car-ferry, b) = with train-ferry.
5. Data not yet available.
6. Estimate.
7. Not available.

Table 4.2 (Cont'd)

ROUTE	1975	1976	1977
	TONNES		
7 Portugal			
Total	17,243	10,082	11,354
United Kingdom	2,069	X <sup>8</sup>	X
Elsewhere	15,174	X	X <sup>8</sup>
8 United Kingdom			
Foreign trade of which:	8,878,000	10,546,000	11,454,000
- France	2,599,000	2,948,000	3,475,000
- Belgium	2,114,000	2,551,000	2,998,000
- Netherlands	2,750,000	2,886,000	2,539,000
- Denmark/Sweden	795,000	857,000	898,000
Coastal shipping	1,933,000	2,677,000	3,331,000
Total	10,810,000	13,223,000	14,785,000

8. X - Figures not known.

## 5. PIGGY-BACK TRAFFIC

### 1 Germany

#### (a) Piggy-back train links (as at summer 1977)

München - Köln/Wuppertal/Neuss  
Lunwigsburg - Wuppertal  
Neu Ulm/Ludwigsburg - Köln/Neuss/Wuppertal  
Mannheim/Nürnberg - Köln/Neuss/Wuppertal  
Nürnberg/Mannheim - Köln/Neuss/Wuppertal  
Nürnberg/Manheim - Hannover/Hamburg/Bremen  
Ludwigsburg - Hannover/Bremen/Hamburg  
Karlsruhe/Frankfurt Ost - Hannover/Bremen/Hamburg  
München - Hannover/Bremen/Hamburg  
Hamburg - Bochum/Wuppertal/Neuss  
Berlin - Bielefeld/Bremen/Bochum  
Milano/Lugano - Mannheim/Köln/Neuss  
Bâsel - Köln/Neuss  
(inland link) Köln - Rotterdam  
(inland link) Neuss - Antwerpen/Oostende  
Köln, Eifeltor - Paris, la Chapelle  
Ljubljana - München/Köln, Eifeltor  
Verona - Köln, Eifeltor

Table 5. (Cont(d))

## (b) Volume of piggy-back traffic

	1975		1976		1977 <sup>2</sup>	
	NUMBER <sup>1</sup>	NET TONNAGE	NUMBER <sup>1</sup>	NET TONNAGE	NUMBER <sup>1</sup>	NET TONNAGE
Swop-bodies	93,400	1,345,000	105,600	1,407,000	108,200	1,512,000
Semi-trailers	26,800	470,000	34,700	646,000	31,300	548,000
Lorries + trailers	10,400	185,000	7,200	147,000	7,400	140,000
Total	130,600	2,000,000	147,500	2,200,000	146,900	2,200,000

1. Consignments.

2. Estimates.

## 2 Austria (transit)

LINKS	1975		1976		1977	
	NUMBER OF VEHICLES	QUANTITY OF GOODS CARRIED(tons)	NUMBER OF VEHICLES	QUANTITY OF GOODS CARRIED(tons)	NUMBER OF VEHICLES	QUANTITY OF GOODS CARRIED(tons)
Köln-Verona	265	4,990.6	348	7,539.7	593	12,513.2
Verona-Köln	373	8,391.6	370	8,232.8	523	11,839.3
Köln-Ljubljana	-	-	170	2,996.8	257	4,152.8
Ljubljana-Köln	-	-	75	1,169.2	115	1,437.4
München-Ljubljana	-	-	98	1,642.5	76	1,251.1
Ljubljana-München	-	-	45	759.7	80	755.4
München-Verona	-	-	-	-	84	1,609.6
Verona-München	-	-	-	-	79	1,656.7
Neu Ulm-Verona	-	-	-	-	15	177
Verona-Neu Ulm	-	-	-	-	2	42
Total	638	13,382.2	1,106	22,340.7	1,824	35,434.5

Table 5 (Cont' d)

		1975	1976	1977
		NUMBER		
3	Belgium			
	Inward from: .....	1,354	3,692	5,067
	- Italy .....	1,059	3,147	4,316
	- France .....	295	545	751
	Outward to: .....	1,522	3,689	5,007
	- Italy .....	1,166	3,119	4,286
	- France .....	356	570	721
		TONNAGE (t)		
	Inward from: .....	31,338	90,631	116,586
	- Italy .....	25,169	78,504	100,982
	- France .....	6,169	12,127	15,604
	Outward to: .....	36,094	92,669	118,558
	- Italy .....	28,569	79,825	104,273
	- France .....	7,525	12,844	14,285

## 4. France

## a) Daily links

## 1. Inland traffic

- Paris / Avignon - Bordeaux - Dax - Grenoble - Lyon - Marseille - Nice - Sète - Strasbourg - Toulouse
- / Brest - Lorient - Morlaix - Nantes - Rennes - St Brieux
- Lille
- Dunkerque / Avignon - Bordeaux - Grenoble - Lyon - Marseille - Toulouse
- Le Havre
- St Quentin

## 2. International traffic

- Le Havre - Cherbourg / Hendaye (G. B. / Espagne)
- Perpignan / Strasbourg (Espagne / Allemagne)
- Anvers - Bruxelles / Bologne - Novare - Milan
- Charleroi - Liege / Rome - Turin
- Dunkerque - Le Havre / Bologne - Novare - Milan
- Cherbourg / Rome - Turin



Table 5 (Cont'd)

France

b) Volume of piggy-back traffic

	1975		1976		1977	
	NUMBER	TONS	NUMBER	TONS	NUMBER	TONS
Inland Traffic						
Semi-trailers						
Kangourou and Kangourou - Gantry crane .....	61,918	1,107,824	66,943	1,186,336	69,098	1,222,895
Swop bodies .....	3,046	47,191	4,077	59,544	5,821	78,337
International traffic						
Semi-trailers						
Kangourou and Kangourou - Gantry crane .....	18,334	380,476	22,918	499,760	26,775	570,330
Swop bodies .....	947	20,058	2,648	60,843	7,110	150,097
	84,245	1,555,549	96,586	1,806,483	108,804	2,021,659

5. Italy - Number of vehicles, empty and laden (lorries, semi-trailers, trailers) and tonnage carried

LINK	1975		1976		1977	
	NUMBER	TONNES	NUMBER	TONNES	NUMBER	TONNES
			HUCKEPACK SYSTEM			
Italy-Switzerland I <sup>3</sup>	2,057	51,692	3,333	89,461	2,092	56,649
Germany E <sup>3</sup>	1,632	35,278	2,916	70,573	1,960	46,440
			KANGOUROU SYSTEM			
Italy-France I <sup>3</sup>	7,047	146,915	9,378	201,714	5,595	119,354
Benelux E <sup>3</sup>	6,970	147,763	9,462	210,486	5,769	142,737
			SIMMERING SYSTEM			
Verona-Köln I <sup>3</sup>	514	9,491	572	12,364	342	7,008
E <sup>3</sup>	554	12,542	575	12,438	285	6,498

3. I = inwards, E = outwards.

Table 5 (Cont'd)

6 Netherlands		1975	1976	1977
System		Number of vehicles carried		
Huckepack .....		3,843	7,404	5,811
Kangourou .....		1,839	640	433
		Tonnage carried		
Huckepack .....		88,621	174,143	145,369
Kangourou .....		13,164	36,064	9,245

7 Switzerland		1975		1976		1977	
IN BOTH DIRECTIONS		CONSIGN- MENTS	GROSS TONNAGE	CONSIGN- MENTS	GROSS TONNAGE	CONSIGN- MENTS	GROSS TONNAGE
Main route :							
Basel-Melide } <sup>4</sup>		5,552	126,916	6,406	153,857	6,986	172,407
Basel-Lugano }							
Vedeggio }							
International links:							
Melide-Rotterdam } <sup>4</sup>		187	3,584	551	10,736	931	21,623
Lugano V. -R'dam }							
Melide-Neuss } <sup>4</sup>		379	8,183	634	14,443	483	10,142
Lugano V. -Neuss }							
Melide-Mannheim } <sup>4</sup>		95	1,723	177	3,308	556	13,487
Lugano V. -M'heim }							
Melide-Köln } <sup>4</sup>		1,601	43,197	2,576	69,360	2,079	58,765
Lugano V. -Köln }							
Köln-Wohlen		684	12,746	1,164	21,784	1,650	29,089
Milano-Wohlen		-	-	3	36	-	-
Milano-Neuss		1,479	35,309	1,581	40,524	1,237	33,681
Milano-Köln		1,236	31,967	2,376	63,712	3,136	82,946
Milano-Mannheim		867	14,762	1,290	21,729	1,387	25,015
Milano-Rotterdam		977	24,992	2,502	67,490	2,702	69,192
Melide-Oostende						18	326
Wuppertal-Milano						66	1,546
Ludwigsburg-Milano						56	1,160
Milano-Antwerpen						32	730
Total 2		7,505	176,463	12,854	313,122	14,420	349,635
Lugano-Harwich						24	504
Milano-Harwich						15	319
Milano-Travemünde		-	-	-	-	26	694
Milano-Hamburg						9	250
Other						13	266
						87	2,033

4. Up to 3.7.77: Melide.

As from 4.7.77: Lugano Vedeggio.

## RESOLUTION No. 38 ON TRANSPORT FOR HANDICAPPED PERSONS

[CM(78)23]

The Council of Ministers of Transport meeting in Paris on 12th December, 1978;

Having examined the report on the transport of handicapped persons [CM(78)22];

Considering that the reintegration of handicapped persons in professional and social life is one of the important objectives of developed society;

Considering that the reintegration of handicapped persons in the occupational and social life of the community very closely depends on whether they are able to move about as required for journeys to and from work or for any other purpose ;

Considering that all public and private initiatives to facilitate the transport of handicapped persons in Member countries should be encouraged;

Aware that improving transport for handicapped persons implies major financial commitments, particularly as regards the means of transport to be provided for them and the adaptation of rolling stock and facilities in the buildings and places giving access to transport vehicles;

ADOPTS the conclusions of the above-mentioned Report [CM(78)22];

RECOMMENDS the Governments of Member countries to ensure that the responsible authorities and the enterprises and other bodies concerned take suitable action where required, it being important:

- to pursue the design and introduction of improvements intended to give handicapped persons easiest possible access to existing transport services, including long-distance services;
- to seek in this connection to make it less burdensome and easier for handicapped persons and old people to use these services by planning appropriate measures regarding access to terminal facilities and vehicles;
- to make provision to ensure, in cases where no special services are available, that all new installations include the facilities necessary for handicapped persons to move about and to gain access to means of transport;
- to promote, as needed and where feasible, the organisation of specific urban transport facilities for handicapped persons unable to move about unaided;
- to facilitate the use of private cars and taxis by handicapped persons through a package of appropriate measures;
- to use the mass media to make the public aware of the problems of handicapped persons, particularly as regards transport;
- to provide suitable information for handicapped persons regarding the transport facilities available to them;
- to speed up the work of standardization of rolling stock at international level which is being done in the U. I. C. so that a railway carriage suitable for handicapped persons in wheelchairs may be developed;

INSTRUCTS the Committee of Deputies to report back to the Council in due course on action taken as a result of this Resolution.

# REPORT ON TRANSPORT OF HANDICAPPED PERSONS

[CM(78)22]

## 1. INTRODUCTION

1.1 Most ECMT Member countries have shown concern for the reinstatement of handicapped persons in the life of the community, for both work and leisure.

Anything which helps to remove the various obstacles impeding a handicapped person's day-to-day mobility has an important bearing on this general process of readjustment.

Various international bodies (for instance, the Council of Europe, the European Conference of Ministers of Transport and, as regards railway facilities, the UIC) have made investigations as to the measures already taken by Member countries to facilitate the mobility of handicapped persons, notably by providing easier access to different means of transport.

These measures are described in the replies to the questionnaires circulated by the European Conference of Ministers of Transport to all Member countries of that body (Annex I). This questionnaire was also sent to ECMT Associate Members.

By analysing these replies it is possible to outline the broad features of a policy for the transport of handicapped persons.

### 1.2 Definition of handicapped persons:

Few countries have a legal definition of "handicapped person", but it may be mentioned that, in the Federal Republic of Germany, legislation provides that a person is deemed to be handicapped if physical, mental or psychological disability diminishes his or her capacity for work by at least 50 per cent. This legislation applies only to persons domiciled, usually residing or working within the Federal Republic.

Switzerland has adopted a special definition of handicapped person for transport purposes, but most countries go no further than a non-statutory definition.

### 1.3 Statistics

Statistics concerning handicapped persons are somewhat sketchy in most countries, except the Federal Republic of Germany, Belgium, the Netherlands and the United Kingdom. In most cases, only orders of magnitude are available.

## 2. POSSIBLE APPROACHES TO THE PROBLEM

The various countries concerned have sought to deal with obstacles to the mobility of handicapped persons by adopting lines of approach which, very schematically, may be classified under one or the other of the following heads:

- 2.1 Adoption of measures designed to adapt public transport infrastructures and vehicles in such a way as to make them accessible to as many handicapped persons as possible.
  - 2.2 Financial aid on an individual basis to enable handicapped persons to make use of the means of transport best suited to their particular form of disablement.
  - 2.3 Suitable measures to help handicapped persons to make use of a private vehicle if they are able to do so. In such cases, special regulations for fitting out the vehicle should be introduced, together with such measures as may facilitate driving and parking of vehicles by handicapped persons.
3. Analysis of the replies to the questionnaire shows that none of these three approaches taken singly have given optimal results.

The studies undertaken in each Member country of the European Conference of Ministers of Transport shows that there is no all-embracing solution corresponding to a given line of approach.

It seems that most countries try to combine the measures corresponding to each line of approach in such a way as to match each particular situation, notably the size, composition and geographical distribution of the handicapped persons' population.

4. Member countries' replies generally draw attention to a basic consideration which helps to understand the line of thinking adopted by each of them.

- 4.1 Measures designed to improve accessibility for certain groups of handicapped persons can conceivably put at risk others suffering from a different kind of disablement and possibly even people who are not disabled in any way.

In most of the countries concerned, the term "handicapped persons" is applicable to a very mixed range of people whose degree of mobility varies widely; some countries are even inclined to include within it the elderly, or at least those most severely disabled by old age.

- 4.2 On the other hand, in most Member countries, when attempting to define the measures to be adopted, the inclination is to restrict the scope almost exclusively to people with the most conspicuous handicap, namely, those who are obliged to use a wheelchair.

It is interesting to note that handicapped persons make up about 5 per cent of the total population without counting old persons. In the countries concerned by the survey, handicapped persons who are obliged to use a wheelchair usually account for between 4 and 10 per cent of the total handicapped persons' population.

- 4.3 Adaptation of public transport facilities to make them accessible to all handicapped persons, including those dependent on wheelchairs, is undoubtedly the optimal solution, but in nearly all cases it is also the most expensive. The scale of capital costs needed may lead to its being deferred or definitely rejected.

In point of fact, the line of action adopted in most countries shows that the alternatives must not be seen as "all or nothing", bearing in mind that the vast majority of handicapped and elderly people are interested in measures of limited scope which would lessen the hardships involved in using public transport.

## 5. "INDEPENDENT" AND "DEPENDENT" HANDICAPPED PERSONS

Subject to the foregoing considerations, most countries seem to have adopted as a policy guideline the distinction between "independent" (self-sufficient) and "dependent" handicapped persons and to have accepted the idea that easier accessibility to public transport would give independence to hitherto

"dependent" handicapped persons, and so attract to public transport services, people who were previously unable to use them because of the nature of their handicap.

These countries consider that the improvements needed to help "independent" handicapped persons are part of a more general policy designed to give public transport services a better public image.

In short, the distinction between "independent" handicapped persons and those obliged to use a wheelchair makes it clear that all those who, at the cost of some effort, can sometimes use public transport will automatically be the first to benefit from a policy aiming to improve transport services as regards accessibility and otherwise, whereas wheelchair users will usually continue to require special facilities. It would be unfortunate if the installation of automatic doors or gates in consequence of staff cuts should ultimately discourage the use of public transport by certain handicapped persons, the elderly, people travelling with young children, or simply those carrying luggage or parcels.

## 6. ANALYSIS OF POSSIBLE APPROACHES

### 6.1 Adaptation of existing public transport services

6.1.1 Analysis of the replies shows that in most countries the capital cost of converting terminal installations and rolling stock to make them accessible to people suffering from almost any kind of handicap is the main obstacle to the desired improvements.

6.1.2 Apart from this financial obstacle, however, the adaptation of public transport services, particularly for making them accessible to "dependent" handicapped persons, runs into less conspicuous, albeit serious, difficulties, and the main one lies in the policy of seeking to improve the financial viability of public transport services which is pursued by nearly all the countries concerned.

The irreversible tendency to organise public transport services in such a way as to carry the maximum number of passengers at least cost, notably by faster turnround of vehicles, mechanising ancillary services connected with it (automatic ticketing, automatic gates) and widespread one-man operation, all this works against the interests of handicapped persons.

6.1.3 Most of the countries concerned have in fact realised that measures to enable handicapped persons to use public transport services like other users should be shaped with an eye to the degree of mobility and type of disablement of each category of handicapped person.

These measures cover:

- conversion of terminal installations and infrastructures,
- accessibility of vehicles,
- facilities for movement within vehicles.

6.1.4 All these measures have been studied jointly with handicapped persons' associations, the construction industry (with regard to access and adjustments to infrastructure), makers of rolling stock, buses and aircraft, makers of wheelchairs and various passenger transport operators.

6.1.5 In the light of experience some countries have called attention to safety problems which sometimes tend to be under-estimated, particularly as regards accidents, for in such cases speedy evacuation of passengers raises problems not only for handicapped persons but for other passengers as well.

Furthermore, practical experience shows that the devices used to fasten wheelchairs inside vehicles (which have a bearing on the safety of other passengers besides handicapped persons) have not yet received as much attention as they deserve.

6.1.6 Nearly all the countries' replies made it clear that the adjustment of public transport services to make them accessible to all handicapped persons cannot be carried out at one fell swoop, and this applies to every mode of transport.

The technical obstacles to be overcome, and the capital outlays involved make it necessary to introduce the proposed reforms gradually and this usually means that projects designed to provide accessibility for "dependent" handicapped persons are down-graded into long-term aims.

Most countries concerned are accordingly at the experimental stage.

6.1.7 As regards rail transport, the same difficulties confront all ECMT Member countries and they stem from the fact that, as originally designed, railways were intended for the strong and healthy (as witness the inconveniences of railway station layout for wheelchair users, tiring underground passages, coaches difficult of access, facilities inaccessible to wheelchair passengers).

Several countries are carrying out experiments which in some cases have given practical results, notably in the following respects:

- to make railway stations more accessible;
- to provide "flat level" paths inside stations;
- to make rail coaches more easily accessible.

Some countries are now conducting preliminary studies with a view to the design of coaches for handicapped persons carried in wheelchairs (provision being also made for accessibility to toilets). A UIC (International Union of Railways) working group is tackling this problem and has drafted a questionnaire (DOC. UIC TRANS. SCI GE 20 R. 120).

