



**Economic and Social  
Council**

Distr.  
GENERAL

ECE/TRANS/WP.24/2008/8  
4 August 2008

Original: ENGLISH

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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

Working Party on Intermodal Transport and Logistics

Fiftieth session  
Geneva, 6-7 October 2008  
Item 11 of the provisional agenda

**MONITORING OF WEIGHTS AND DIMENSIONS OF LOADING UNITS IN  
INTERMODAL TRANSPORT**

Impact of “mega-trucks” on European roads and intermodal transport

Note by the secretariat\*

**I. MANDATE**

1. The present document is submitted in accordance with the mandate of the Working Party on Intermodal Transport and Logistics (WP.24) as defined in the annex to document ECE/TRANS/WP.24/117, para. (c), the objective of which is to monitor weights and dimensions of loading units used in intermodal transport in accordance with resolution No. 241 adopted by the Inland Transport Committee on 5 February 1993. The present document is also issued in accordance with the programme of work 2006-2010 of the Inland Transport Committee, adopted at its seventieth session, in 2008 (ECE/TRANS/166/Add.1, section 02.9 (d)).

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\* The UNECE Transport Division has submitted the present document after the official documentation deadline.

## **II. INFORMATION PROVIDED AND VIEWS EXPRESSED**

2. During the past two years, the Working Party considered the impact of “mega-trucks” with a maximum length of 25.5 m and gross vehicle weights of up to 60 tonnes on the European road network and on intermodal transport.

3. In October 2006, the Working Party reviewed the results of a study undertaken by the International Union of Combined Road/Rail Transport Companies (UIRR) on the economic impact of “Gigaliner trucks” on combined transport in Europe. Model calculations of UIRR showed that the increase in carrying capacity of such trucks of at least 50 per cent could reduce road transport costs in the order of 20-25 per cent and could result in a shift of up to 55 per cent of combined transport volumes towards road. This would hence lead to an estimated 24 per cent increase of road transport instead of reducing goods road traffic.

4. UIRR felt that such a development would severely affect regional and national transport policies aiming at modal shift and sustainable mobility. While the exact magnitude of such modal shift towards road transport might be questioned, the Working Party felt that the reported trend was unambiguous and had been confirmed by another study carried out by the German Studiengesellschaft für den kombinierten Verkehr (SGKV). Such trucks with a maximum length of 25.5 m and weights of up to 60 tonnes were at present allowed on a trial basis and on specific motorway sections only in Germany and the Netherlands. Their use also raised questions relating to road traffic safety and feasibility of road and terminal infrastructures that had not yet been studied carefully (ECE/TRANS/WP.24/113, para. 8 and Corr.1)).

5. In March 2007, the Working Party was informed about the continuation of these pilot or trials operations in Germany and the Netherlands with lorries with a maximum length of 25.5 m and weights of up to 60 tonnes on specific motorway sections in these countries. Preliminary results over relatively short distances in the Netherlands seemed to show encouraging results (reduction of 2 to 5 per cent of heavy goods vehicles on the road and only very minor shift of freight from intermodal transport to road). This has led to an extension of the trials to 300 lorries as of November 2007. First studies undertaken over longer distances in Germany, as also reflected in the above UIRR study, seemed to indicate however that the negative impact of such mega-trucks on intermodal transport could be more marked and could result in a reduction of intermodal transport in the order of 7 to 14 per cent and a corresponding increase in road transport. Whether such a modal shift towards road transport would then offset the reduced number of lorries plying the road network as a result of the use of longer and heavier units still remained to be investigated. It was also felt that the general use of such mega-trucks also raised questions relating to road traffic safety and the feasibility of road and terminal infrastructure, particularly in alpine and densely populated regions (ECE/TRANS/WP.24/115, paras. 36-38).

6. At its October 2007 session, the Working Party had an extensive discussion with industry representatives. It was informed about extensive trials that had been undertaken in the Netherlands, starting in 1999, with four truck-trailer combinations with a length of 25.25 m and total weights up to 60 tonnes. Trials of such EMS units (European Modular System) continued until 2006 with 162 such trucks. By the end of 2007, trials will be extended to allow an unlimited number of such trucks provided their maximum gross weight does not exceed 50 tonnes. These trials had shown that, in the Dutch context where 80 per cent of all freight transport operations takes place within a distance of 100 km, the operation of such trucks had

only a very insignificant impact on the modal split and on intermodal transport, but provided increased efficiency in the traditional road transport markets for light-weight goods over short distances. The now permissible 50 tonnes gross vehicle weight for such trucks in the Netherlands would generally not allow the transport of combinations of three 20 ft containers or of one 20 ft and one 40 ft container as this would lead to total gross weights of 71 and 56 tonnes respectively.

