

Vehicle weights and dimensions: European Community experience

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What I would like to do today is give details of the work that is currently on going in the Commission with regard to road vehicle legislation in particular with regard to truck weights and dimensions and the mitigation of their effect on the road pavement. But before I do this I propose to give a brief overview of the key players in the Communities policy process, in particular as they relate to transport.

The main objective of the treaty which established the European Community was the development of a real common market, an area without internal frontiers in which goods, people, services and capital can circulate freely. This objective is not easy to realise in a Community of 12 Member States which all have their own economic, industrial, social, agricultural and transport policies.

Nevertheless, the treaty is an act of political will and its objective was reconfirmed in an additional treaty, the "Single European Act", in which the clear aim of the common market in 1993 was laid down.

Various institutions of the European Community contribute to the achievement of the common market, such as the European Parliament, the Council of Ministers, the Economic and Social Committee, the Court of Justice and the European Commission.

One of the tasks of the Commission, for which I am presently working, is to make the proposals for Community legislation on which the Council of Ministers have to agree.

If the Council, after consultation with the European Parliament and the Economic and Social Committee, adopt those legislative measures by qualified majority if necessary, measures which are called Directives, then the Commission has to safeguard their execution. So the European Commission can be considered the executive body, the Civil Service, of the Community.

There are about 14.000 officials of the Member States working within the Commission of which 35 % are busy with translation into the 9 community languages. The other officials - typists, clerks, general administrators and those relatively few that are directly concerned with formulating policy, work within 23 different sectors or Directorate Generals such as agriculture, telecommunications, environment, industry and transport.

The Directorate General for Transport (DG VII) counts for about 160 officials. The field of responsibility which includes road safety, technical inspection of vehicles, carriage of dangerous goods, container dimensions, tachographs and on board computers, environmental considerations in particular for urban transport and finally weights and dimensions of vehicles and their impact on the infrastructure is covered by only 7 policy making officials so clearly we are not overstaffed. We have no research facilities and have to rely on contributions from our Member States or hire external consultancies when political decisions are being prepared.

After this introduction, I should like to turn to the item of axle load limits in the EC which for your conference is of course the most important issue.

After many years of discussion the Council of Transport Ministers adopted in December 1984 a Directive on Weights and Dimensions of heavy goods vehicles (85/3).

This Directive 85/3 lays down maximum authorized weights and dimensions for international transport which should be allowed by all Member States. In other words no vehicle having dimensions or weights equal or lower than the ones mentioned in this Directive can be prohibited to circulate in the Community. But, for national transport, Member States can still allow higher weights and greater dimensions and it is even possible that two neighbouring countries allowing higher weights have transfrontier traffic at those higher weights. It is the intention of the European Commission to put forward proposals that will aim at a total harmonisation of national and international regulations within a few years. It is argued that in a free market after 1993 it is not acceptable if different regimes can still be applied.

Directive 85/3 has several provisions that should be adopted in the national legislation on different dates. As from 1.7.86 the maximum dimensions for all vehicles and the weights for 5 + 6 axle combinations (40 t) and the weights for non drive axles (10 t), tandem axle (11-20 t), and tri-axles (21-24t) of trailers and semi-trailers were implemented.

Also, in 1986 an important amendment to Directive 85/3 was adopted by the Council after very long discussions (Directive 86/360). It concerns the maximum authorized weight for the drive axle of 5/6 axle combinations. As from '92 Member States should allow 11.5 t for the weight of this drive axle. The UK and Ireland have a derogation till '99, the basis of that derogation was concern about the effect of the higher axle load on bridge structures rather than pavements.

Both operate a maximum drive axle weight of 10.5 tonnes. Agreement was very difficult to achieve because, in general the southern countries applied higher weights, around 12-13 tonnes, whilst UK, Ireland, Denmark, Holland and FRG applied weights around 10 tonnes. Also, industrial interests played an important role. Now only UK, Ireland and Denmark operate a lower axle weight. It seems that the interests of the haulage industry rather than protection of the road pavement have won the day in Germany and Holland.

When this decision was made in 1986 by the ministers of transport, a statement was adopted in which the Commission was charged to look into the possibility of reducing wear and tear on the roads through road friendly design of the vehicles in question and to submit a proposal in this field. The statement went on to say that in this context account should be taken of the following factors : tyres, tyre contact pressure, suspensions and damping.

The services of the Commission started an examination of this issue and concluded that further research was needed. To that end financial support was given to the Nantes FORCE project. However, pressure to secure standardised maximum weights for 2, 3 and 4 axle vehicles meant that progress could not wait for the results of this research.