## 6.2 Special transport facilities for handicapped persons

6.2.1 Some countries have sought less costly solutions which can be implemented at short or medium term. For short-distance trips it has become apparent that unless the needs of handicapped persons were taken into account at the time when the transport services concerned were designed, road transport technologies can cater for the essential requirements of handicapped persons by providing demand-responsive or dial-a-ride services, or specially equipped vehicles.

In most ECMT countries such facilities are planned by local authorities and provided either by public transport services or by associations.

6.2.2 As regards road transport, the experiments carried out in the various countries show that it is almost impossible to reverse the well-rooted tendency towards faster turnround of vehicles by automating elementary operations of the transport process and, in consequence, that the admission of wheelchairs on scheduled bus and coach services would hopelessly disrupt the economics of the system.

That is why the countries concerned have directed their efforts in two directions:

- first, to convert bus stops and vehicles so that "independent" (i. e. self-sufficient) handicapped persons may be able to use this mode of transport more easily;
- secondly, to provide special services (specially designed shared taxis or demand-responsive services) for handicapped persons obliged to use wheelchairs.

## 6.3 Individual aid

When there are considerable financial or technical obstacles to the conversion of existing transport modes or when the handicapped population is spread over a wide area many problems can generally be solved by supplying individual transport or by granting personalised financial assistance, and these are probably the less costly solutions for the community.

Several methods are being considered or beginning to be introduced, including the grant of "taxi-cheques", transport vouchers or transport allowances. Belgium, Switzerland, Denmark, the United Kingdom and Sweden seem to be among the most advanced countries in this respect. In Belgium there are three types of aid:

1. Where local authorities have instituted a "taxi-cheque" scheme, they themselves finance a substantial part of its cost;
2. The STIB (Société des Transport Intercommunaux de Bruxelles) operates a minibus service.

The deficit due to the substantial shortfall between revenue from minibuses and the true cost of the services provided is at present financed by the Ministry of Communications' budget;

3. The Centre d'Adaptation à la Route pour Automobilistes Handicapés (CARA) is managed by an association of motor vehicle inspection agencies. Handicapped persons, advised by CARA, take lessons at a driving school and take the driving test with a specially equipped vehicle that CARA makes available to the driving school free of charge. The Fonds National pour le Reclassement social des Handicapés refunds the costs incurred by a handicapped person to convert his vehicle as needed to suit his handicap.

Current studies show that personalised aid is more generally adopted to enable handicapped persons to use taxis. Experience has also shown that taxis and the like will play an increasingly important role in the transport of the handicapped and the elderly, but if they are to play their proper role, especially in rural or low density areas, they should be better designed (particularly as regards width of doors) and their drivers more specially trained. The wheelchair taxi scheme inaugurated in 1976 in Zurich is particularly worthy of note, and the same applies to experiments conducted in Scandinavian countries.

#### 6.4 Use of private cars

In most ECMT countries, more especially in large towns, consideration of pollution control and energy conservation have prompted the authorities to urge the entire population to use public transport services rather than their cars, at least for commuting.

Where handicapped persons are concerned, however, this policy should be more flexible. In the present transport situation, a car is often the only means of transport for isolated handicapped persons, particularly in rural areas. It gives complete independence and considerable convenience for moving about. Moreover, ability to drive a car strengthens a handicapped person's self-esteem as an active member of a society where the motor car looms too large for any particular category of citizen to be systematically denied the use of it.

For all these reasons, several countries are now trying to help handicapped persons to use cars.

Most countries feel that it would be illogical to seek deliberately to channel handicapped persons unable to move about unaided towards specialised transport facilities when they can drive their own car, since this would in fact lessen their independence and work potential. Measures which might encourage the use of cars by handicapped persons should be adopted at international level.

For all these reasons, several countries are now trying to facilitate the use of cars by handicapped persons.

The international road sign designed to enable handicapped persons to park their cars more easily, which the Council of Ministers of the ECMT adopted in 1977, is a significant improvement in itself. It seems that it would also be desirable to devise some means whereby a handicapped person could signal for help from within his vehicle when needed.

Studies are also being conducted in several countries on the following lines:



First:

- to enable handicapped persons' vehicles to fit more smoothly into the flow of traffic (symbol to be affixed on vehicles driven by, or used for the transport of handicapped persons), to facilitate parking of such vehicles and/or enable them to use car parks free of charge.

Secondly:

- to facilitate the purchase of a car or reduce its running costs (e. g. loans, tax abatements and transport allowances).

Lastly, a number of countries are conducting more intensive research on vehicles that can be driven without a driving licence.

## CONCLUSIONS:

The work done by international bodies, particularly the Council of Europe and the European Conference of Ministers of Transport, shows that most governments are now aware that the integration of handicapped persons in the life of the community for both work and leisure, closely depends on the removal of obstacles to their mobility.

The enquiry undertaken by the Ad Hoc Working Party of the European Conference of Ministers of Transport shows that studies are being carried out almost everywhere in Europe.

However, countries which have taken steps in this field (Belgium, Switzerland, Denmark, Finland, France, the Federal Republic of Germany, Norway, the Netherlands, the United Kingdom and Sweden) are still engaged in experiments and, in general, what has been done so far in actual practice to make the use of public transport easier for the handicapped is still of very limited scope.

The disparity between the meagre results obtained and widespread interest in improved transport facilities for handicapped persons may be partly due to the heavy capital cost of adapting public transport facilities accordingly.

It should be noted, however, that attention has been mainly focussed on measures needed to provide transport for wheelchair users. Clearly, for this category of handicapped person there are technical and financial obstacles which are most difficult to overcome on a short or medium-term basis.

On the other hand, a study of the situation in the countries concerned shows that with only small improvements in accessibility to terminal installations and vehicles, a substantial proportion of "independent" (self-sufficient) persons would be able to use public transport services.

It is also apparent that several countries are aware of the possibilities that the use of a private car would offer to many handicapped persons.

It would seem, therefore, that the study should be carried further and that ECMT Member countries should continue to compare their experiences.

Admittedly, the reforms to be adopted in each country depend to a large extent on the specific features of its own transport system and it would be pointless to seek to harmonize national policies in this respect.

The European Conference of Ministers of Transport should however, recommend that Member countries continue their research in various directions as follows:

- to continue the investigations into longer-term improvements for accessibility to existing transport services and envisage the possibility of making any new installation accessible to handicapped persons;
- to make it easier for all "independent" (self-sufficient) handicapped persons and elderly persons to use public transport services by introducing appropriate measures for improved accessibility to terminal installations and vehicles so as to lessen present hardships in this respect;

- to promote the provision of special transport facilities in urban areas for handicapped persons unable to move about unaided;
- to facilitate the use of cars by handicapped persons, whether they can drive or not, by enacting suitable measures to this effect.



**REPORT ON TRANSPORT OF HANDICAPPED PERSONS**

[CM(78)22 Annex revised]

Informations on the present position concerning transport of handicapped persons in various E. C. M. T. Member countries.

HANDICAPPED PERSONS

		DEFINITION		STATISTICS		RESEARCH	FINANCIAL AID		
		IN LEGISLATION	IN COMMON USE	EXIST	DO NOT EXIST		FREE TRANSPORT FOR HANDICAPPED	FREE TRANSPORT FOR ESCORTS	CONCESSIONS
1	Austria	No legal definition. Several Acts refer to handicapped persons but make no distinction according to the type of handicap;	Several fairly broad definitions depend on the scope of the measures concerned;		No. Only a sample survey of physically handicapped persons in the broadest sense in December 1976;		Yes, for urban public transport services; free transport of wheelchairs for disabled ex-servicemen; - Austrian State Railways ÖBB, - AUA Airlines;	Yes, for escorts of disabled ex-servicemen (subject to certain conditions) and for the blind: - urban public transport services and on: - ÖBB trains and buses, Post Offices buses and DDSG boats;	Yes, 50 per cent for disabled ex-servicemen on ÖBB trains and buses, Post Office buses and DDSG boats;
						Other assistance - For severely handicapped persons, refund of taxi fares for journey-to-work trips; - free transport to and from educational and medical care establishments; - subsidisation of most of the costs of special transport for severely handicapped persons travelling to and from cultural, sports and social events; - free trips in special vehicles for wheelchair-bound handicapped persons;			
2	Belgium	No	Broad definition	yes (184,339 in 1970)		- December 1975 "handicapped persons in the Brussels conurbation" - March 1976: "Making public transport what it needs to be" - Taxi-vouchers for handicapped (Union of Handicapped);	Only one ticket needed for a severely handicapped person accompanied by an escort (railways only)		Local authorities issue taxi vouchers with 50 % or 25 % reduction depending on the authority
3	Denmark	No	A person whose mobility is temporarily or permanently reduced is regarded as a handicapped person.		No (estimates)	Report by working Party set up by the Minister of Works	No	A free ticket is given to persons escorting the blind	50 per cent reduction for handicapped persons on the railways

HANDICAPPED PERSONS (Cont'd)

		DEFINITION		STATISTICS		RESEARCH	FINANCIAL AID		
		IN LEGISLATION	IN COMMON USE	EXIST	DO NOT EXIST		FREE TRANSPORT FOR HANDICAPPED	FREE TRANSPORT FOR ESCORTS	CONCESSIONS
4	Finland		Persons with reduced capacity for activity or mobility owing to age, illness or disability;		No (orders of magnitude)	"Construct and Plan for Everyone" (Finnish Union of Disabled) "Handicapped persons in a structured environment" (Associations of Handicapped Persons)	No (but aid is possible)		Motor tax refund according to degree of disability
5	France	No			No (orders of magnitude)	Transport research Institute: Research on problems of transport for handicapped persons: "The physically handicapped and Public Transport"; Study of the social integration of physically handicapped persons (in progress); Report by an Interministerial Working Party.	No	Severely disabled ex-servicemen and civilian blind have the right to be accompanied free of charge by a guide on the railways and on the buses.	No, but road licence exemption for certain disabled.
6	Federal Republic of Germany	Yes, but incomplete: only the severely disabled are defined by law;		Yes (4,095,000)		- (STUVA) Studies on urban transport - (DB): Studies on short and medium-term measures;	Yes, in public urban transport;	Yes, in public urban transport and long-distanced transport;	
7	Ireland	No	Yes (100,000) Approximately 2,000 using wheelchairs				A scheme of grants towards the cost of motorised transport and/or adaptations to motorised transport for disabled drivers is administered by Health Boards; Health Boards give commuter travel tickets in Dublin and Cork and elsewhere actual public transport costs		Exemption from the payment of the annual registration fee or motor tax on private cars.

HANDICAPPED PERSONS (Cont'd)

		DEFINITION		STATISTICS		RESEARCH	FINANCIAL AID		
		IN LEGISLATION	IN COMMON USE	EXIST	DO NOT EXIST		FREE TRANSPORT FOR HANDICAPPED	FREE TRANSPORT FOR ESCORTS	CONCESSIONS
	Ireland (Cont'd)						for persons undergoing rehabilitation training; - Various categories of handicapped persons are permitted to travel free on the road and rail services of Coras Iompair Eireann (the National Transport Undertaking) and on the services of certain private bus operators;		An annual petrol allocation at reduced price;
8	Italy	Yes, Act n° 118 of 30th March 71 defines civilian disabled. The implementing regulations are dated 27th April 78. Disabled industrial workers, blind people, and deaf-mutes are covered by other legislation.			No		The state railway provide free transport, exclusively for wheelchairs, tricycles and dogs for the blind;	Free transport for persons escorting blind people and certain disabled ex-servicemen and industrial workers;	Reductions of 30% are granted to blind person and 20-40% to disabled ex-servicemen and industrial workers;
9	Netherlands	No	Broad definition	Yes (366,100)		Special document in 76/77 by the Second Chamber of the States-General		Escort pays no fare but handicapped person pays full rate	
10	Norway	No	Person whose mobility is reduced as a result of a physical, mental or other affliction and who cannot (or only with difficulty), use public transport;		No	Research in progress by Trondheim School of Technology on the transport of handicapped persons;	Handicapped persons receive a basic financial support meant to compensate for extra costs of living, included for transportation from the national Social Security System (Folkestrygden)	No	Handicapped persons, receiving social security funds due to their disabilities, are entitled to half price on virtually all public transportation means;
11	Portugal	No, but under consideration  Yes, for disabled ex-servicemen	Broad definition	No; under consideration		Report by a Government working party	- exemption from vehicle tax - vehicles used by handicapped may be purchased duty-free;		75% reduction on railways for handicapped ex-servicemen;

HANDICAPPED PERSONS (Cont'd)

		DEFINITION		STATISTICS		RESEARCH	FINANCIAL AID		
		IN LEGISLATION	IN COMMON USE	EXIST	DO NOT EXIST		FREE TRANSPORT FOR HANDICAPPED	FREE TRANSPORT FOR ESCORTS	CONCESSIONS
12	Spain	No	Broad definition	No		- Several papers given at the Symposium at Palma in April, 1977 particularly concerning the removal of structural obstacles; - Current studies in Parliament;			
13	Sweden	No	Person who encounters difficulties in society		No (assessment)	Report by Swedish Commission on the handicapped (1975)	Aid for purchase of own car and improvement of transport facilities;		
14	Switzerland	Yes, for transport (Federal transport office instructions);			Do not exist	Research is carried out but no details are available;	Yes in some cases: - The great majority of handicapped persons confined to wheelchairs receive a free car; - Those unable to drive a car receive an electric wheelchair or up to FS. 420 per month to cover taxi fares;	Free for escorts of handicapped using wheelchairs, or for escorts of blind persons;	Persons drawing a disability pension receive a half-price season tickets at a reduced rate;
15	United Kingdom	No, but broadly defined in the National Assistance Act 1948		Yes, about 3,000,000 (see report by Amelia I. Harris); In excess of 245,000 using wheelchairs;		Book : - Handicapped and impaired in Great Britain; by Amelia I. Harris; - "Survey of the Mobility of the Disabled" by Dr. A. Chamberlain and Mrs. J. Buchanan; Research carried out by the TRRL: - "Travel and the handicapped"; - "Bus design for the elderly and disabled".	For certain journeys (to work, Hospital, training centres, etc.)	For certain journeys by rail, blind persons and companion can travel "two for the price of one." This also applies to accompanied registered disabled persons in wheelchairs;	British Rail provide half price travel for women over 60 and men over 65 under the "senior citizen" rail Card scheme. A Mobility Allowance of £10 per week;



HANDICAPPED PERSONS (Cont'd)

		RAILWAYS		URBAN TRANSPORT			SPECIAL TRANSPORT	
		SPECIAL CARRIAGES	OTHER MEASURES	ACCESS TO TAXIS	ACCESS TO BUSES	UNDERGROUND	DEMAND RESPONSIVE SERVICES	OTHER SERVICES
1	Austria	No	Wheelchairs specially designed to facilitate handicapped persons access to carriages are made available free of charge; reservation of compartments or seats for handicapped persons in most trains; handicapped persons allowed to use baggage lifts; access to station premises and carriages will be improved as much as possible;	Experiments have begun with taxis specially equipped for wheel-chair-bound passengers;	For urban transport services, use of the "Steyr-City-Bus" designed to facilitate easy entry and exit for handicapped persons; Other measures of limited scope concerning vehicles;	Lifts in multi-store stations;	Special taxi service;	Transport provided from home to educational and medical care establishment; special transport for cultural, sports and social events, and organisation of excursions with the help of handicapped persons associations;
2	Belgium		- Improvements to 14 stations for wheelchair access; - free car parking at stations; - free provision of wheelchairs in certain stations;		- Research on vehicles undertaken by manufacturers.		Demand-responsive mini-bus service at 48 hours'notice, twice normal fare; experimental operation in Brussels from May 1978;	- Regular services for transport to work or for medical care;
3	Denmark	High-speed trains planned for 1981 between Copenhagen and Jutland with carriage for handicapped (hydraulic lift - toilets accessible to handicapped in wheelchairs) prototype by 1981 - in service by 1983;	Plans for raising platform levels over a period of 10 to 15 years; wider access doors; non-skid floor coverings; hand rails at a level of 65 and 90 cm; lift controls at a suitable height;		Research on the installation of ramps; lifts for long-distance buses;	Lifts or access ramps	Arrangements by private organisations with the help of public authorities;	

HANDICAPPED PERSONS (Cont'd)

		RAILWAYS		URBAN TRANSPORT			SPECIAL TRANSPORT	
		SPECIAL CARRIAGES	OTHER MEASURES	ACCESS TO TAXIS	ACCESS TO BUSES	UNDERGROUND	DEMAND RESPONSIVE SERVICES	OTHER SERVICES
4	Finland	No special carriages or compartments but modification to doorways and corridors. The Helsinki underground will be accessible;	Plans to give access to wheelchair users;	Most taxis can transport a wheelchair;	No special arrangements, but bus crews are required to help handicapped;			Special transport (education establishments, treatment centres, medical care establishments, work and recreation centres), the State paying half of the cost; special parking facilities are available varying with commune;
5	France	On certain routes (Paris-Brest; Paris-Toulouse and Paris-Nice) a moving staircase facilities access to one carriage in certain trains and one place is reserved for a wheelchair-bound user (first-class travel for second-class fare);	Plans for improving accessibility are now in preparation (raising of platforms, corridors, etc.);	None. Municipal authorities are responsible for taxis;	New vehicles are being designed;		Generally, on the initiative of associations for the handicapped, but usually organised by the public authorities;	Dial-a-bus service (regular timetables, routes adaptable on demand)
6	Federal Republic of Germany	- International standardisation required before special carriages can be built; - wheelchairs incompatible with present carriages except modern carriages in urban transport;	- Introduction of new wheelchair - Improvement as regards platform height: short-term - No, longterm - Yes. Free reservation of seats for handicapped. Special lavatories in main stations.	- Financial aid for taxis with swivel seats	- Measures now being introduced in certain towns; - Lowering of floor heights in buses from 1980;		In certain towns, transport provided between place of residence and school or place of work;	- In certain town up to four free trips a week;
7	Ireland						Where public transport is unavailable or unsuitable, handicapped rehabilitation bodies provide special transport which is subsidised by Health Boards.	

HANDICAPPED PERSONS (Cont'd)

		RAILWAYS		URBAN TRANSPORT			SPECIAL TRANSPORT	
		SPECIAL CARRIAGES	OTHER MEASURES	ACCESS TO TAXIS	ACCESS TO BUSES	UNDERGROUND	DEMAND RESPONSIVE SERVICES	OTHER SERVICES
	Italy	The implementing regulations of the Act of 30th March 1971 require an adequate number of carriages to be specially altered for the transport of handicapped civilian disabled on certain trains.	<ul style="list-style-type: none"> <li>- In 85 stations free wheelchairs are available to handicapped persons;</li> <li>- In all trains up to 3% of seats are reserved for handicapped persons;</li> <li>- Under the implementing regulations of the Act of 30th March 1971 main stations have to be equipped to facilitate access of handicapped to station premises and to carriages;</li> </ul>					
9	Netherlands	- Access is possible to almost all carriages, and platforms are at same level as carriages.		- Specially fitted taxis will be available shortly;	- Experiment to be set up in the near future;		A demand-responsive regional transport system will be introduced shortly; vehicles used will allow for needs of handicapped;	
10	Norway	10 carriages have been ordered for handicapped persons; 2 are in service;	Special devices and ramps in some stations; the platforms will be raised when rebuilding is done;		Research in improved accessibility now in progress;	Lifts and ramps in most stations	Yes	The public authority is responsible for transport of handicapped persons;
11	Portugal				40 buses at Lisbon as an experiment.			New standards for building construction.
12	Spain	No special measures.						