7. The Working Party also noted that three major studies and trials undertaken with “mega-trucks” in some German States had led to the creation of a working group studying their impact on road transport infrastructure, road traffic safety and the modal split. First results seemed to indicate that in addition to possible capacity and security problems with existing road bridges and tunnels, the use of such trucks would increase the severity of road traffic accidents. Furthermore, since the increased carrying capacity of such trucks was likely to lead to reduced transport costs, it was expected that freight traffic by road would increase, particularly on the German motorway network, to the detriment of national intermodal transport in the order of 30 per cent until 2015. On 10 October 2007, the Conference of German State (Länder) Ministers of Transport decided not to recommend the general introduction of mega-trucks (modular concept) in Germany. The present maximum permissible weight of trucks would not be modified due to safety and bridge capacity concerns. All current trials with “mega-trucks” in Germany would be completed as planned, but further trials would not be allowed.

8. At the same session, Austria and Switzerland voiced their concern as the allowance of “mega trucks” would not be in line with their transport policies that had to take account of the particular geographical situation in their countries.”

9. Representatives of the industry expressed different opinions. UIRR stressed once more its concerns about the general use of “mega trucks” on the European road network as this could lead, according to model calculations, to a 55 per cent decrease in intermodal transport and to a 24 per cent increase in goods road transport (see above). This view was shared by the “Groupement européen du transport combiné (GETC), who also stressed the high population and traffic density in Western European countries that was not comparable to those of the Nordic countries allowing “mega trucks” already since 1998.

10. The European Shippers’ Council (ESC) generally supported the introduction of “mega trucks” on the basis of the so-called modular concept, as this freight transport innovation would reduce transport costs, improve fuel efficiency and reduce road vehicle movements . The experiences in Sweden and the trials in the Netherlands did not show any evidence of a significant modal shift from rail and inland waterways to road transport. This view was shared by the the International Road Transport Union (IRU) which underlined in particular the possible savings in truck drivers as the capacity of two “mega-trucks” could replace three traditional truck loads.

11. The Internatinal Road Federation (IRF) felt that the increase in efficiency gains by allowing such a modular concept had to be balanced with the additional investments required for parking areas, curves, roundabouts, bridges and guardrails. Further studies were required, followed by more on-road tests. The European Association for Forwarding, Transport, Logistics and Customs Services (CLECAT) felt that the modular concept would introduce an additional transport solution that certainly had merits, provided that the conditions for its general and safe use in inter-urban transport, such as special training of drivers, were met.

12. Finally, the Working Party noted that the European Commission had initiated a study to review the options and consequences for a possible modification of vehicle weights and dimensions as permitted under EC Directive 96/53/EC. The study would be undertaken by a consortium of companies from Belgium, France, Germany and the Netherlands. This study would look at economic and environmental consequences, repercussions on infrastructure, safety and impact on other modes of transport. The study was expected to be completed in June 2008 (ECE/TRANS/WP.24/117, paras. 38-46).

13. At its March 2008 session, the Working Party was informed about the application of the so-called “modular concept” in Sweden. This concept, as referred to in European Directive 96/53/EC, is for the time being generally only allowed in Finland and Sweden. It allows lorry combinations with a maximum length of 25.25 m using existing vehicle types and loading units produced and permitted on the territory of the European Union, such as a lorry with a 7.82 m long loading unit towing a 13.6 m long semi-trailer or a 13.6 m long tractor and semi-trailer unit towing a 7.82 m long trailer. The modular concept can be applied on virtually all Swedish roads and 94 per cent of the Swedish road network is open to road vehicles with a maximum weight of up to 60 tonnes. The market share of such road vehicles for long distance transport lies in the order of 90 per cent.