In the Transport Council of March 1989 the following decisions were made on the basis of the Commission proposals:

- . weights of drive axle for 2, 3 and 4 axle vehicles, 11,5 tonnes ;
- . weights of tandem axles for motor vehicles (bogies), 11,5 to 18 or 19 tonnes (with air suspension or its equivalent and twin tyres) ;
- . weights of 2, 3 and 4 axle vehicles, single or forming part of a combination, depending on spacing of 18, 25 (26) and 32 tonnes.

For 3 axle rigids, 26 tonnes and 4 axle rigids, 32 tonnes provided the drive axle is fitted with twin tyres, air suspension or its equivalent.

2 + 2 axle combinations, 36 tonnes or 38 tonnes again provided the drive axle is equipped with twin tyres air suspension or its equivalent.

The maximum authorised weight for 4 axle vehicles goes in tandem with a "wheel base" formula limiting the weight to 5 tonnes per meter. As you may understand this condition was imposed in order to prevent concentrated loads on bridges.

It was stated that the Community would shortly fix standards for suspension systems that could be considered as equivalent to air suspension in order to avoid design restrictive regulations.

So it was taken into account in this decision that vehicles, if their drive axles were fitted with twin tyres and air suspension or equivalent, would cause less damage and therefore could be allowed an extra gross weight. The maximum weights of the drive axle itself was still 11.5 tonnes without conditions.

At the same time the request of 1986 was repeated in which the Commission was charged to develop proposals for road friendly design.

And so we have reached a position where a proposed Directive defined the parameter of the equivalence to air suspension for the drive axle and also stipulated that that axle be equipped with twin as opposed to wide (supersingle) tyres.

The substance of the proposal was:

- a) A technical definition of suspension that could be considered as equivalent to air suspension which would give the same advantages.

This definition was based on frequency and damping of the system with the criteria for equivalence being a maximum suspension frequency of 2 Hz and damping of at least 20 % of the critical damping.

- b) A prescription that tyre contact pressure must not be greater than 8 bar.

And most importantly

- c) A prescription by which all new vehicles that came into service from 1993 with a single drive axle of 11.5 tonnes, should be equipped with twin tyres, air suspension or its equivalent. If this was not the case then the weight would be restricted to 10.5 tonnes.

There was also a majority view that a tandem drive axle would also be considered as 'road friendly' provided the individual axle load was not more than 9.5 tonnes. This proposal was finally adopted at last December's Council of Ministers, as was the concensus view that the single 11.5 tonne drive axle would not require 'road friendly' suspensions or twin tyres.

Although UK and others agreed in working groups for 'road friendliness' criteria to apply to the single drive axle and to certain types of tandem axle - i.e. the walking beam tandem, delegates at the Council of Ministers were not prepared to make an issue provided the Commission was tasked to keep the situation under review. This stance secured the following phrases written into the eventual Directive:

"Whereas it will be necessary to make provision, at a later stage, for common standards for single axles and tandem axles in order to reduce damage to roads as far as possible."

The Directive also recognises the need to move away from the design restrictive criterion of air suspension or its equivalent to a performance standard that takes account of the true dynamic effect of the vehicle and its axle loads on the road pavement. Clearly, much more is to be done provided the political impetus is there to ensure the Commission progresses with this work. Manpower limitations and available technical expertise within the Commission will be stumbling blocks to such progress.

Let me quickly turn to the proposed future research programme of DG VII. An ambitious programme is being compiled and presented to Commissioners on all modes of transportation. For the roads and road vehicle sector there is a proposal put forward by the Forum of European National Highway Research Laboratories (comprising all EEC and EFTA road research laboratories).

The proposal recognises that some 40 billion ECUs are invested in the construction and maintenance of the European road network each year and so research is directed at technical advances to ensure a more effective investment of the huge financial resource.

The work would take due account of the activities of international organisations such as OECD, PIARC and IRF and would complement the USA's Strategic Highway Research Programme.

Part of that proposal would include research into the long-term performance of pavements and, of course, the effect of vehicle dynamics.

The roads engineering aspect of the total proposed research package is for some 60 MECU. I think you will agree that, with this type of effort, significant advances can be made in the field of design enhancement and standardisation. By the time of the conference I should have a view as to how successful DG VII's bid for a future research programme has been and what its likely content is.

Ladies and Gentlemen, I have tried to give you a global overview without too many figures on EC present and proposed regulations and am prepared to go into more details if you have any questions.

My message should be that a continuous dialogue between research and technical authorities is in all our best interests.

I think this conference is a very good example of a positive contribution to that dialogue.

Thank you for your attention.