HANDICAPPED PERSONS (Cont'd)

		RAILWAYS		URBAN TRANSPORT			SPECIAL TRANSPORT	
		SPECIAL CARRIAGES	OTHER MEASURES	ACCESS TO TAXIS	ACCESS TO BUSES	UNDERGROUND	DEMAND RESPONSIVE SERVICES	OTHER SERVICES
13	Sweden	No special carriages; research on a carriage for handicapped now in progress;	Facilities are to be improved; new stations will be accessible to handicapped in wheelchairs;		VOLVO has developed a system of direct bus access from a platform;	Lifts in all new stations and in most of the old ones;	Yes (handicapped persons pay the same price as for ordinary transport the difference being borne by the public authority); this transport facility is arranged by the public authority;	
14	Switzerland	-Doors on new carriages have to provide a clearance of at least 80 cm; - Some carriages are equipped with special compartments for wheelchair bound handicapped.	- Lifts making access easier to coaches for wheelchair users in some stations. a) During conversion or improvement of stations, construction of low gradient ramps, escalators or lifts according to size of station; b) During conversion or improvement of stations, installation of platforms 30 cm above track level. - in large stations, wheelchairs available for handicapped persons.	Special private taxi services for wheelchair users in Zurich, Geneva and St-Gall;	Doors of buses have to provide a clearance of at least 80 cm wheelchair access; Floors built as low as possible;		Demand- responsive public transport systems exist in certain towns;	Buses are available at training and rehabilitation centres for handicapped persons;
15	United Kingdom	British Rail's Mark III coaches have wide doors and a 'removable seat' facility to enable wheelchairs to be accommodated;	Lifts and ramps in some stations minimum platform level requirements and 'call for aid' signs		Operators and manufacturers may make step and floor heights as low as possible;	Some facilities (eg. special lifts) available in new underground systems (eg. Tyre and Wear Metro System)	- Some services are provided by local authorities and voluntary organisations.	Free transport to hospital under NHS where disabled persons unfit to use public transport;

HANDICAPPED PERSONS (Cont'd)

		AIR TRANSPORT	USE OF PRIVATE CAR				IMPROVEMENT OF INFRASTRUCTURE FOR WHEELCHAIRS	
			PARKING FACILITIES	SPECIAL MEASURES	DRIVING LICENCE	SIGNS AND SIGNALS	LOWERING OF PAVEMENTS	PUBLIC LAVATORIES
1	Austria	As a general rule few handicapped persons among aircraft passengers; no special regulations for handicapped persons travelling as a group; wheelchairs available at airports;	Application of the recommendation of the Council of Ministers of the ECMT (provisions already in force before this recommendation).	- Refund of conversion costs of severely handicapped persons' cars; - Financial aid for purchase of wheel-chair-bound handicapped persons' invalid carriages; - Financial aid for purchase of motor vehicles for handicapped persons occupational needs.	Obtainable under certain conditions;		- Design specifications of the Austrian Standards Institute (ONORM B 1600) which have been made compulsory for works undertaken by the Central Government;	
2	Belgium	- Must not exceed 10 per cent of aircraft capacity, including escorts; - Improvement of access and fixtures at terminals airports;	Special cards for unlimited parking; measures envisaged include reserved parking sign;	Cost of converting vehicles for use by handicapped persons covered from special fund;	- Minimum age: 18 for vehicles capable of over 5km/h; - No age limit for vehicles driven at walking pace; - Free driving licence for specially adapted vehicles;	Measures envisaged: reserved parking sign;	Measures under consideration in several towns;	
3	Denmark	Special arrangements common to Scandinavian countries. The flight operating instructions cover handicapped persons;	Special plate allowing handicapped to exceed parking time;	Assistance in the form of a grant or loan for car purchase;	Associations lend a specially equipped car for handicapped persons to take their driving test;	Special plates;		New facilities have to be accessible to handicapped persons;
4	Finland	No difficulties for wheelchair users in airports or aircraft;		Frequently, traffic lights with sound devices;		Suitable signs and signals;	Yes, when a new carriage-way is built;	Access by users of wheelchairs facilitated in new buildings;

HANDICAPPED PERSONS (Cont'd)

		AIR TRANSPORT	USE OF PRIVATE CAR				IMPROVEMENT OF INFRASTRUCTURES FOR WHEELCHAIRS	
			PARKING FACILITIES	SPECIAL MEASURES	DRIVING LICENCE	SIGNS AND SIGNALS	LOWERING OF PAVEMENTS	PUBLIC LAVATORIES
5	France	<ul style="list-style-type: none"> <li>- Itineraries indicated by pictorial symbols at air terminals;</li> <li>- Regulations under consideration specifically concerning questions of air transport;</li> </ul>	Local authorities are responsible for parking facilities and have reserved places for handicapped persons. This is not, however, covered by legislation and is more in the nature of persuasive measure.		Driving licences for permanently handicapped persons ("permis E") may be obtained for an indefinite period; medical examinations are free;	Drivers may obtain a "Seriously disabled war casualty" (GIG) or seriously disabled civil casualty (GIC) sticker but these do not confer any legal rights;	No	From 1st March, 1979 all new facilities have to be provided with accessible toilets;
6	Federal Republic of Germany	<ul style="list-style-type: none"> <li>- As a safety measure; only limited number of handicapped allowed in aircraft;</li> <li>- Special aircraft may be chartered for groups;</li> <li>- Special facilities at terminals/airports;</li> </ul>	Yes Special parking meter privilege	Must meet safety requirements;	- Necessary for vehicles capable of over 20km/h;		Yes, under reconstruction or adaptation measures;	
7	Ireland	<ul style="list-style-type: none"> <li>- Special access and other facilities at terminals/airports;</li> </ul>	Parking facilities and free parking;					
8	Netherlands	<ul style="list-style-type: none"> <li>- Special access and other facilities at terminals/airports;</li> <li>- Regional airports do not always provide the same services;</li> </ul>	Many free parking facilities;		<ul style="list-style-type: none"> <li>- Facilities for obtaining licence;</li> <li>- Necessary for wheelchairs with engines of over 50cm<sup>3</sup>;</li> </ul>		In certain shopping centres and public buildings;	
9	Norway	Rules established by the S. A. S Access to terminals and airports generally without stairs;	Right to stay longer where parking time is limited;	Financial aid for handicapped persons able to drive;				New buildings will be accessible;

HANDICAPPED PERSONS (Cont'd)

		AIR TRANSPORT	USE OF PRIVATE CAR				IMPROVEMENT OF INFRASTRUCTURES FOR WHEELCHAIRS	
			PARKING FACILITIES	SPECIAL MEASURES	DRIVING LICENCE	SIGNS AND SIGNALS	LOWERING OF PAVEMENTS	PUBLIC LAVATORIES
10	Portugal		Special parking places	Signs for display on cars		Pictorial symbols indicating priority to be given to handicapped at booking office windows;		
11	Spain	- Improvement of access and fixtures at terminals/air-ports;	Some measures with regard to parking in certain towns;		- Expensive and difficult to obtain;			
12	Sweden	9 out of 19 State-owned and 5 out of 7 municipal airports have easy access for wheelchair users; in a few years time the remaining airports will be modified in the same way;	Parking places for vehicles of handicapped or special permits when parking is forbidden;	Tax exemption for vehicle acquired by handicapped persons;	Special driving licence for handicapped;			
13	Switzerland	In general, many facilities and installations in airport and terminals, particularly at Zurich, for access and comfort of handicapped and escorts; - No problem of access to aircraft for wheelchair-bound handicapped;	The cantonal and municipal authorities, under the control of the Federal authority, are to implement the recommendation adopted by the ECMT Council of Ministers that parking facilities be provided for handicapped;	Wheelchairs may be used on pedestrian crossings and pavements, but only at walking pace.	Subject to medical examination confirming ability to drive;	Special distinguishing sign to be exhibited at front and back of vehicles driven by persons with severe hearing difficulties;		Door openings have to be at least 80 cm wide
14	United Kingdom	Special regulations for groups. No more than 15 travellers on a scheduled flight. Access facilities are available at airports; leaflet for the disabled has been published about Heathrow Airport;	Certain special parking privileges under the "orange badge scheme";	Mobility allowance and related exemption from Vehicle Excise Duty; "Motability" helping disabled drivers and passengers to lease cars;	Not needed for speeds under 6.4 km/h;	Signs indicate special toilet parking places and routes;	Lowering of kerb heights and ramped approaches are provided in many locations;	A large number of public lavatories with special provisions for the disabled are available;

## ROAD TRANSPORT

### RESOLUTION No. 37 ON DRIVER TRAINING

[CM(78)17]

The Council of Ministers of Transport, meeting in Brussels on 31st May and 1st June, 1978.

- Having regard to the report by the Committee of Deputies on driver training,

REFERRING to the reports by OECD Road Research Groups S8, S10 and S13 on the following topics:

- young driver accidents (March 1975);
- driver instruction (March 1976);
- prevention of accidents involving users of two-wheeled vehicles (August 1977) ;

HAVING REGARD to the agreement drawn up by the United Nations Economic Commission for Europe on minimum requirements for the issue and validity of driving permits (1st April, 1975),

#### CONSIDERING

- that theoretical and practical driver instruction should always be an essential element of road safety policy;

- that analysis of road accidents in Member countries shows that young beginner drivers (those aged under 25 who have had their driving licence for less than three years) account for a disproportionate share of such accidents as compared with other drivers (from twice to four times the average rate depending on the country concerned) and that, in the Member countries, this group usually accounts for 85 per cent of all beginner drivers;

- that this high accident rate is due to inexperience combined with youthful inclination to take risks;

- that closer analysis brings to light the kinds of accidents that young beginner drivers are typically involved in, such as running off the road or collisions when overtaking;

#### ALSO CONSIDERING

- that the instruction now given to learner drivers is directed more particularly to preparation for the driving test rather than to theoretical and practical tuition for safe driving in the true sense, and that the present contents of the driving test itself do not suitably provide for road safety;

- that the issue of a driving licence nowadays is wrongly regarded as certifying that a driver has completed his training for safe driving whereas **in fact** he then goes through a high- risk period during which he gradually gains the experience needed to drive safely when faced with the various kinds of traffic hazards;

- that it would also be useful to look into the conditions on which a driver who has been convicted of a serious traffic offence can be re-authorised to take charge of a vehicle;



## IS OF THE OPINION

- that driver instruction and driving tests should be designed to minimise the length of the high-risk period immediately after acquisition of a driving licence;
- that driver instruction should be comprehensive and, to ensure that it is effective, should encompass risk training and how to avoid putting various categories of road-users at risk;

## RECOMMENDS THE MEMBER COUNTRIES OF THE ECMT

### 1. With regard to the instruction of future drivers

a) to declare that safety should be the primary purpose of the instruction given to learner drivers; that in addition to teaching them how to drive and giving them a formal knowledge of the highway code, such instruction should above all be designed to make them think and behave in such a way that they will be able to drive as safely as possible;

b) in consequence, to review the contents of driver instruction, this often being too closely designed simply with an eye to passing the driving test;

c) to include in the theoretical and practical instruction given to learner drivers, the main risks encountered by the various categories of road users, and what they should do, first, to avoid such risks and, secondly, how to overcome them if they arise;

d) to provide practical instruction ensuring that, when the time comes, the driver is capable of driving on busy roads, at night and in poor visibility conditions;

e) to treat driver instruction and the driving test as a "single entity" designed effectively to cater for the road safety considerations listed above;

f) to improve existing methods of driver instruction and, to this end, to promote teaching of basic skills in handling a motor vehicle together with risk training on special circuits off the public highway to encourage wider use of audio visual aids;

g) alongside traditional teaching in successive lessons, to experiment and develop new methods of instruction, notably those involving continuous courses with up-to-date teaching procedures and equipment.

### 2. With regard to road safety education in schools

- to promote road safety education in schools as recommended by the Second ECMT/Council of Europe Joint Conference in 1971;

- in this connection, to begin to make children traffic-minded, even at nursery school age; to teach them road behaviour gradually as pedestrians and as drivers of two-wheeled vehicles; in secondary education establishments, to provide initial motor traffic training with special reference to the use of power-driven two-wheeled vehicles

### 3. With regard to driver training after the acquisition of a licence

- to provide beginner drivers with further training designed to eradicate the worst mistakes in driving behaviour;

- gradually to extend this facility to all drivers so that they may take useful refresher courses periodically;

- to consider whether drivers who have had their licence withdrawn for a serious traffic offence might in particular be compelled to undergo a further training course so that their ability to drive safely may be ascertained before they recover their licence; to consider how further special instruction could be provided to cover the most common types of serious traffic offence, notably driving under the influence of drink or drugs.

4. With regard to driving school instructors and driving test examiners

- to provide careful training in road safety for driving school instructors and examiners;
- to provide refresher courses or seminars for existing instructors and examiners;
- to consider gradual co-ordination of their occupational training at European level;

**MORE GENERALLY, FURTHER RECOMMENDS THE MEMBER COUNTRIES**

- gradually to introduce a comprehensive and coherent system of driver instruction from nursery school to driving licence and even beyond, the main purpose of which would be to ensure that road user behaviour will be closely and lastingly in conformity with road safety requirements under present-day traffic conditions;

INSTRUCTS the Committee of Deputies to keep under review the application of the measures recommended in this Resolution.

## REPORT ON DRIVER TRAINING

[CM(78)17]

1. Through a number of Resolutions, the ECMT Council of Ministers has already exerted a positive influence on the trend of road accidents in Member countries. The Resolutions relate, inter alia, to driving ability and driver behaviour, and also to the action that drivers can take to avert serious consequences in the event of an accident, the improvement of pedestrian safety, etc. The following are concrete examples:

- the ruling that a blood alcohol level of 0.8 per mille impairs driving ability and that driving in this condition is a punishable offence;
- a Recommendation for specific speed limits on rural roads and motorways;
- a Recommendation for compulsory wearing of seat belts;
- Recommendations on a package of measures for improving pedestrian safety and drivers of two-wheeled vehicles.

2. The ECMT Council of Ministers analyses road accident trends at specific intervals in order to identify the causes of accidents in the light of which wider and more effective traffic policy measures can be taken for accident prevention or for mitigating the effects of accidents. These efforts are backed up by careful scientific analysis of the contributing factors which have a bearing on the causation of accidents and, to this end the ECMT, in recent years, has started a useful co-operation exercise on "road safety", especially with the OECD Road Research Department. Scientific reports on these OECD activities are evaluated by the ECMT with a view to converting their findings into appropriate traffic policy measures.

3. Driver training, especially for young beginners, has a decisive impact on road safety. In the last few years, basically new theoretical and practical progress has been made in this field, especially in countries with a high level of car ownership, but also in the framework of international co-operation. Three reports on these subjects have been produced by the OECD alone, under the Road Research Programme:

Young driver accidents	(Research Group S8)
Driver instruction	(Research Group S10)
Accidents involving users of two-wheeled vehicles	(Research Group S13)

#### 4. OECD Road Research Group S8

4.1 The OECD Road Research Group S8 gives the following findings in its report on young driver accidents:

- young drivers between the ages of 18 and 25 have a disproportionately large number of road accidents with three to four times the average accident rate;
- analyses of accidents involving young traffic offenders indicate a high percentage of speeding violations;

- young drivers commit more traffic offences than the other driver groups and a greater proportion of them drive unroadworthy vehicles.

Other factors contributing to the higher proportion of young drivers involved in road accidents were also listed:

- inadequate driving experience;
- the fact that young drivers are more accident-prone at night and on weekend evenings;
- the behaviour of young drivers is at least partly due to factors bound up with youth psychology, such as egocentricity, lack of self-discipline, and the inclination to "let off steam" and to take risks;
- social maladjustment, for instance reaction against stern discipline at home and at school;
- also, in many cases, the use of mopeds and motorcycles, which in any case present an objectively higher risk than four-wheeled vehicles.

4.2 The report proposes a series of measures to overcome these deficiencies, such as driver training, further training opportunities, driver licensing, application of speed limits, and also further research.

4.2.1 Group S8 considers that driver training must be thoroughly reappraised, and that this reappraisal should include audiovisual methods, the value of training grounds and safety training.

4.2.2 The group also feels that active alternatives to existing penalties could be useful, such as requiring the offender to take a driver retraining course which could be designed to match the rules he has infringed.

4.2.3 For driver licensing, two types of driving licences are regarded as a possible suitable means of improving the performance of young drivers:

- a provisional licence with special conditions and/or restrictions, and
- a probationary licence - the granting of the full driving licence would be dependent on the behaviour of the applicant during the probationary period.

Both types of driving licence already exist in some countries.

4.2.4 Speed limits for beginner drivers are also felt to be a suitable means of reducing accidents, particularly during the probationary period.

4.2.5 The Group specifically states that:

- driver training as presently constituted has not been effective.

The Group therefore considers, inter alia,

- that scientific research in this area is necessary together with;
- research on the content and structure of driving tests, and on;
- the training of driving instructors;
- the effectiveness of the various types of driving licence; and
- driver behaviour for each age group, the aim being to ascertain its structural characteristics.

5. OECD Road Research Group S10 - Driver Instruction has systematically continued the work done by Group S8 on a broader basis. The starting point was international recognition of the following findings:

- beginner drivers are over-represented in road accidents;

- in many countries the objectives of driver instruction are aimed at the driving test rather than road safety and;
- it is often mistakenly assumed that the test is the ultimate stage in the development of a safe driver.

5.1 As there are sometimes considerable practical and methodological differences in driver instruction from one country to another (oral or written tests, audiovisual techniques for the theoretical examination, different types of driving licence) the Research Group had to confine itself to presenting a synopsis of existing types and methods of instruction, and to identifying the most useful methods and criteria for testing the efficiency of these models. In consequence, their findings merely constitute an outline of the problem, which would need to be followed by a second stage where practical conclusions for driving instructors, and possibly examiners would be identified and published in a handbook. This second stage has still to be tackled.

5.2 The main findings in the report of Research Group S10 may be summarised as follows:

- lack of driving experience must above all be regarded as an additional hazard; the driver learning process needs to be suitably accelerated;
- to be successful, driver instruction must be based on systematic and structural analysis of the driving function and its purpose; in order to do this it is necessary to work out a systematically and logically graduated learning process;
- the main components of an improved driver instruction system are as follows:
  - teaching methods;
  - teaching aids such as slides and films;
  - teaching principles;
  - testing methods;
  - evaluation of given test exercises.
- education and testing requirements must be adjusted to each other and integrated;
- risk training (recognising, avoiding and possibly overcoming road hazards) should be introduced as a special feature in driver training programmes;
- teaching objectives and principles play an important role in a new instruction programme;
- instructors should become familiar with modern educational principles (instructor training by means of specific seminars, and refresher courses focussed on road safety);
- a learner driver performance should be measured against a specified level of requirements;
- test requirements and methods should be standardized as far as possible and raised to a specified level ;
- even optimum improvement in driver education and instructor training (i. e. more stringent requirements for training instructors) promises only limited success; road safety education must begin at the nursery school stage, and continue at school and vocational training establishments, and drivers must have opportunities for voluntary further training or, possibly, be made to undergo further training by the courts or by administrative authorities as an effective alternative to other penalties.