14. Since its introduction in 1998, the modular concept had not encountered any technical, safety or economic difficulties and concerns in Sweden, possibly also due to the fact that it had not modified the previously applicable legislation on weight and dimensions in national road transport. Instead it was felt that the modular concept played a favourable role in the promotion of intermodal transport in Sweden as it allowed easy and cost-efficient transfer of intermodal transport units between road and rail (ECE/TRANS/WP.24/119, paras. 22-25; Informal WP.24 document No.3 (2008)).

### **III. NEW DEVELOPMENTS**

15. Since March 2008, the following new developments have been noted by the secretariat:

#### **Belgium**

16. A decision to undertake trials of so-called longer and heavier road vehicles (length of 25.25 m and maximum weight of 60 tonnes) has been taken at the federal level competent for approval of road vehicles and road traffic regulations. At present, the details of such trials are reviewed with the regional authorities responsible for road infrastructure in Belgium. Several operators are interested in carrying out such trials and it is expected that they will start by the end of 2008.

#### **Denmark**

17. As of November 2008, Denmark is planning to undertake trials of “mega-trucks” of a length of 25.25 m and a total weight up to 60 tonnes on the national road network.

## Germany

18. While on 10 October 2007, the Conference of German State (Länder) Ministers of Transport had recommended not to undertake further trials with “mega-trucks” in Germany (see above), some German States still continue such trials and may undertake additional trials.

## Netherlands

19. Trials with truck-trailer combinations with a length of 25.25 m and total weights up to 60 tonnes have been carried out for several years in the Netherlands (see above). Since November 2007, trucks up to a length of 25.25 m are allowed to use the Dutch road network as part of a so-called “experience phase”, but with a maximum gross weight of 50 tonnes only. Following first experiences and the results of a scientific study that concluded that no damage and particular no additional wear and tear is to be expected from the use of such trucks on road transport infrastructures and in particular on bridges, the permissible gross vehicle weight was increased to 60 tonnes as of May 2008.

## Norway

20. Since 1 June 2008, Norway allows the use of lorries with a length of up to 25.25m and 60 tonnes on a trial basis on a number of main roads. In principle, these trials should last for three years, but could be shorter, with a view to determining the economic, ecological and safety impact of such road transport operations in Norway.

## United Kingdom

21. Following a study that had looked at eight scenarios in vehicle dimensions and weights (up to a length of 34 m and a weight of 82 tonnes), the UK Department for Transport rejected in June 2008 proposals to introduce significantly longer and heavier vehicles on British roads.

22. The study had found that so-called “super-lorries” could lead to an increase in CO<sub>2</sub> emissions due to goods shifting from rail to road, create serious implications for the management of the road network – as the vehicles would be unsuitable for many roads and junctions – as well as introducing new safety risks. According to the report, there were also uncertainties about how efficiently such vehicles could be used, particularly when sourcing loads of sufficient size to make return journeys sustainable. Furthermore, their impact on the viability or existing rail freight services was uncertain. The report showed however that there could be worthwhile benefits from permitting a modest increase in the length of current articulated vehicles. The UK Department of Transport will pursue this further.

## European Commission

23. As already reported at the October 2007 session of the Working Party (see above), the European Commission had initiated a study to review the options and consequences for a possible modification of vehicle weights and dimensions as permitted under EC Directive 96/53/EC. First results of this study were presented in July 2008.

24. According to information available to the secretariat, the authors of the study came to the conclusion that there were no insurmountable problems in allowing so-called “mega-trucks” on the road network of the European Union countries. However, it was pointed out that the EU wide use of “mega-trucks” would be to the detriment of rail and inland water transport that were likely to lose market shares. The study also referred to the need for additional road infrastructure investments and highlighted possible safety risks of such lorries that would need to be addressed by technical requirements for these vehicles, by special training of drivers and by limiting use of these vehicles to specific sections of the road network and at certain hours of the day only. At the time of writing this document, the full study was not yet available. Also the views of the European Commission on this matter are not yet known.

#### **IV. FURTHER CONSIDERATIONS BY THE WORKING PARTY**

25. The Working Party may wish to exchange views on these and further national experiences and plans relating to the use of “mega-trucks” in UNECE member countries and their possible impact on the development of intermodal transport. Also further information on the above study commissioned by the European Commission should be available at the session together with information on follow-up action.

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