6. The special situation of two-wheelers - whether power-driven or not - and its attendant safety problems have become plainly apparent in recent years. Cyclists, moped riders and motor cyclists are the main road users in this group.

OECD Road Research Group S13 reached the following conclusions, among others, after studying "accidents to users of two-wheeled vehicles":

### 6.1 Considering that,

- riding a two-wheeled vehicle is fundamentally different from driving a car;
- age and experience play a comparatively more important role for riders of two-wheelers than for car drivers;
- special training and education programmes are necessary as riders are younger and require experience.

Group S13 recommends the following measures:

### 6.2 Instruction and licensing

- Cyclists must be specially informed and trained but do not require licences;
- motorcyclists and moped riders must receive better training; in view of their youth and inexperience and because of the difficult nature of the duties of a driver, they require licences;
- instruction and training programmes should be developed for cyclists, moped users and motorcyclists;
- tests should be carried out to see whether a graded instruction and licensing system for motorcyclists can be introduced (e. g. Switzerland). Points to be considered: licences to ride powerful motorcycles to be issued only after a given period of time, creation of more categories (not just moped and motorcycle).

### 6.3 Safety campaigns and enforcement

- Education campaigns should be designed to make other road users, especially car drivers, aware of the dangers of riding a two-wheeler;
- features of moped and motorcycle advertisements that are inconsistent with road safety should be avoided;
- in the course of police supervision special stress should be placed on checking alcohol intake by two-wheeler riders.

### 6.4 Design and equipment of two-wheeled vehicles

- numerous technical improvements are possible and necessary, such as better lighting, direction indicators, rear-view mirrors, improved tyres, better braking systems, user comfort, windscreens;
- improvement of visibility and recognition of two-wheeler users (e. g. use of headlights during daytime and suitable clothing for riders such as yellow or red leather suits).

### 6.5 The following are also recommended:

- compulsory periodical inspection of mopeds and motorcycles;
- technical standards for type approval;
- improving rider protection by making the wearing of crash helmets compulsory, wherever possible;
- technical standards for helmets and eye shields.

### 6.6 Town planning and traffic engineering

Here the recommendations include:

- improving safety by segregating traffic and having separate lanes for two-wheelers;
- making left-hand turns easier and safer for two-wheelers by special arrangements at intersections;
- the urban planning function should be extended, as a basic principle, to take two-wheelers into account, in particular by developments to the existing road network.

6.7 With regard to scientific research the following recommendations are made:

- identification of the special risks of the various two-wheeler groups on the basis of statistical data;
- development of a graded licensing system for these groups.

7. After consideration and evaluation of the foregoing points contained in the OECD Road Research reports that are referred to, the Resolution is submitted to Ministers of Transport for approval.

## RESOLUTION N° 38 CONCERNING SEAT BELTS

[CM(78)18]

THE COUNCIL OF THE MINISTERS OF TRANSPORT, meeting at Brussels on 31st May and 1st June, 1978,

HAVING REGARD to the report of the Committee of Deputies on the effects of the compulsory wearing of seat belts,

REFERRING to Resolution No 28 of 14th June, 1973 on the problem of seat belts,

CONSIDERING

- that in practically all the ECMT countries the effectiveness of seat belts is no longer open to question;
- that 14 Member countries have taken measures for compulsory wearing of seat belts in accordance with Resolution No. 28;
- that these decisions have significantly contributed to the decrease in road deaths and injuries recorded in most Member countries in recent years;
- that compulsory wearing of seat belts is one of the most cost-effective measures that can be taken for road safety;
- that in no ECMT Member country does the Constitution seem to preclude provision for compulsory wearing of seat belts;
- that three-point inertia reel belts (the type which is judged most convenient at the present time) are now very commonly used in many Member countries;
- that various studies conducted in several Member countries have shown that when car occupants wear their seat belts correctly, the risk of their being killed if involved in an accident is reduced by at least half and the severity of their injuries is also very distinctly reduced;
- that foregoing studies have also shown that the risk of death or injury rises appreciably when the impact takes place at high speeds;
- that there can be no doubt that when impacts take place at very high speeds, even the wearing of seat belts fails to provide effective protection for car occupants and, in consequence, that:
  - very high speeds must be avoided;
  - compulsory wearing of seat belts and general speed limits work complementarily for the improvement of road safety;
- that objections to the wearing of seat belts on medical grounds are exceptional;
- that measures for compulsory wearing of seat belts have won widespread compliance only when there was also adequate enforcement by the police and limited, but quick, penalties for offenders;
- that less binding measures limited to the recommendation that seat belts should be worn do not usually achieve more than 20-30 per cent compliance despite intensive information and publicity campaigns;



that this rate generally drops fairly steeply when the campaigns are over; that some incentive devices (e. g. "bleeps" and warning lights inside vehicles) can be useful but should be regarded only as adjuncts to compulsion; that standard fitting of emergency devices for immediate release when belt fastenings are damaged in the course of an accident could make motorists feel safer and so dispel remaining reluctance on this point;

- that in some countries, the question whether car occupants were or were not wearing seat belts is taken into account by insurance companies and the courts when awarding damages for car accidents;

IS OF THE OPINION THAT

- the target of every country's policy in this field should be that, within a reasonable time span, all motor vehicle occupants - except for public transport vehicles and relatively limited special cases - should be protected by seat belts;

RECOMMENDS the Member countries of the ECMT:

1. To continue to introduce regulations for the fitting of seat belts in new vehicles, preferably three-point belts where three-point anchorage is technically feasible and, in particular, gradually to extend these provisions:
  - to the back seats of private cars(\*),
  - to lightweight commercial vehicles,
  - at a later stage, to other categories of commercial vehicles;
2. To encourage the fitting of three-point inertia reel belts, these being more convenient and, consequently, more easily accepted;
3. To proceed at national level on the principle of compulsory wearing of belts(\*) as this secures much wider compliance than mere recommendations to this effect even if they are supported by intensive information and publicity campaigns.
4. To consider that compulsory wearing of seat belts must apply to car occupants both inside and outside built-up areas;
5. To ensure that wearing of belts is effectively enforced by the police and, if possible, provide for limited but quick penalties for offenders;
6. To continue their information and publicity campaigns for the wearing of seat belts even if this has been made compulsory; to renew these campaigns, notably when compliance falls significantly; in the course of road safety education at school and in driving schools, to draw attention of future car users to the importance of wearing seat belts;
7. To make the wearing of seat belts compulsory, for anyone whose age, body measurements, and physical condition enable him to do so; to make provision to the effect that children who cannot be fastened with seat belts shall be carried in rear seats unless they can be provided with special front-seat safety devices to suit their case;
8. To encourage the fitting, in new vehicles, of "bleeps" or warning lights to remind car occupants when they fail to fasten their belts, and - when advances in technical design make this possible - the fitting of approved emergency devices for quick release when the standard belt coupling is damaged in the course of an accident;

\* The Italian Delegation has entered a reservation on this point.

9. To secure the adoption as soon as possible at national level of the decisions taken on uniformity of technical standards by the international organisations concerned, more especially those relating to belt couplings; to continue the studies and research for improving the effectiveness and reliability of existing belts and of any device whereby belts can be better adapted to their users' body measurements, whilst also working gradually for international uniformity of belt specifications;

INSTRUCTS the Committee of Deputies to keep the application of the measures recommended in this resolution under review and to study their effects.

## REPORT ON THE EFFECTS OF SEAT BELTS

[CM(78)18]

### INTRODUCTION

In December 1972 the Council of Ministers of ECMT approved a new programme of work concerning road safety [CM(72)19]. This included "the compulsory wearing of seat belts".

A Resolution with six recommendations urging Member countries to make the use of seat belts compulsory was submitted to the Council of Ministers at its session on 14th June, 1973 [CM(73)7].

This report tries to give some evaluation of the actions taken by Member countries as a consequence of these recommendations.

At the 57th Session of the Road Safety Committee it was decided to prepare a report on the present situation and trends with regard to the legislation, wearing rate, trends in research, insurance aspects, etc. The Netherlands Delegation was asked to prepare a draft questionnaire for this purpose.

At the 58th Session of the Committee various amendments and suggestions were submitted with regard to the draft questionnaire [CS/SR(77)2]. The Committee decided to revise the questionnaire accordingly and the revised version was sent to Member and Associate Member countries in May 1977.

Replies were received from 20 countries, viz. Luxembourg, Belgium, Austria, Germany, Denmark, Australia, Portugal, Switzerland, Spain, Yugoslavia, Finland, Greece, Norway, Ireland, Italy, Sweden, Japan, France, the Netherlands and the United Kingdom.

Some countries have given very detailed studies and reports. Although the contents of these reports are highly relevant, it is not possible to provide data from these reports in this document. Therefore a reading list is added which enables everybody to see which studies and reports are available.

### Part A

#### RESULTS OF QUESTIONNAIRE ON SEAT BELTS

1. In 4 of the 20 countries, which replied, the wearing of seat belts is not compulsory\* (Yugoslavia, Ireland, Italy and Japan). In Greece the wearing will become compulsory on 16th December, 1979. It is a fact, however, that in all countries concerned the passenger cars have to be equipped with anchorage points.

As to the carrying of children in motor-cars there do not exist special rules in Portugal, Yugoslavia, Finland, Spain, Norway, Ireland, Italy and Japan. In the other countries the following rules apply:

"prohibition to carry children below a certain age on a front seat (when a rear seat is present)":

\* Since September 1977, the Swiss Federal Court has decided that the legal grounds on which compulsory wearing of seat belts had been introduced were unsound. The Swiss authorities are taking steps to remedy this state of affairs.

Luxembourg	10 years
Belgium	12 years
Germany	12 years
Australia (some States)	
Switzerland	12 years
France	12 years
Yugoslavia	10 years
Austria	12 years
Netherlands	12 years
Greece	10 years

In the three last-mentioned countries this prohibition applies as far as no special arrangements have been made for the front seat.

In Sweden, Denmark, Norway and Finland the compulsory wearing of seat belts only applies to persons of 15 years and older, in Australia (such depending on the State) to children of 8 years and older persons.

2. As already said all passenger cars have to be equipped with anchorage points, but in various countries this obligation also applies to other motor-cars up to special weight. In this type of motor-car the wearing of seat belts is also obligatory, in most cases for the front seats. In Denmark, Finland, Norway and Sweden wearing is compulsory for those front seats where a seat belt is attached.

3. In most countries all types of seat belts are admitted. From the inquiry it appears that in general the 3-point belt is preferred. In some countries this type is prescribed with the exclusion of other types, except for cases in which no 3-point belt can be fitted, e. g. if a seat is not adjacent to a door.

Seat belts are subject to certain quality standards; in only a few countries do rules exist as to how belts should be fitted in vehicles.

4. In only a very few countries rules have been laid down as to the uniformity of the locking of the seat belt, but conformity with certain requirements is generally required.

5. In most countries the obligation to wear seat belts does not apply to drivers while reversing their motor vehicles, taxi-cabs, persons shorter than 1.50 m., drivers delivering and picking up goods at short intermediate distances.

In some countries an exception is made for vehicles of emergency services, such as police cars and fire engines (Austria and Finland).

In a single case driving instructors are exempted from the obligation (Austria).

Almost all countries concerned have issued exemptions on medical grounds, however, in general the grounds themselves are not mentioned.

In only a few countries pregnant women are exempted from the obligation, an exemption on physical grounds has not been mentioned at all.

A certain procedure for the application of an exemption from the compulsory wearing has not been mentioned. In most cases a medical certificate will do.

In Australia (such depending on the State) the obligatory wearing does not apply to persons over 69.

In the Netherlands arrangements are being made to introduce an exemption clause into the seat belt legislation. As far as can be expected the largest number of exemptions will be based on physical grounds, e. g. a concentration camp syndrome, next to the physically heavily handicapped persons. In the Netherlands so far approximately 800 applications have been received.

6. In most countries the introduction of the compulsory wearing was preceded by a publicity campaign through the mass media which in most cases lasted approximately 6 months.

In Germany and Sweden, however, the publicity campaigns took some years.

Amounts spent on publicity:

Austria .....	3 million Schillings
Germany .....	13.3 million DM
Norway .....	6 million Crowns
Netherlands .....	1.5 million Guilders
France .....	3.5 million Francs

7. In most countries penalties are imposed for not wearing seat belts. In Austria this infringement is treated as a civil suit, in Finland prosecution will follow if the offender refuses to wear the seat belt after being warned by a police officer. In Germany, Norway and, recently, Switzerland the offender is not prosecuted.

If we compare the various countries in which the wearing of seat belts is compulsory, it appears that in about half of the countries a transition period is taken into account, in which no punishments were inflicted. As far as indicated the fines range from Frs. 20 to 160. In Australia (such depending on the State) one "demerit" point is given. About the number of warrants made until now nothing is known. In Sweden in 1975 approximately 18,000 persons have been fined because of not wearing the seat belt. In France this number amounted to 108,036 in 1975 and to 136,657 in 1976.

8. In most countries scientific research was and/or is being made into the effect of the wearing of the seat belt. In general it may be deducted from this research that as a consequence of the wearing of seat belts the number of road victims killed has decreased.

The percentage of this decrease cannot exactly be indicated. This is also caused by the fact that the belt is not always worn in a proper way (through which according to Swedish investigations only 30 - 50 per cent of the effect is obtained).

In Belgium an investigation was made into the attitude. Inter alia drivers have been divided into social class and age. In general the Belgians are positive on the wearing of seat belts. In most cases the lack of freedom of movement is mentioned as a reason for a negative attitude.

In Switzerland, Australia, France and the Netherlands extensive researches have been carried out. It would go too far to publish all reports in this summary.

According to a Swiss report, frontal impacts account for over 50 per cent of all collisions. It was also found that approximately 40 per cent of the drivers killed in 1976 were wearing seat belts. In 1977, the "wearing rate" was approximately 77 per cent.

A study of accident trends in Australia shows that over a five-year period, the number of persons injured had fallen by 20 per cent and the number of killed by 27 per cent.

To judge the effects of wearing seat belts in France, comparative fatality rates for wearers and non-wearers of seat belts have been calculated for several years on the basis of data collected by the various government departments concerned. The coefficients thus obtained (see below) show that car occupants involved in accidents reduce the risk of being killed by more than half if they are wearing seat belts.

	1974	1975	1976	1977 (first 10 months)
Fatality rate for belted occupants .....	1.92 %	1.97 %	2.3 %	2.28 %
Fatality rate for non-belted occupants ..	4.24 %	5.30 %	6.08 %	4.92 %
Fatality rate for non-belted occupants as compared with that for belted occupants.	2.21 %	2.69 %	2.63 %	2.15 %

In the Federal Republic of Germany, the conclusion drawn from an insurance group's survey of 15,000 motor accidents involving casualties in 1974 was that, assuming a "wearing rate" of 90 per cent and assuming that all vehicles were fitted with front-seat belts, the casualty figures as compared with those for 1976, would be reduced (on a cautious estimate) by the following amounts:

- 40,500 for car occupants slightly injured;
- 17,800 for car occupants seriously injured;
- 1,700 for car occupants killed.

In the Netherlands, an extensive analysis of 22,000 accidents has shown, among other things, that the use of lap belts and three-point belts is equally effective. An explanation of this finding in the light of experience is that lap belts are worn more correctly and more tightly than three-point belts (and correct wearing of seat belts is of vital importance).

9. Number of occupants of motor-car killed

COUNTRY	1970	1971	1972	1973	1974	1975	1976	DATE OF INTRO- DUCTION OF WEARING OBLIGATION OF BELT
Belgium	768	926	986	979	893	795	828	1. 6. 75
Austria	873	1,203	1,173	1,177	946	960	882	15. 7. 76
Germany	9,457	9,108	9,457	7,820	6,616	7,050	6,850	1. 1. 76
Australia (only drivers)	1,460	1,380	1,234	1,317	1,299	1,380	-	in various states 1970-1972
Switzerland	669	668	672	561	515	508	443	1. 1. 76
Spain	2,246	2,405	2,498	2,769	2,454	2,574	-	23. 4. 75
Finland	410	463	441	449	328	319	-	1. 7. 75
Norway	248	221	218	225	220	229	220	1. 9. 75
Ireland	178	190	203	207	190	238	-	-
Italy	3,863	4,053	4,579	4,558	3,681	4,006	3,810	-
Sweden	668	669	645	649	619	620	-	1. 1. 75
Japan	5,612	5,538	5,657	5,075	4,010	4,013	3,707	-
Netherlands	1,322	1,290	1,350	1,358	986	968	1,036	1. 6. 75
France*			8,627	7,916	6,373	6,431		1. 7. 73
Denmark	444	437	439	460	268	324	398	1. 1. 76
United States	34,820	34,230	35,220	33,670	26,750	27,220	27,670	-
United Kingdom	2,877	3,000	3,095	3,048	2,704	2,444	2,520	-

\* Only outside built-up areas. And since 1.1.1975 inside built-up areas at night.

Comments on the statistical table shown as paragraph 9

These figures must not be construed as the findings of an inquiry specially directed to the effects of the wearing of seat belts. They are based on general road accident statistics and consequently the effects of all the factors that have a bearing on the road accident situation of a country from year to year.

It is however reasonable to use them when looking into the question of seat-belt effectiveness. In this connection, it must be borne in mind that the number of accidents rises as the car population and traffic density increase. Furthermore, fewer deaths for car occupants are recorded when traffic density decreases, when driving speeds are lower (e.g. during the oil crisis in 1973 - 1974) and when a high proportion of drivers wore seat belts (1975 - 1976). The comparative figures for 1972 and 1975-1976 give some idea of the positive effect of mandatory wearing of seat belts in various countries. It must also be pointed out that this indication applies only to persons killed among car occupants and so does not allow for any change in the number of persons injured.

10. Wearing percentages: in/outside built-up areas

COUNTRY	1970	1971	1972	1973	1974	1975	1976	1977
Germany					Jan. 9/25 Nov. 13/29	22/34	32/47	
Denmark		13/36	10/30	19/30	16/32	13/34	83/89	
Finland						begin- ning: 8/31 (10/28) end: 54/69 (50/66)	38/66 (36/62)	
Norway				13/35		29/56	27/59	
Netherlands		10/24	13/25	14/32	13/28	54/70	53/73	50/68
France <sup>o</sup>				26/56 <sup>x</sup>	60	75	79	72

( ) = passengers.

x = before and after legislation.

<sup>o</sup> = only outside built-up areas.

For a better understanding of the figures about wearing percentages it should be stressed that the absolute number of people wearing seat belts is growing each year. Many new cars come into use each year, in which the use of seat belts is compulsory, and each year a lot of people obtain a driving licence.

It can be concluded therefore that although the wearing percentage is decreasing, in some countries the absolute number of people wearing seat belts is increasing.

11. Negative effects of the belts have not been ascertained or in such a slight measure that they can be neglected. A Swiss accident analysis-study showed a few technical defects of the belts. This study suggests that at most 0.65 per cent of the injuries were due to seat belt bearing and were not to be expected (to that degree) if no seat belts had been worn. With continuing improvements in the quality of seat belts and more suitably located anchorage points, this percentage should undoubtedly decline.

12. In France, Luxembourg, Germany, Sweden and Yugoslavia scientific research is undertaken into the effects of the seat belts at this stage. The fields covered by these researches are not mentioned.

13. In Austria, Belgium, France, Germany and Switzerland the wearing of seat belts may influence to a greater or lesser degree the damages paid by the insurance companies.

In France, when the courts consider that the effects of the accident would have been less severe for the victim, if a seat belt was worn, they will take into account this fact when fixing the damages. In Germany, this point has also been dealt with by the courts, but there is not yet any ruling from the Supreme Court.



Annex I (Part A)

READING LIST OF AVAILABLE REPORTS, DOCUMENTS IN VARIOUS COUNTRIES  
MENTIONED IN ANSWERS TO QUESTIONNAIRE

- Belgium: Fonds d'études pour la sécurité routière : "Les ceintures de sécurité".
- Netherlands: Lap belts and 3-point belts. A comparison of effectiveness, SWOV 1975, 1975 Voorburg, Netherlands. Practical and medical aspects of the use of car seat belts. Tentative views from recent research by the Institute for Road Safety Research SWOV, Voorburg, Netherlands.
- Switzerland: Interdisziplinäre Arbeitsgruppe für Unfallmechanik, Universität und ETH Zürich: "Unfalluntersuchung Sicherheitsgurten"\*.
- Australia: Diverse publicaties van het Ministerie van Transport, zoals:  
"Seat belt fitting and wearing in Australia".  
"Seat belt crash performance in Australia".  
"Australian approach to motor vehicle safety standards".
- Japan: Seat belt assemblies:  
"Performance requirements for seat belt assemblies".
- United States: "Motivating factors in use of restraint systems". Report DOT-HS-800-585, Sept. 71.  
"Broadcast media in Highway Safety: Systematic analysis of the effects of mass media communication on Highway Safety". Report DOT-HS-800-629, Dec. 71.  
"Evaluation of the effects of a seat belt education program on elementary school children in Loudoun County, Virginia". Report DOT-HS-800-766, Nov. 1972.  
"Sources and remedies for restraint system discomfort and inconvenience". Report DOT-HS-801-277, Nov. 1974.  
"Comfort and convenience analysis of advanced restraining systems". Report DOT-HS-801-712, August 1975.  
"Effectiveness of safety belt warning and interlock systems". Report DOT-HS-800-859, April 1973.  
"Seat belt use inducing system effectiveness". Report DOT-HS-801-503, April 1975.

\* French translation also available.

- United States: Safety belt interlock system usage survey". Report DOT-HS-801-594, May 1957.
- "A statistical analysis of seat belt effectiveness in 1973-75 model cars involved in towaway crashes". Report DOT-HS-802-035, Sept. 1976.
- "Safety belt interlock system usage survey". Report DOT-HS-801-957, August 1976.
- "Effectiveness of various safety belt warning systems". Report DOT-HS-801-953, July 1976.
- "Passive VS. Active Safety Belt Systems in Volkswagen rabbits: A comparison of owner's habits and attitudes". Report DOT-HS-801-953, August 1976.
- "Analysis of comfort and convenience factors in improved restraint systems". DOT-NHTSA-Safety Research Laboratory Technical Report, Nov. 1976.
- France: ONSER Report (October 1974): Conséquences respectives sur la sécurité routière des mesures de port obligatoire de la ceinture et des limitations des vitesses prises en 1973.
- Report by the physiology and bio-mechanics laboratory of the PEUGEOT-RENAULT Association in consultation with the Orthopædic Research Institute, GARCHES, and POISSY Hospital; report by Messrs. TARRIERE, HARTEMANN, GOT, PATEL at the STAPP Conference in 1977.
- Sweden: VOLVO Report (May 1977) by Mr. Hans NORIN on the statistical analysis of effects of accidents for belted and non-belted car occupants.

## Part B

### OTHER RELEVANT INFORMATION TO SOME ESSENTIAL ASPECTS OF PART A

#### Effectiveness of seat belts

The benefits of safety belts are based on two qualities. Seat belts prevent the so-called second collision of the occupants against interior parts of the car by restraining the human body at appropriate parts (thoracic cage and pelvis).

Secondly safety belts prevent ejection of occupants. It has been proved that the chance of fatal injury for ejected occupants is 4 to 5 times higher than those remaining in their cars. (Tourin 1960, Anderson 1974). Though ejection through opening doors happened less frequently from the time safety-door-locks became common features, ejection through front windows, side and rear windows and opening roofs have to be considered as well.

The proper use of safety belts is very important to reach the greatest benefits in collisions.

The proper positioning of the different straps over the appropriate parts of the body is important to prevent unnecessary injuries. If too much slack is available in the belt system, forces on the human body will increase considerably (Walz 1972).

Experimental crash tests carried out in laboratories have contributed enormously to improving safety belt design and better understanding of what happens during the very short moment (0.1 sec) of the actual collision.

Lately attention is focussed on the field of human tolerance data, which knowledge may be applied to improve crash safety devices like safety belts and minimise the chance of injury.

Data from real world accidents are needed to verify results from crash tests.

Results from such combined studies were published among others by ONSER and Volvo/Wayne State University. (ONSER 1975; Patrick and Anderson 1974).

Data on the real effectiveness of safety belts in collisions have to be evaluated from results of real world accident studies. After the proper analysing of all relevant data of such accident studies, conclusions may be drawn as to the effectiveness of safety belts by comparing groups of seat belt users with non-users.

One of the first important studies is the well known study from Volvo (Bohlin 1968), stating considerable effectiveness figures for three-point belts. Results of many other studies confirmed these figures (Campbell e. a. 1974; Mela 1974; HUK 1975; SWOV 1974; Reinfurt e. a. 1976). The effectiveness of safety belts in reducing the chance of fatal injury for front seat occupants is calculated in most studies to be at least 50 per cent, especially for frontal collisions and roll-overs. The reduction of less serious injuries was calculated to be somewhat less than for fatal injuries, but is still considerable.

Accident studies indicate that unrestrained rear seat passengers may cause injury to front seat occupants (Huelke e. a. 1974). Therefore the use of seat belts for rear seat passengers will have positive effects on the injury chances for both rear seat passengers and front seat occupants.

In Switzerland, the Senior Consultant of the Clinique Ophtalmologique Universitaire de l'Hôpital de l'Ile, Berne, has provided the following most interesting figures, also pointing out that most of the persons injured were not wearing seat belts at the time of the accident and that those for 1976, in particular, were certainly not wearing belts:

	1974 (12 months)	1975 (12 months)	1976 (12 months)	1977 (9 months)
Eye, eyelid and face injuries	12	12	5	15
Eyelid and face injuries but not eye injuries .....	6	3	1	5
Total .....	18	15	6	20

These figures must be considered in the light of three important developments:

- on 1st January, 1976, wearing of seat belts was made compulsory;
- during the year 1977, monitoring by the police became looser and, on 2nd September, the Swiss Federal Court annulled the obligation to wear seat belts.

With regard to possible disadvantages of the use of safety belts during collisions it became clear that statistically spoken there is no real problem (Walz e. a. 1976). Injuries do not occur due to safety belts but in spite of safety belts.

The fact that many countries made the use of safety belts compulsory was based of course on the statistically proven effectiveness of belts to reduce considerably the chances of fatal and serious injury. Cost-benefit studies pointed out that the compulsory use of already available 3-point safety belts was by far the most cost-effective measure to be taken on short account (Sharp 1973; ECE 1973).

Apart from crash safety devices like belts, other factors influence the outcome of collisions as well.

It is assumed that speed limits may have positive effects on traffic safety by decreasing both the incidents of accidents and the severity of accidents.

Physically speaking the amount of energy stored in a moving car is proportional to the square of the (driving) speed. In case of a collision most of this energy has to be destroyed during a very short moment. Therefore collision forces and decelerations are very much dependent on the collision speed, or rather the so-called  $V$ , the loss of speed during the collision phase. Lower  $V$ 's mean much lower chances of fatality and injury for the occupants (Patrick and Bohlin, 1974).

Separate and additional effects of the use of safety belts and the outcome of speed limits in France have been reported to be considerable (ONSER 1974), confirming the above-mentioned effect. Here we come to the field of national accident statistics, proving effectiveness of safety belt laws and other traffic safety measures.

From several parts of Australia considerable drops in traffic deaths and injured were reported after the use of safety belts had become compulsory (Henderson e. a. 1973).

Other countries reported comparable results, depending on the rise in actual wearing rates of safety belts (SWOV 1977).

### The Use of Seat Belts

In the Netherlands, for instance, according to the foregoing source, the increase of the use of seat belts by the occupants of passenger cars in the period 1971-1973 came to a standstill in 1974. This appears from the results of inquiries which were held in those years.

Consequently a smaller number of dead among the occupants of passenger cars in 1974 cannot be accounted for completely or partly by an increased use of seat belts. On the contrary the use of the

seat belt grew considerably in 1975 because of the legal measure which came into effect on 1st June, 1975. There are strong indications that the said increase already began before 1st June. The somewhat lower percentages which were perceived in October 1975 may indicate that after June 1975 a slight decline in the use of seat belts took place. Because of the changes before and after June it is not possible to make an accurate calculation of the average wearing percentage for 1975. It seems a reasonable assumption that the average wearing percentage for 1975 amounted to 40-50 per cent. Compared with 1974 this is a considerable increase which undoubtedly has had a strong influence on the number of dead. The importance of this influence can be approximately calculated from the increase of the wearing percentages and the effectiveness of the seat belt. Since the wearing percentage outside built-up areas is always higher than in built-up areas, it is usual to make these calculations for both situations apart. However, for 1975 this was not possible since the division of 1,005 dead in passenger cars (into outside and in built up areas) has not yet become available. Therefore a simple calculation was carried out, using the average wearing percentages. If we start from the following approaches:

- average wearing percentage in 1974 approximately 15 per cent;
- increase of average wearing percentage in 1975 compared with 1974 approximately 30 per cent;
- percentage of all passengers killed on front seats approximately 80 per cent;
- decrease of the risk of being killed in an accident by wearing seat belts: average of approximately 60 per cent (Edelman and Van Kampen, 1973).

The decrease of the number of dead among occupants of passenger cars in 1975 compared with 1974 (other things being equal) may be estimated at:

$$\frac{0.3 \times 0.8 \times 0.6}{1 - (0.15 \times 0.8 \times 0.6)} = 0.16 \text{ or } 16 \%$$

Without an increase of the seat belt use the number of dead in passenger cars should amount to 1,005:  $(1 - 0.16) = 1,196$  in 1975, which is almost 200 more than the actual number.

#### Technical developments, problems, and possibilities

Consideration: The equipping of new vehicles with audible or luminous warning systems for reminding occupants who have not put on the seat belts - of the need to do so.

A survey, conducted in the United States from August 1976 to April 1977 indicated that the light and buzzer systems on the newer model cars have had little impact on the level of safety belt usage. Starter interlocks and the continuous light-buzzer reminders in 1974 and some 1975 models apparently resulted in increased use of the lap/shoulder combination systems, the study indicated (25.2 per cent versus 18.5 per cent). These findings show in fact that these warning systems as such do not increase the wearing of seat belts to a level, comparable with the legal obligation to wear seat belts. Therefore these systems can only be seen as a complementary method to stimulate the seat belt wearing, as an extra to the legal obligation.

#### Standards towards uniformity

In 1970 in Geneva all standards were set up which seat belts have to meet. Further in July 1977 in Brussels standards were laid down for identification of the belt lock. There has to be a protruding red button which has to be pushed in order to disconnect the seat belt. These standards will become effective 18 months after 1st July, 1977.

Besides both in Brussels and Geneva a further improvement/adaptation of the rules is being constantly worked at, also in view of a further uniformity.

### Psychological problems

The use of seat belts causes for a few people an (unjustified) fear that the belt will obstruct them in some situations to leave their car quickly, e. g. in case of fire or submerging.

These objections are more psychological than rational in the first place. The risk that accidents occur which involve that a car catches fire, can be neglected. In comparison with all accidents it also seldom happens that cars run into the water, even in the Netherlands with its many waterways. Apart from this eventuality it is of course not predictable whether a similar accident will occur.

Moreover an investigation in the Netherlands into "submerged cars" has proved that it is of the utmost importance to wear seat belts especially in these cases, thus reducing the risk of being injured or losing consciousness as much as possible. In that way one may make attempts to get out of the car.

Besides it should be mentioned that there exist technical systems or these are being developed, which see to it that the belt is disconnected automatically after a crash.

In other systems the seat belt can be disconnected from outside.

### Information and propaganda campaigns

Also in a number of countries where the wearing of seat belts is not compulsory, large publicity campaigns have been conducted, e. g. in Great Britain and the United States.

In Great Britain each year campaigns have been conducted since 1968. In 1971 in North-East England (Tyne-Tees area) an intensive regional TV and poster campaign was conducted during six weeks, focussed on stimulating the use of seat belts.

This study makes it possible that valid conclusions may be drawn with regard to the impact of publicity campaigns on the use of seat belts. As you may know there were no other relevant activities, whereas no legal obligation was announced either.

The results of this campaign have been mentioned below.

Seat belt observations: Percentage of drivers wearing seat belts in cars with seat belts fitted in Tyne-Tees TV area and in control area.

	Pre-Campaign	Mid-Campaign	Post Campaign
Tyne-Tees Area .....	14	30	29
Control area .....	16	17	18

The researchers conclude that "it is a conclusive proof that publicity can affect behaviour in some road safety matters - in this case one of the most intractable (\*)".

In Great Britain this success led to a large national campaign in 1973 and also in the next years. The result of these campaigns - so reports Great Britain - is that the wearing percentage has increased from approximately 12 per cent to 32 per cent. As you may know there is still no wearing obligation in Great Britain.

Finally it should be mentioned that a number of countries after the introduction of the wearing obligation, also conducted national refresher campaigns in order to increase the wearing percentage still further respectively to stop a decrease (among others France, the Netherlands and Belgium did so).

(\*) J. P. Morris, Road Safety Publicity, 1972. p. 70-71.

### The protection of children in cars

The protection of children in cars is a matter which cannot be solved by compulsory wearing only. In principle to children applies the same as to adults, viz. that as a matter of principle they should not be carried in cars without a safety device. If no safety device for children is present, the child should be carried at the back seat, considering this is less unsafe than at the front seat without any protection. Of course the best thing is to carry children in general at the back seat, while they are protected in a reliable way, particularly by means of special child's seats or child's belts.

For one or two motor-car types special child's seats are available, which can be fitted at the front seat in backward position. This is also an excellent way of protection.

In the Netherlands it is also permitted, if no adequate safety device is fitted at the back seat to carry children from the age of four at the front seat if a lapbelt is used. This method is considered much safer than at the back seat without safety device.

## ANNEX II

### LITERATURE, IN RELATION TO PART B

- Anderson, T. E. (1974). Ejection risk in automobile accidents. CAL Report No. ZQ-5276-V-2R. Calspan Corporation, Buffalo, New York, 1974.
- Bohlin, N. I. (1968). A statistical analysis of 28,000 accident cases with emphasis on occupant restraint value. AB Volvo, Gothenburg 1968.
- Campbell, B. J., O' Neill, B and Tingley, B. (1974), Comparative injuries to belted and unbelted drivers of sub-compact, compact, intermediate and standard cars. Paper presented at the Third International Congress on Automotive Safety, San Francisco, California, 15th-17th July, 1974.
- ECE (1973). Cost benefit considerations of restraint systems, Ad hoc group "Restraint Systems", Commission of the European Communities, Brussels, 16th May, 1973.
- Henderson, J. M. and Freedman, K. (1973). The effect of mandatory seat belt use in New South Wales, Australia. In: Proceedings of the 17th Conference of the American Association for Automotive Medicine, AAAM, Lake Bluff, Illinois, 1973.
- Huelke, D. F. , Sherman, H. W. and O'Day, J. (1974). The hazard of the unrestrained occupant. In: Proceedings of the 18th Conference of the American Association for Automotive Medicine, AAAM, Lake Bluff, Illinois, 1974.
- HUK (1975). Innere Sicherheit im Auto, Das Unfallgeschehen und seine Folgen. HUK-Verband, Hamburg 1975.
- Mela, D. F. (1974). Review of safety belt usage and effectiveness in accidents. Office of Statistics and Analysis, Mathematical Analysis Division, NHTSA, Washington 1974.
- ONSER (1974). La diminution du nombre de tués en rase campagne. ONSER actualités, No. 45, November 1974.
- ONSER (1975). Comparison between in-the-field accidents and reconstructed accidents with dummies and with cadavers. In: Proceedings of 19th Stapp Car Crash Conference, Society of Automotive Engineers, Warrendale, 1975.
- Patrick, L. M. and Andersson, A. Three-point harness accident and laboratory data comparison. In: Proceedings of 18th Stapp Car Crash Conference, Society of Automotive Engineers, Warrendale, 1974.
- Reinfurst, D. W., Silva, C. Z. and Seila, A. F. (1976). A statistical analysis of seat belt effectiveness in 1973-1975 model cars involved in towaway crashes.
- University of North Carolina, Highway Safety Research Center, Chapel Hill, N. C. 1976.
- Sharp, R. J. A. (1973). The objectives of Vehicle Safety Legislation. In: Vehicle Safety Legislation, The Institution of Mechanical Engineers, London 1973.



SWOV (1974). Lap belts and three-point belts, a comparison of effectiveness. Institute for Road Safety Research. SWOV, Voorburg, 1974.

SWOV (1977). Tien Jaar verkeersonveiligheid in Nederland. Stichting Wetenschappelijk Onderzoek Verkeersveiligheid SWOV, Voorburg, 1976.

Tourin, B. and Garrett, J.W. (1960), Safety belt effectiveness in rural California automobile accidents. Automotive Crash Injury Research of Cornell University, New-York, 1960.

Walz, F. (1972). Der Einfluss von Sitzgurten und Kopfstützen auf die Verletzungen von Antoinsassen. Inaugural - Dissertation, Zürich, 1972.

Walz, F., Zollinger, U. and Niederer, P. (1976). Untersuchungen über schwer und tödlich verletzte Träger von Sicherheitsgurten in der Schweiz im Jahre 1976 (I). Interdisciplinaire Arbeitsgruppe für Unfallmechanik, Universität Zürich, 1976. (French translation also available).

*Part II*

CONCLUSIONS ON ROAD TRAFFIC RULES  
AND ROAD SIGNS AND SIGNALS ADOPTED BY THE MINISTERS

[CM(78)6 Final]

The Council of Ministers,

meeting in Brussels, on 1st June, 1978

Having considered the Report of the Committee for Road Traffic, Signs and Signals [CM (78)2 Final]

- I. NOTES with satisfaction that the work of the Committee leads to even greater uniformity of road traffic rules, signs and signals, this being one of the basic requirements for improving road safety in Member countries.
- II. APPROVES the above report drawn up by the Committee in accordance with its terms of reference, together with the annexes on the following subjects:
  1. residential areas;
  2. signing of escape lanes;
  3. signing of closed lanes.
- III. APPROVES the new programme of work prepared by the Committee.



REPORT ON MATTERS CONCERNING ROAD TRAFFIC,  
SIGNS AND SIGNALS

[CM(78)2 Final]

I. At its June 1971 session, the Council of Ministers instructed the Committee for Road Traffic, Signs and Signals:

- to ensure the implementation of the Vienna Conventions, the European Agreements and the Protocol on Road Markings, due regard being paid to such reservations as Member countries wished to formulate;
- to follow up the application and development of the rules contained in these international conventions and agreements in order to keep them always in line with present-day traffic needs whilst also safeguarding, and if possible strengthening, the co-ordination achieved at international level.

These terms of reference were confirmed by the Council at its meetings on 2nd December, 1976.

II. The Committee has completed its study on the following points:

1. Residential areas

As stated in the interim report on this subject which was submitted to the Council of Ministers in December 1977, the Committee has had wide discussions on several countries' experiments concerning residential areas, the aim being to facilitate the coexistence of drivers and pedestrians on roads where there is little traffic. It is hoped that this will help social contacts between local residents by improving pedestrian safety generally, and more especially for children, by making special arrangements to this effect, notably by eliminating the conventional distinction between carriageway and pavement.

From a legal angle, the creation of such areas presupposes the introduction of special traffic rules applicable within them and the choice of road signs indicating their entry and exit.

After careful consideration, the Committee has agreed on the following traffic rules:

In residential areas:

1. Pedestrians may make use of the road over its entire width. Games are allowed everywhere.
2. Drivers shall proceed at very low speed, as specified by domestic legislation the authorities concerned in each country but in no case at more than 20 kmh (12 mph).
3. a) Drivers must not put pedestrians at risk nor behave in an obstructive manner. If necessary, they must stop.  
b) Pedestrians shall not impede vehicular traffic unnecessarily.
4. In contrast to ordinary roads, parking is generally banned except on signed parking sites.

As regards the signing of residential areas, the Committee has considered the sign used in the Netherlands and various projects submitted by other delegations.

At the Committee's request, the French Delegation conducted day and night visibility tests for these proposed signs, and also tested their intelligibility by questioning several hundred drivers.

In the light of these tests and investigations, the sign selected by the Committee for entry to a residential area is a white rectangle containing a blue panel on which the symbols for a house, a car, an adult pedestrian and a child at play are shown in white.

Exit from a residential area is shown by the same sign cancelled by a red bar.

The Netherlands Delegation has declared that it cannot introduce the new sign proposed at the present stage as its country already uses signs designed for this particular purpose. At a later stage, however, it may perhaps be possible to adopt the European co-ordinated sign.

The Committee's report on this matter is appended as Annex I.

## 2. Signing of escape lanes

In various countries, vehicles descending long steep hills have often been involved in accidents because of sudden failure of their braking system. These are very often serious accidents, especially in the case of lorries or coaches.

To remedy this state of affairs, some countries have provided escape lanes on major traffic routes. Escape lanes are short sections of road leaving the main road at a narrow angle so that the driver of a runaway vehicle can enter them without changing direction to any great extent. Escape lanes terminate in an arrester bed filled with sand or gravel which brings the vehicle to a complete stop.

The possibility of providing an escape lane obviously depends on the topography of the site.

As the Convention on Road Signs and Signals makes no provision for the signing of escape lanes, the Committee proposes the creation of a new "informative" sign with a blue ground.

The text adopted by the Committee is shown in Annex II.

## 3. Signing of closed lanes

Traffic flows on multi-lane roads are often very dense and usually fast.

A hazardous situation arises when the number of lanes open in a given direction is reduced either permanently because of the narrowing of the carriageway or temporarily because of roadworks.

The sign that the Convention on Road signs and Signals specifies for narrowing of the carriageway is not sufficient as it fails to notify drivers clearly as to which lane is no longer free. This being so, the Committee proposes to create a new "informative" sign consisting of a light-coloured symbol on a dark ground or a dark-coloured symbol on a light ground which must in each case be adapted to local circumstances so as to give drivers plain guidance.

This sign is in fact part of the problem of signing particular lanes which is still being considered in a general context by the Committee for Road Traffic, Signs and Signals.

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Annex III contains the Committee's report on this subject.

III. As the Committee has now completed its investigation of most of the items in its programme of work, it has drawn up a new programme of future activities which is shown in Annex IV.

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IV. The Committee hereby submits this report and its annexes to Ministers for approval.

## Annex I

### RESIDENTIAL AREAS

#### I. The problem

1. On the question of relationships between drivers and pedestrians, the principle of separating the various categories of road-users is enshrined in the Vienna Convention and the Geneva Agreement. For instance, there is a provision that pedestrians shall, wherever possible, avoid using the carriageway.

2. Whilst the different categories of road-users must be kept apart for obvious reasons of safety on roads carrying fairly dense or fast-moving traffic, this is not essential on roads in residential areas where traffic is not very dense and where there is little through traffic. In such cases, non-segregation can facilitate coexistence of drivers and pedestrians on the carriageway, and also help towards social contacts between residents.

#### II. A possible solution

1. The Committee has noted with interest the experiments of this kind now being conducted in several countries and has studied various documents produced by the Netherlands Delegation which discussed a new town-planning concept known in Dutch as "woonerf" (residential area).

It implies that a given road or series of roads is almost entirely reserved for residents and that road-users are no longer segregated by the allocation of specific parts of the road (carriageways and pavements).

These areas are specially designed to facilitate harmonious relationships between the different categories of users and, in particular, to ensure that vehicles will not be driven too fast.

The Committee for Road Traffic Signs and Signals was in fact able to see the "woonerf" concept applied in practice when it met at the Hague in September 1976.

2. This "residential area" concept has clearly aroused interest in most ECMT Member countries. To put it into practice, however, special legal provisions for "residential areas" are required because the traffic rules to be applied there are for the most part fundamentally different from those usually in force, particularly those concerning pedestrian protection.

In addition, a special road sign is needed to mark the boundary of such areas.

3. After careful examination, and bearing in mind the results of the tests and investigations conducted by the French Delegation, the Committee has agreed on the legal provisions applicable to residential areas and on the signs to mark their boundary. In this way, uniform arrangements will be applied in the various countries concerned.

### III. Conclusion

#### A. It is proposed to amend the Convention on Road Traffic as follows:

- a) a new paragraph (ac) worded as follows, should be added under Article 1:

"Residential area" means a specially designed area within which particular traffic rules are applicable, and the entries and exists of which are marked by distinctive signs.

- b) an additional article (Article 25bis) worded as follows, should be inserted under Article 25:

"Article 25bis. Residential areas.

Within residential areas:

1. Pedestrians may make use of road over its entire width. Games are allowed everywhere.
2. Drivers shall proceed at very low speed, as defined by domestic legislation, which shall in no case be more than 20 kmh (12 mph).
3. a) Drivers shall not put pedestrians at risk nor behave in an obstructive manner. If necessary, they must stop.  
b) Pedestrians shall not impede vehicular traffic unnecessarily.
4. Car parking is borbidden except where shown by parking signs. The contracting parties or their subsidiary bodies may extend this ban to other categories of vehicles."

#### B. It is proposed to amend the Convention on Road Signs and Signals as follows:

"Annex V Section F shall be supplemented as follows:

8. Signs showing entry and exit of a residential area.

- Sign E27 "residential area" shall be placed at the point where special traffic rules for residential areas become applicable.
- Sign E 28 "end of residential area" shall be placed at the point where the traffic rules for residential areas cease to be applicable.



E,27



E,28





## Annex II

### SIGNING OF ESCAPE LANES

#### I. Background

Vehicles descending a long, steep hill are heavily dependent on the efficiency of their braking system. Failure or malfunction of that system gives rise to a very dangerous situation which can result in a serious accident, especially if the 'runaway' collides with a vehicle climbing the hill.

#### II. Escape Lanes - Their purpose

In the United Kingdom and some other countries a number of long, steep hills on busy roads have been equipped with what are known as 'escape lanes'. These normally take the form of a short section of carriageway leaving the main road at a narrow angle, often at a bend, so enabling a driver to enter without reducing speed (which anyway, he is incapable of doing) or changing direction significantly. The lane terminates in an arrester bed filled with sand or gravel which absorbs the impact of the vehicle and so halts it. Obviously, the possibility of introducing escape lanes is governed by the nature of the terrain alongside the road. In a mountainous region, for example, where the road is bordered by a rock face or a steep drop escape lanes are out of the question. But experience in the United Kingdom has shown that where they can be installed these lanes can prevent serious accidents.

#### III. The Problem

The Convention on Road Signs does not provide a sign to indicate the presence of an escape lane. In the United Kingdom sign A,2<sup>a</sup> is used to warn drivers about the hill itself. The sign is placed on the approach to the descent and, where necessary, at intervals on the slope. If an escape lane has been provided, A,2<sup>a</sup> carries a worded sub-plate bearing the legend 'Escape Lane Ahead' and showing the distance to the lane, with a final sign at the entry to the escape lane. But the sign plate has serious drawbacks. For example, it may be difficult for the driver of a runaway vehicle to read, understand and act on worded information when at the same time trying to control his vehicle. Words would not in any case have the same impact on a driver as would a distinctive symbol. Finally, there is the danger that the words would not be understood by a foreign driver (in recent instance that actually happened in Britain, fortunately the driver lived to tell the story).

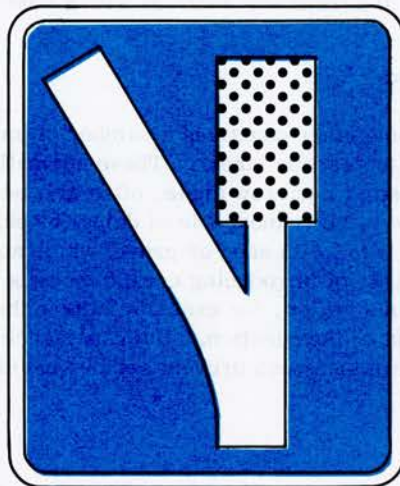
#### IV. The Solution

These defects would be overcome if escape lanes were indicated by a standard, symbolic sign, the significance of which could be understood at a glance, which attracted attention, and which overcame the language barrier. Such a sign, with a sub-plate showing distance to the escape lane, should be sited in conjunction with A,2<sup>a</sup> at the top of the descent, where the danger zone begins and it should be placed on its own at the entry to the escape lane. Depending on the length of the hill the initial sign should be repeated as necessary, again with a distance sub-plate.

## V. Conclusion

It is considered that the adoption of a harmonized, symbolic, informative sign to indicate escape lanes on steep hills would be in the interests of road safety. The symbol may be varied to correspond to the siting of the escape lane in relation to the road concerned. In conclusion, it is proposed to supplement Annex V, Section F, of the Convention on Road Signs and Signals as follows:

"9. Sign notifying an escape lane".



E,29

## Annex III

### SIGNING OF CLOSED LANES

#### I. The Problem

On multi-lane roads there are often heavy flows of traffic. At the same time many vehicles tend to travel subject of course to speed limits, as quickly as conditions of the road allow. In these circumstances it is a considerable hazard when a traffic lane is lost, either permanently, because, for example, a three-lane dual carriageway narrows down to two lanes, or temporarily because of road works or some obstruction on the road. The Convention on Road Signs and Signals 1968 does of course provide signs to warn of a narrower length of road ahead (A, 4a and A, 4b in Section B of Annex 1). But those advance warning signs do not give the precise indication, which is required additionally on fast dual carriageway roads, that a particular, instantly identifiable lane is not in use.

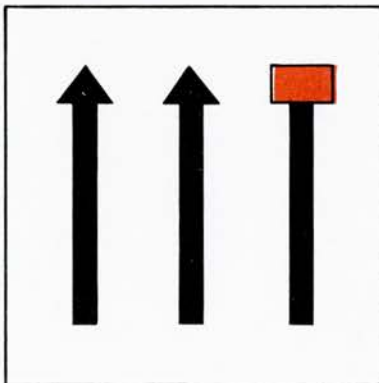
#### II. Solution

In a number of countries a sign has been evolved to indicate exactly which traffic lane will cease to be available. The basic design has the merit of flexibility in that the symbols can be adapted to show closure of more than one lane. Such a sign erected at a suitable point in advance of traffic lane closures and following sign A4, does tell drivers exactly which lane will be no longer available so enabling them to move over smoothly and in good time.

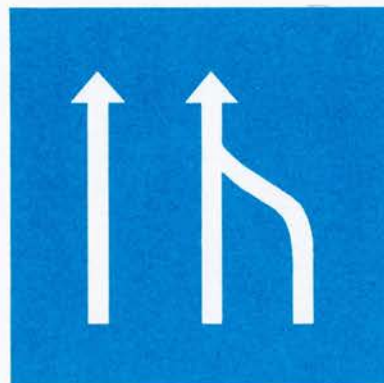
#### III. Conclusion

The Committee proposes the introduction of a new information sign for use when one or more traffic lanes cease to be available to vehicles either permanently or temporarily. Annex V Section F of the Convention on Road Signs and Signals 1968 should accordingly be supplemented as follows:

"10. Signs indicating closure of a traffic lane".



E,30<sup>a</sup>



E,30<sup>b</sup>

This second type of sign can also be prescribed by domestic legislation.

In accordance with paragraph 2 of Annex V of the Road Signs Convention, the sign shall bear either white or light-coloured symbols on a dark ground, or dark-coloured symbols on a white or light-coloured ground.

The symbols may be adjusted as required to match the actual situation and show clearly which lanes are open and those which are closed.

Domestic legislation may provide for different colours to distinguish permanent closures and temporary ones.

## Annex IV

### PROGRAMME OF FUTURE WORK

Apart from the continuing terms of reference concerning:

- implementation of European rules (reservations)
- new regulations to be introduced in each country
- consideration of certain difficulties in practice

the Committee will work on the topics listed below:

1. Signing of rules applicable to separate traffic lanes
2. Replacement of inscriptions by symbols on additional panels
3. Creation of a "tunnel" danger sign
4. Desirability of an international definition for "earth-track" (dirt road) and "path"
5. Regulation on simultaneous flashing of all a vehicle's direction indicators (distress signals)
6. Forfeiture of right of way.
7. Interchangeability of foreign and national driving licences
8. Definition of residence
9. Use of motorways and similar roads by learner-drivers
10. Marking of traffic lanes by cat's eyes instead of lines
11. Regulations for the wearing of helmets by motor cyclist and moped riders
12. Regulations for the compulsory wearing of seat belts and exemptions
13. Colour of signs indicating places of interest
14. Signing of road works and obstacles
15. Use of audible warning devices and headlight flashing
16. Special audible and luminous warnings for priority vehicles
17. Lighting, general requirements
18. Passing lights (dipped beam headlights)
  - in built-up areas
  - in daylight

19. Noise, smoke, etc.
20. Lay-bys - Distances to be kept between heavy vehicles.
21. Control of parking at bus stops
22. The concept of "seats" in automobiles
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*Part III*

*REPORTS APPROVED BY THE COUNCIL OF MINISTERS*





REPORT AND CONCLUSIONS ON ROAD TRAFFIC FLOWS  
DURING THE SUMMER MONTHS IN ECMT MEMBER COUNTRIES

[CM(78)27 revised]

I. THE SITUATION WITH RESPECT TO THE RESPONSIBILITIES  
OF MINISTERS OF TRANSPORT

The question of road traffic flows within the summer holiday months was raised in the ECMT at Council of Ministers level in the course of the December 1977 session.

On this occasion, the representative of the Federal Republic of Germany expressed his concern about the coincidence of the dates selected for the beginning of the summer holidays in several European countries. In the light of experience in previous years, the coincidence threatened especially troublesome traffic flow difficulties, especially for the 1st July, 1978 weekend. However, as the timing of the summer holidays was already decided for the year in question, it was proposed to look into the various short-term measures which might be taken at least to mitigate the effects of the situation specific to the year 1978.

At longer range, the ECMT was asked to consider the various ways in which the Ministers of Transport, by joint consultation at international level, could take steps to avoid the familiar difficulties encountered at the beginning - and to some extent at the end - of the summer holidays.

Here, the pre-eminent considerations are traffic flow and road safety but, more generally speaking, public opinion nowadays is increasingly inclined to see this matter as an important aspect of the quality of life. Indeed, road congestion, especially on trunk routes is not only conducive to accidents, it also entails a waste of energy and, even more so, considerable inconvenience to road users, young and old, as they have to put up with wastes of time, often under trying conditions, which are much resented.

The Council accordingly appointed an ad hoc Group which was to submit, as a first step, an analysis of the problem together with an exploratory review of possible improvements.

A paper on these lines was submitted to the Council when it met in Brussels on 31st May and 1st June, 1978. Directions were given on this occasion for the submission of concrete proposals and, after a further exchange of views at the 48th session of the Council, these are set out below in accordance with the guidelines laid down.

The matter at issue has a two-fold aspect:

- first, a modal aspect since it more particularly concerns the road sector, where traffic flow and road safety are especially relevant factors;

- secondly, a temporal aspect, since it more particularly concerns problems relating to the summer holidays and disregards all the somewhat different aspects relating to other, shorter holidays such as Christmas and Easter; the problem of personal mobility during the summer holiday period does indeed have greater implications at international level.

On the other hand, the matter at issue cannot be restricted only to considerations falling within the competence of Ministers of Transport as investigation shows that there is a vitally important facet of it which lies outside the transport sector and is mainly a matter for other central or local government authorities. On this point there can be no doubt that the solution of the difficulties encountered largely depends on better staggering of the dates at which summer holidays begin and end, for it is common knowledge that these have a pre-eminent bearing on the generation of traffic peaks.

This means that Ministers of Transport are not the only ones concerned, but as they have to bear the burden of users' complaints about traffic conditions, they are very much involved and, even though solutions to such problems are not their direct responsibility, they must take representations to all the authorities concerned.

Obviously, the action suggested is intended purely for European countries or regions where coinciding summer holiday dates are likely to have the effects referred to on road traffic.

## II. ACTION TO BE ENVISAGED

In the light of the foregoing considerations, it seems that improvements could be made by a combination of measures falling under three main heads as follows:

### 1. Holiday planning arrangements

On this point, the authorities concerned (Central Government, regional and local authorities, schools, etc.) should bear in mind, among the other factors for determining the dates at which school and workers' holidays should begin and end, the implications that their choice may have on holiday traffic flows, and how important it is to find ways and means of staggering departure and return dates. In any event, arrangements should be made to ensure that the dates of the school holidays are announced sufficiently soon in order that suitable adjustments to the provisions for traffic control can be made accordingly at the right time.

It would also be desirable to proceed in the same way so as to get similar results as regards the dates at which big firms or economic sectors take their holidays.

Similarly, there should be some flexibility in the dates of occupancy of holiday accommodation so as to avoid concentration of traffic at weekends.

With reference to the work done in this field, the action taken by the OECD, and notably by the Tourism Committee, should be supported by the Member countries of the Conference.

### 2. Traffic Planning

This is an area where Ministers of Transport are involved to a greater or lesser degree.

Here, there is a whole range of possible measures depending on each country's particular circumstances and characteristics. It seems that action of this kind could be taken in the following ways:

- to make use of the data obtained by experience so that traffic planning arrangements will be consonant with the forecasts for the holiday dates selected;
- to improve traffic flows by organising diversion routes which can be easily identified by road users and which should be brought to the notice of foreign motorists at a sufficiently early date;
- to give drivers warning of congestion on trunk roads through technical traffic control systems and to guide - and if necessary divert - traffic flows by means of variable legend signs;
- to avoid or mitigate traffic congestion by dispersing from or postponing road works on trunk roads during school holiday periods;

- to take account of the date at which summer holiday traffic begins when planning the opening of new sections of trunk road.

It must also be borne in mind that lorry traffic can raise some problems during the summer holiday traffic peaks. Because of this, some countries consider there should be special provisions concerning lorry traffic on routes that are particularly affected during the critical periods in question ; other countries, on the contrary, argue that discriminatory restrictions should be avoided.

### 3. Measures relating to user behaviour

It is clear that the expected effects of the foregoing measures are also conditioned by user behaviour and this can be influenced if users are given the fullest possible information. To make the measures referred to more fully effective, it is accordingly useful:

- to inform motorists in good time, and if possible before they decide on where to take their holidays, about holiday dates in schools, big firms and economic sectors causing particularly sensitive traffic situations, the object, as far as possible, being to avoid concentrating travel at certain critical dates, especially at weekends;

- to extend the system of road traffic information broadcasts via radio facilities so that certain traffic flows may be rerouted if required;

- to ask radio stations to intensify their international co-operation with the object of informing drivers about expected difficulties for traffic generally and holiday traffic in particular and, in the framework of this information activity, to give particulars about connecting routes in neighbouring countries, it being noted that - to be useful - the announcements should be made in the most important foreign languages.

REPORT ON RECENT TRENDS CONCERNING ROAD ACCIDENTS  
AND BREAKDOWN OF CASUALTIES - YEAR 1977  
(Introductory Note)

As proposed by the ECMT authorities concerned, and at the Road Safety Committees request, the Belgian Delegation has produced this paper on the recent trend concerning road accidents in the Member countries of the ECMT.

This paper is part of a series issued at regular intervals. A similar report was submitted to the Council of Ministers in December 1977 [CM(77)34].

A report such as this, dealing as it does with a matter of topical interest, must include the latest available figures. In consequence, there was not enough time for it to be considered by the Road Safety Committee or the Committee of Deputies and it is accordingly submitted to the Council for information only.

1. Introduction

A questionnaire for the drafting of this report was sent to 19 Member countries of the Conference and to 4 Associate Members. 23 countries had replied.

On various occasions in connection with previous reports, it was pointed out that the ECMT countries covered too varied a range of geographical and socio-economic factors (climate, density of population and of the road system, quality of the latter, road-user attitudes, standards of living, traffic engineering, etc.) to justify straightforward general comparisons. However, the tables submitted are sufficiently explicit for each country to be able to see how it stands in relation to the others and seek the reasons why. The comments which follow are intentionally short, it being most difficult to distinguish any common tendencies for the countries under review. The cautionary remarks about over-hasty conclusions as to the interpretation of tables are not repeated in this case.

2. Trends in numbers killed, casualties and cars

a) Table 1 compares the figures for 1977 as compared with 1976 for the number of killed, casualties and cars.

Table 3 shows the trend from 1970 to 1977: the trend for numbers killed is shown by graphs.

Countries are classified in the tables by reference to car ownership figures as at 1st July, 1977 (number of cars per thousand population) - see column A of table 2.

b) for the 14 ECMT countries whose 1977 figures were made available, the difference from 1976 to 1977 is as follows:

	1976	1977	1976/77
Killed (death within 30 days) <sup>a)</sup> .....	72,988	72,230	+ 1,0 %
Casualties (killed plus injured) <sup>a)</sup> .....	1,973,000	2,019,000	+ 2,3 %
Cars <sup>a)</sup> .....	90,927,000	95,133,000	+ 4,6 %

a) 18 ECMT countries shown in Table 1.

The comparative figures 1976/77 for killed and casualties, in each country, show:

- a substantial increase in Yugoslavia and Greece (countries where the number of cars per thousand population is still small and where the number of cars in use is increasing sharply) ;
- an appreciable increase in Switzerland (withdrawal of the obligation to wear seatbelts in September 1977) ; and Ireland ;
- an increase in Germany, Netherlands, Belgium, the United Kingdom and Spain (sharp increase in the number of cars in Spain) ;
- a decrease in Sweden, France, Italy, Norway, Finland and Portugal;
- a diverging trend for numbers killed and casualties in Luxembourg, Denmark and Austria.

The further decrease in number of killed and casualties in Japan is worthy of note.

c) The trend over a longer period (1970-1976) for all 19 Member countries of the ECMT is summarised below:

THOUSANDS	1970	1971	1972	1973	1974	1975	1976
Killed (death within 30 days)	86.3	88.0	90.7	86.8	78.3	79.6	80.1
Casualties (killed + injured) .....	2,092	2,117	2,202	2,132	1,967	1,978	2,009
Cars .....	64,054	69,226	74,422	79,525	83,059	86,790	91,439

Indices (base : 1970 = 100)

	1970	1971	1972	1973	1974	1975	1976
Killed (death within 30 days)	100	102.0	105.1	100.6	90.8	92.3	92.8
Casualties (killed + injured) .....	100	101.2	105.2	101.9	94.0	94.5	96.0
Cars .....	100	108.1	116.2	124.2	129.7	135.5	142.8

### 3. Comparison of road risk levels

As pointed out in previous reports, the best yardstick for comparing road risks from country to country is the number of killed (death within 30 days) per 100,000 population, provided of course that due regard is also paid to the degree of car ownership (number of cars per 1,000 population).

Table 2, and the diagram which goes with it, plainly show each country's "road risk" level, but must nonetheless be treated with circumspection because the differences are not necessarily due to the merits of road safety policy. They may also be attributable to traffic conditions, such as density of the road network, high population densities, urban development along road traffic corridors and of course, road user behaviour and enforcement of regulations by the police.

### 4. Breakdown of killed and casualties by road-user category (see Tables 5 to 9)

Table 5, which gives the percentage breakdown of the number of killed by road user category, clearly shows which type of road user are most vulnerable to road accidents.

Any enquiry into the breakdown of killed and casualties by category of road user must of course pay due regard to the composition of the motor vehicle population.

It is also worthy of note that the casualty breakdown (Table 6) is substantially different from the breakdown of the number of killed (Table 5); the severity of accidents is indeed related to the category of road-user concerned. It depends on how well he is himself protected and on the speed of the vehicle at the time of impact.

Once again these tables clearly show the vulnerability of pedestrians and drivers of two-wheeled vehicles.

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Table 1. TREND 1976/1977: OF NUMBER OF KILLED (DEATH WITHIN 30 DAYS)  
NUMBER OF CASUALTIES (KILLED + INJURED)  
NUMBER OF CARS

	KILLED (DEATH WITHIN 30 DAYS)			CASUALTIES (KILLED + INJURED)			CARS
	1976	1977	76/77	1976	1977	76/77	76/77
Sweden .....	1,168	1,031	-11.7%	23,011	21,947	- 4.6%	- 0.8%
Luxembourg .....	100	110	+10.0%	2,732	2,600	- 4.8%	+ 8.1%
Germany .....	14,820	14,978	+ 1.1%	495,401	523,120	+ 5.6%	+ 5.8%
France* .....	14,799	14,125	- 4.6%	361,322	359,080	- 0.6%	- 4.6%
Switzerland* .....	1,164	1,276	+ 9.6%	29,967	32,510	+ 8.5%	+ 3.7%
Italy* .....	9,552	8,796	- 7.9%	226,903	217,575	- 4.1%	+ 2.8%
Netherlands .....	2,431	2,583	- 6.3%	64,736	67,059	+ 3.6%	+ 5.9%
Belgium .....	2,488	2,522	+ 1.4%	86,551	88,340	+ 2.1%	+ 4.9%
United Kingdom .....	6,570	6,614	+ 0.7%	339,673	348,061	+ 2.5%	
Denmark .....	857	827	- 3.5%	20,456	20,467	+ 0.1%	
Norway .....	471	442	- 6.2%	10,865	13,272 <sup>a)</sup>		+ 8.2%
Austria* .....	2,131	2,091	- 1.9%	62,771	64,133	+ 2.2%	+ 7.5%
Finland .....	804	709	-11.8%	12,510	12,018	- 3.9%	+ 4.1%
Ireland .....	525	583	+11.0%	8,323	9,098	+ 9.3%	+ 3.8%
Spain* .....	6,187	6,296	+ 1.8%	103,959	107,841	+ 3.7%	+11.1%
Portugal* .....	3,372	2,799	-17.0%	38,858	37,200	- 4.3%	+ 1.8%
Yugoslavia .....	4,357	5,125	+17.6%	62,237	70,367	+13.1%	+11.1%
Greece* .....	1,192	1,323	+11.1%	23,029	24,593	+ 5.8%	+21.5%
Turkey .....	7,136			35,917			
United States .....	45,509	47,671	+ 4.8%				
Canada* .....	5,157	5,155	- 0.04%	?	221,260		
Australia .....	3,583	3,578	- 0.1%	91,391	95,194	+ 8.4%	b)
Japan* .....	12,654	11,629	- 8.1%	623,691	602,156	- 3.5%	+ 8.2%

\* Figures adjusted to standard definition (death within 30 days).

a) Norway: Procedure for country casualties modified in 1977.

b) Australia : " " " cars " " "

Table 2. A. NUMBER OF CARS PER 1,000 POPULATION.  
 B. NUMBER OF KILLED (DEATH WITHIN 30 DAYS) PER 1,000,000 INHABITANTS.  
 C. NUMBER OF KILLED (DEATH WITHIN 30 DAYS) PER 100,000 CARS  
 D. NUMBER OF POPULATION PER SQUARE KILOMETRE.

1977	A	B	C	D
Sweden .....	348	125	36	20
Luxembourg .....	348	309	89	125
Germany .....	326	244	75	247
France* .....	318	267	85	96
Switzerland* .....	303	202	67	153
Italy* .....	285	156	54	187
Netherlands .....	275	186	68	337
Belgium .....	291	257	88	322
United Kingdom .....	266	122	46	236
Denmark .....	265	163	61	118
Norway .....	263	109	42	12
Austria* .....	252	278	110	90
Finland .....	222	150	67	14
Ireland .....	179	182	102	46
Spain* .....	156	173	111	72
Portugal* .....	102	304	298	103
Yugoslavia .....	85	238	280	84
Greece* .....	61	143	235	70
Turkey .....				
United States .....	521	220	42	23
Canada* .....	390	221	57	2.3
Australia .....	426	253	59	1.8
Japan* .....	166	102	62	302

\* Figures adjusted to standard definition (death within 30 days).

NOTE: Figures for number of cars and population as at 1st July, 1977 (in most cases these are interpolated on the basis of annual censuses).

Table 3. TREND 1977/1970: NUMBER OF KILLED  
NUMBER OF CASUALTIES (KILLED AND INJURED)  
NUMBER OF CARS

Index 1970 = 100

1977	INDEX 1977		
	KILLED	INJURED	CARS
Sweden .....	78.9	93.2	124.9
Luxembourg .....	83.3	104.0	154.1
Germany .....	78.0	94.9	143.6
France .....	86.2	106.7	138.4
Switzerland .....	76.9	86.3	156.0
Italy .....	80.5	91.2	160.8
Netherlands .....	81.2	93.9	175.0
Belgium .....	85.5	82.0	139.4
United Kingdom .....	88.2	95.8	122.0 <sup>a)</sup>
Denmark .....	68.5	76.8	123.5 <sup>a)</sup>
Norway .....	78.9	107.7	159.4
Austria .....	83.4	88.3	164.1
Finland .....	67.2	70.4	151.0
Ireland .....	108.0	92.8	146.5
Spain .....	115.4	119.0	250.0
Portugal .....	152.0	122.9	184.7
Yugoslavia .....	139.1	131.2	267.0
Greece .....	126.8	95.6	272.7
Turkey .....			
United States .....	90.6		123 <sup>a)</sup>
Canada .....	103.6	120.5	137 <sup>a)</sup>
Australia .....	94.2	99.8	162.4
Japan .....	53.4	60.3	223.9

a) Car index refers to 1976 (1977 figures not yet available).

Table 4. NUMBER OF KILLED AND CASUALTIES (KILLED + INJURED) IN 1977  
 NUMBER OF CARS (AS AT 1st JULY, 1977) - POPULATION (AS AT 1st JULY, 1977)

- Areas in sq. km. -

1977	KILLED A	CORRECTION FACTOR B	KILLED (DEATH WITHIN 30 DAYS) C = A x B	CASUALTIES	CARS (THOUSANDS) AS AT 1.7.1977	POPULATION (THOUSANDS) AS AT 1.7.1977	AREA (SQ. KM.)
Sweden .....	1,031	1	1,031	21,947	2,869	8,256	411,615
Luxembourg .....	110	1	110	2,600	124	356	2,587
Germany .....	14,978	1	14,978	523,120	20,020	61,389	248,577
France .....	12,959	1.09	14,125	359,080	16,625	53,000	550,000
Switzerland .....	1,302	0.98	1,276	32,510	1,916	6,327	41,293
Italy .....	8,221	1.07	8,796	217,575	16,148	56,463	301,260
Netherlands .....	2,583	1	2,583	67,059	3,810	13,855	41,160
Belgium .....	2,522	1	2,522	88,340	2,860	9,830	30,514
United Kingdom .....	6,614	1	6,614	348,061	14,450	54,300	229,900
Denmark .....	827	1	827	20,467	1,350	5,088	43,075
Norway .....	442	1	442	13,272	1,065	4,043	323,886
Austria .....	1,867	1.12	2,091	64,133	1,897	7,516	83,851
Finland .....	709	1	709	12,018	1,054	4,739	337,032
Ireland .....	583	1	583	9,098	577	3,198	69,134
Spain .....	4,843	1.3	6,296	107,841	5,648	36,300	504,750
Portugal .....	2,153	1.3	2,799	37,200	940 <sup>a)</sup>	9,210	89,106
Yugoslavia .....	5,125	1	5,125	70,367	1,828	21,560	255,804
Greece .....	1,181	1.12	1,323	24,593	564	9,256	131,990
Turkey .....		1.3					
United States .....	47,671	1	47,671		113,000	217,000	9,359,373
Canada .....	5,260	0.98	5,155	221,260	9,090	23,316	9,976,140
Australia .....	3,578	1	3,578	95,194	6,040	14,164	7,682,300
Japan .....	8,945	1.3	11,629	602,156	18,910	113,900	377,480

a) Portugal: not including light dual-purpose vehicles.

Table 5. PERCENTAGE BREAKDOWN OF KILLED BY ROAD-USER CATEGORY

(total by country = 100 %)

1977	PEDESTRIANS	BICYCLES	MOPEDS	MOTOR- CYCLES	CARS	BUSES AND COACHES	COMMERCIAL VEHICLES	OTHERS + UNIDENTIFIED
Sweden .....	17.6	11.7	7.1	2.8	56.8	0.3	1.8	1.8
Luxembourg .....	19.1	9.1	0.9	6.4	64.5			0
Germany .....	25.0	9.1	5.9	8.5	48.5	0.2	1.9	1.0
France* .....	18.4	4.5	16.6	3.3	52.0	0.2	3.9	1.2
Switzerland* .....	27.6	5.9	10.8	10.4	40.6	0.1	4.3	0.4
Italy* .....	23.3	8.1	10.6	10.2	41.4	0.3	4.8	1.3
Netherlands .....	14.9	19.4	10.6	5.3	46.6	0.2	2.3	0.8
Belgium .....	22.2	10.9	7.5	7.5	49.4	0.2	2.0	0.4
United Kingdom .....	35.0	4.6	1.7	16.2	36.9	1.0	3.9	0.8
Denmark .....	21.6	13.5	12.8	8.3	36.8	6.9		
Norway .....	33.3	9.0	5.2	5.4	42.1	0	4.1	0.9
Austria* .....	23.9	7.1	13.4	5.6	45.9	0.3	2.3	1.4
Finland .....	15.1	10.8	5.2	5.1	55.5	1.9	4.8	1.6
Ireland .....	38.1	8.1	7.7		41.3	0.9	1.7	2.2
Spain* .....	26.7	2.0	7.1	3.6	49.8	1.9	7.0	1.9
Portugal* .....	32.6	4.1	21.5	2.8	36.0	1.7		1.3
Yugoslavia .....	35.4				64.6			
Greece* .....	30.7	4.6	10.5	1.9	31.02	1.6	17.6	1.8
Turkey .....								
United States .....	16.1	1.9	0.1	8.6	57.3	0.1	12.9	3.0
Canada* .....								
Australia .....	20.0	2.8	10.8		66.2			0.2
Japan* .....	33.1	12.1	12.0	4.4	26.3	0.2	10.7	1.2

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

Table 6. PERCENTAGE BREAKDOWN OF CASUALTIES (KILLED + INJURED) BY ROAD USER CATEGORY  
(total by country = 100 %)

1977	PEDESTRIANS	BICYCLES	MOPEDS	MOTOR- CYCLES	CARS	BUSES AND COACHES	COMMERCIAL VEHICLES	OTHERS + UNIDENTIFIED
Sweden .....	10.0	9.1	7.4	4.5	63.9	1.1	1.9	2.1
Luxembourg .....	12.2	2.8	10.0		75.0			
Germany .....	12.6	9.4	8.4	8.5	57.6	0.9	2.1	0.6
France .....	12.3	3.8	24.6	2.8	52.5	0.6	3.1	0.5
Switzerland .....	14.9	7.4	15.4	11.7	46.9	0.6	2.6	0.4
Italy .....	14.1	4.8	14.5	10.8	50.9	2.0	2.5	0.4
Netherlands .....	9.7	18.7	27.9	4.8	36.0	0.4	2.1	0.4
Belgium .....	8.8	9.4	13.7	5.7	57.9	1.0	2.9	0.5
United Kingdom .....	20.5	6.7	4.2	16.4	43.5	3.6	4.6	0.5
Denmark .....	11.7	13.0	18.0	7.9	42.3	7.0		
Norway .....	17.0	7.2	6.2	6.3	56.7	1.6	4.4	0.6
Austria .....	12.7	8.1	21.0	3.6	50.4	1.0	2.0	1.2
Finland .....	23.4	14.8	8.9	3.2	41.9	0.8	2.7	4.2
Ireland .....	19.0	4.6	9.2		61.2	0.8	4.1	1.1
Spain .....	18.0	1.1	8.1	5.7	57.8	2.3	6.3	0.7
Portugal .....	30.0	2.7	22.0	1.8	40.6	1.4		1.5
Yugoslavia .....	24.2	75.8						
Greece .....	24.0	0.9	7.2	6.3	39.0	7.7	14.2	0.7
Turkey .....								
United States .....								
Canada .....								
Australia .....	10.2	3.6	11.2		74.9			0.1
Japan .....								

Table 7. A. NUMBER OF PEDESTRIANS KILLED PER 1,000,000 POPULATION.  
 B. NUMBER OF CYCLISTS KILLED PER 1,000,000 BICYCLES.  
 C. NUMBER OF MOPED RIDERS KILLED PER 1,000,000 MOPEDS.  
 D. NUMBER OF MOTOR-CYCLISTS KILLED PER 1,000,000 MOTOR-CYCLES.  
 E. NUMBER OF CAR OCCUPANTS KILLED PER 1,000,000 cars.

1977	A	B	C	D	E
Sweden	22			1,164	204
Luxembourg	59				
Germany	61		461	2,296	363
France*	49	49	389	975	442
Switzerland*	56	44	206	1,298	270
Italy*	36	46	317	580	226
Netherlands	28		39	1,734	316
Belgium	57	88	357	1,790	436
United Kingdom	43			969	171
Denmark	35			1,802	229
Norway	36			346	176
Austria*	66		531	1,410	506
Finland	35		333	501	282
Ireland	69		1,316		242
Spain*	47			199	555
Portugal*	99			891	1,072
Yugoslavia	84				
Greece	44			278	732
Turkey					
United States	35	10		817	242
Canada*					
Australia*	50				
Japan*	34	30	166	680	161

\* Figures adjusted to standard definition (death within 30 days).

Figures for population and road vehicles as at 1st July, 1977 (in most cases these interpolated on the basis of annual censuses).  
 (exceptions : United Kingdom, road vehicles as at 1st October, 1976. Denmark, road vehicles as at 1st July, 1976).

Table 8. NUMBER OF VEHICLES, BY CATEGORY, PER 1,000 POPULATION

1977	BICYCLES	MOPEDS	MOTOR- CYCLES	CARS	BUSES AND COACHES	COMMERCIAL VEHICLES
Sweden .....			3	348	1.6	21
Luxemburg .....	221	21	8	348	1.9	63
Germany .....		31	9	326	1.0	21
France .....	240	114	9	314	1.0	45
Switzerland .....	271	106	16	303	1.6	27
Italy .....	274	52	27	285	0.9	22
Netherlands .....		83	6	275	0.7	24
Belgium .....	318	54	11	291	2.0	31
United Kingdom ....			22	262	1.5	32
Denmark .....			8	262		47
Norway .....			34	263	2.4	35
Austria .....		71	11	252	1.1	20
Finland .....		40	10	222	1.9	28
Ireland .....			11	179	1.2	17
Spain .....			32	156	1.1	30
Portugal <sup>a)</sup> .....			10	102	0.8	39
Yugoslavia .....			12	85	1.0	12
Greece .....			10	61	1.5	26
Turkey .....						
United States .....	438		23	521	2.3	124
Canada .....		2	15	392	2.2	101
Australia .....			21	426	2.3	32
Japan .....	405	74	7	166	2.0	97

Figures for population and road vehicles as at 1st July, 1977 (in most cases these are interpolated on the basis of annual censuses).

Exceptions: United Kingdom, road vehicles as at 1st October, 1976. Denmark, road vehicles as at 1st July, 1976.



Table 9. ROAD VEHICLES AND POPULATION (THOUSANDS) AS AT 1st JULY, 1977

1 9 7 7	POPULATION	BICYCLES	MOPEDS	MOTORCYCLES	CARS	COACHES	COMMERCIAL VEHICLES
Sweden .....	8,256			24.9	2,869	13.0	172
Luxemburg .....	356	78.5	7.4	2.8	124	0.67	22.4
Germany .....	61,389		1,908	554	20,020	63.6	1,284
France .....	53,000	12,725	6,025	475	16,625	53.3	2,375
Switzerland .....	6,327	1,720	671	102	1,916	10.1	173
Italy .....	56,643	15,500		1,554	16,148	48.4	1,218
Netherlands .....	13,855		1,150	79	3,810	9.6	330
Belgium .....	9,830	3,121	527	105	2,860	19.7	310
United Kingdom <sup>a)</sup> ...	54,400			1,219	14,236	79.2	1,755
Denmark <sup>a)</sup> .....	5,070			38.3	1,330	239	
Norway .....	4,043			136	1,065	9.6	141
Austria .....	7,516		530	82.6	1,897	8.3	153
Finland .....	4,739		189	45.9	1,054	8.8	134
Ireland .....	3,198			34.2	571	3.8	55
Spain .....	36,300			1,146	5,648	40.3	1,101
Portugal .....	9,210			87.6	940 <sup>b)</sup>	7.1	361 <sup>b)</sup>
Yugoslavia .....	21,560			256	1,828	21.2	260
Greece .....	9,256			92.8	564	14.2	243
United States .....	217,000	95,000		5,000	113,000	500	27,000
Canada <sup>a)</sup> .....	23,018		54.5	341	9,016	50.4	2,324
Australia .....	14,164			296	6,040	33.2	456
Japan .....	113,900	46,176	8,387	755	18,910	224	11,014

Figures interpolated on the basis of annual censuses.

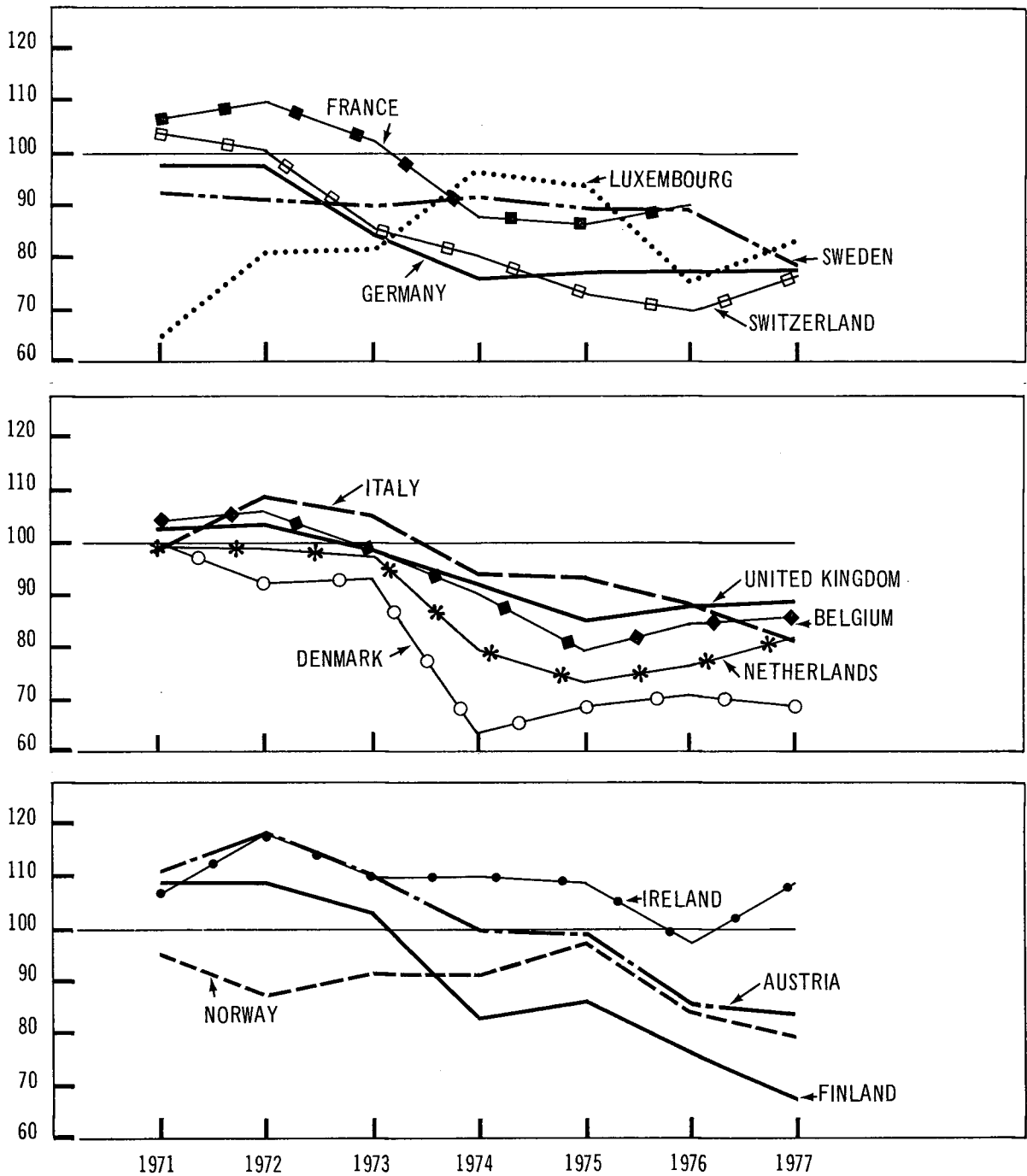
a) Road vehicles as at 1.10.1976 (United Kingdom), 1.1.1976 (Denmark), 31.12.1976 (Canada).

b) Portugal: Dual purpose vehicles are counted as commercial vehicles.

Figure 1

TREND OF NUMBER OF KILLED 1970-1977

Index 1970 = 100



### TREND OF NUMBER OF KILLED 1970-1977

INDEX 1970 = 100

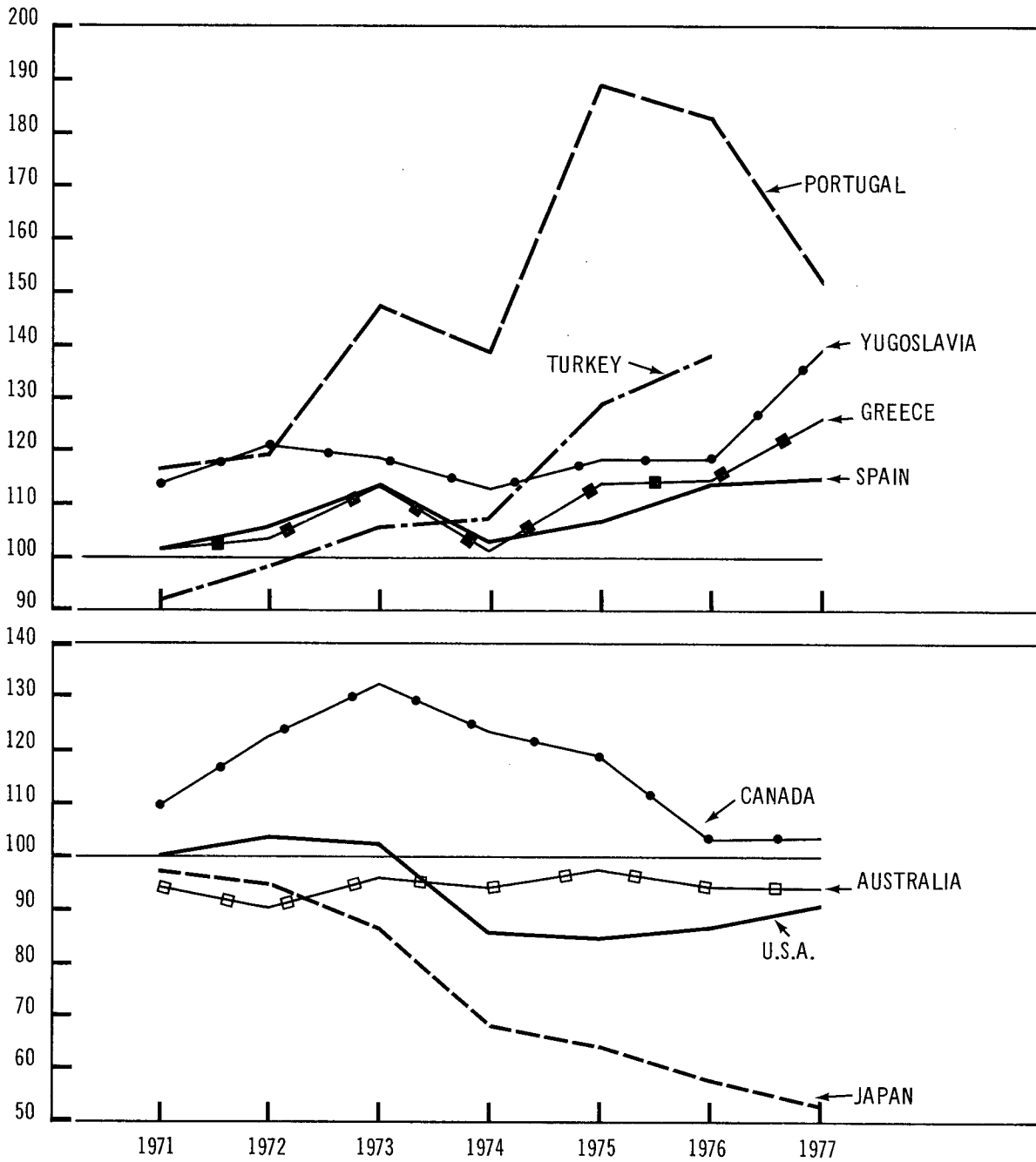
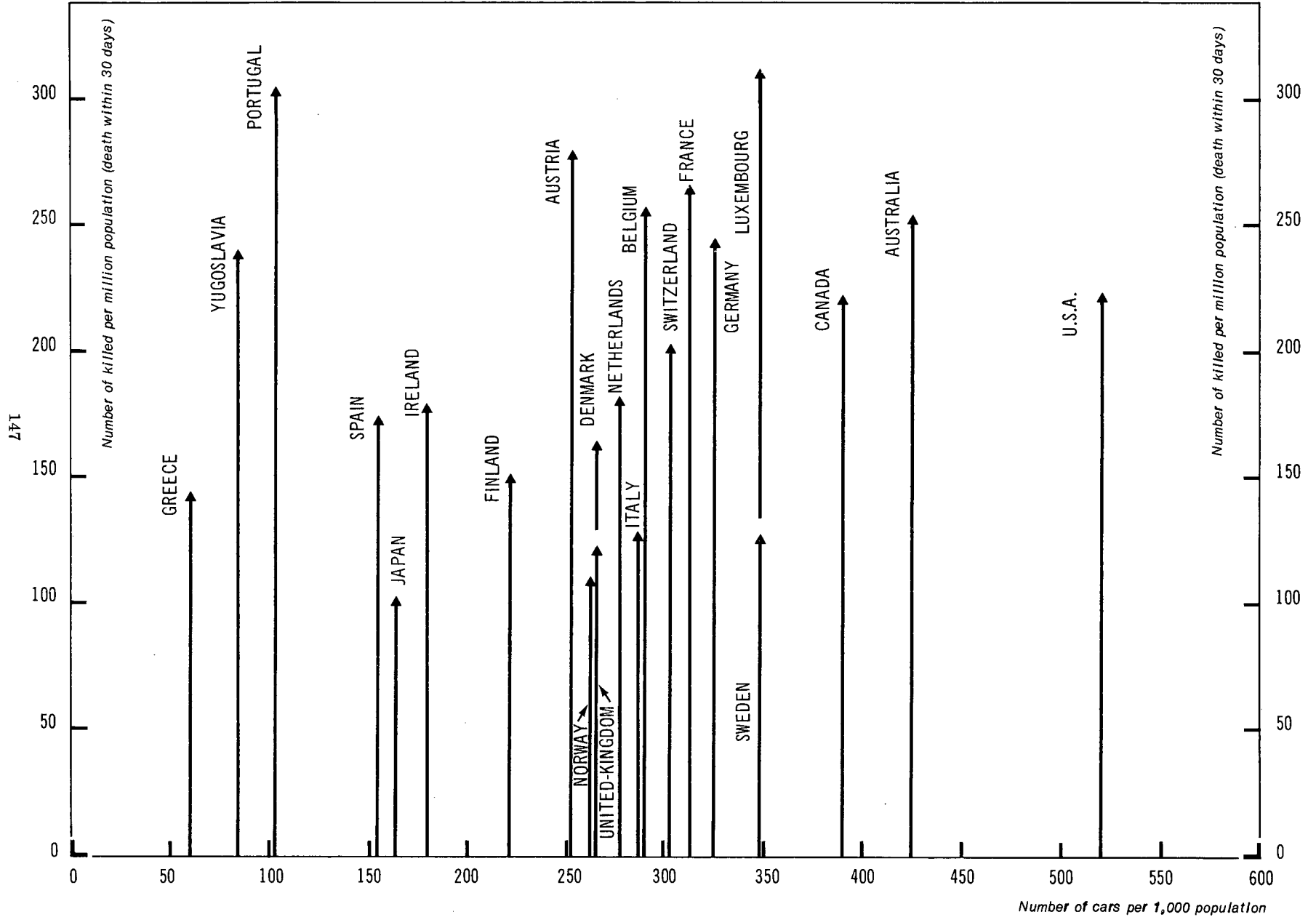


Fig. 2. ROAD RISK LEVELS 1977



**NOTE, FOR INFORMATION, ON CHANGES IN OFFICIAL  
TIME (SUMMER TIME) IN MEMBER COUNTRIES IN 1979**

In response to the Council of Ministers' instructions to provide regular information about Summer Time, the Secretariat has surveyed Member countries in order to find out what changes, if any, have taken place since November 1977, when the most recent report was published.

The results of the survey are shown in the following table and chart:

COUNTRY	APPLICATION OF SUMMER TIME		PERIOD		SUMMER TIME
	NO	YES	FROM	TO	
The Federal Republic of Germany	X				
Austria	X				
Belgium		X	1st April	30th September	GMT + 2
Denmark	X				
Spain		X	Not yet decided		GMT + 2
Finland	X				
France		X	1st April	30th September	GMT + 2
Greece		X	Not yet decided		GMT + 3
Ireland		X	18th March	28th October	GMT + 1
Italy		X	27th May	30th September	GMT + 2
Luxembourg		X	1st April	30th September	GMT + 2
Norway	X				
The Netherlands		X	1st April	30th September	GMT + 2
Portugal		X	25th March	30th September	GMT + 1
The United Kingdom		X	18th March	28th October	GMT + 1
Sweden	X				
Switzerland <sup>1</sup>	X				
Turkey <sup>2</sup>	X				
Yugoslavia	X				

1. Note from Swiss Delegation: "By referendum on 28th May 1978, the Swiss people rejected a proposal for a Federal Act on official time in Switzerland and which, in particular, would have introduced Summer Time throughout the Confederation. The majority by which the Act was rejected was small."
2. This country used to change over to and from Summer Time but has decided to do so no longer, under an Act passed in June 1978. It should however be pointed out that official time will be GMT + 3 throughout the year.

18th MARCH	25th MARCH
---------------	---------------

30th SEPTEMBER	28th OCTOBER
-------------------	-----------------

UNITED KINGDOM .....					
IRELAND .....					
PORTUGAL .....					
BELGIUM .....					
FRANCE .....					
LUXEMBOURG .....					
THE NETHERLANDS .....					
ITALY .....					



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