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2013 Theme: Weights and Dimensions of intermodal transport units in a pan-European context

Weights and Dimensions of intermodal transport units in a pan-European context

Note by the WP.24 informal group of experts and the secretariat

I. Mandate

1. This document has been prepared in line with the output/activities of cluster 6: Intermodal transport and logistics of the programme of work of the transport subprogramme for 2012–2013 (ECE/TRANS/2012/9 and Rev.1) as adopted by the Inland Transport Committee on 1 March 2012 and on 28 February 2013 respectively (ECE/TRANS/224 para. 93, ECE/TRANS/236, para. 72).

2. As decided by the Working Party at its last session and in line with the road map on future work and operation of the Working Party (ECE/TRANS/WP.24/131, para. 68; ECE/TRANS/WP.24/125, paras. 21 and 40–41), the theme for substantive discussion at the 2013 session of the Working Party will be: “Weights and dimensions of intermodal transport units in a pan-European context”.

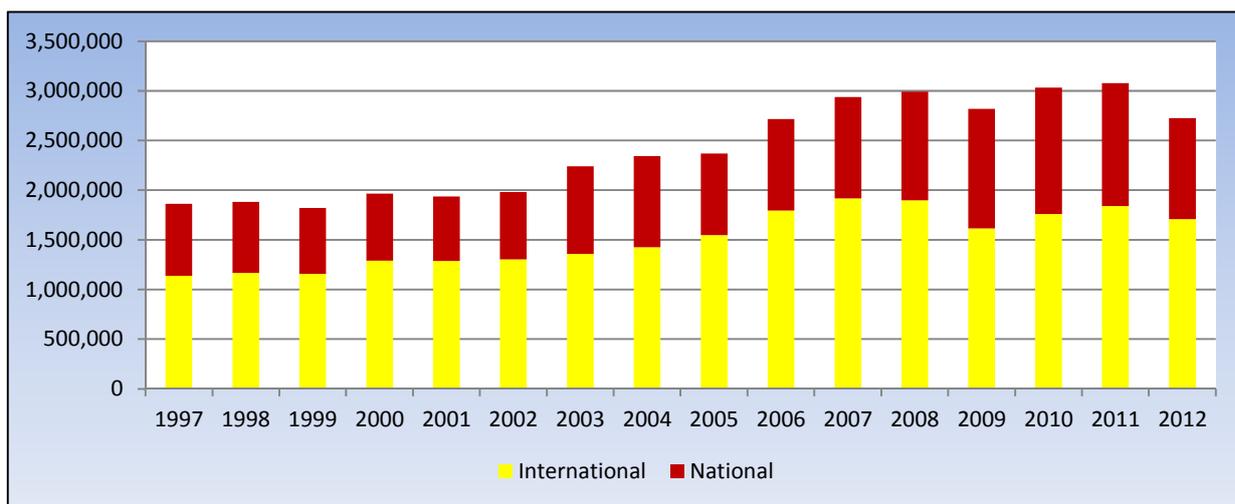
3. Taking account the considerations of the WP.24 informal group of experts at its session on 2 July 2013 at Paris, the secretariat has prepared the present document as a basis for discussion.

II. Intermodal transport operations in Europe

4. Intermodal transport, particularly European road-rail transport, has shown good developments during the past years, in spite of recent setbacks due to the economic slow-down, mainly in Southern Europe and the temporary closure of the Brenner and Gotthard

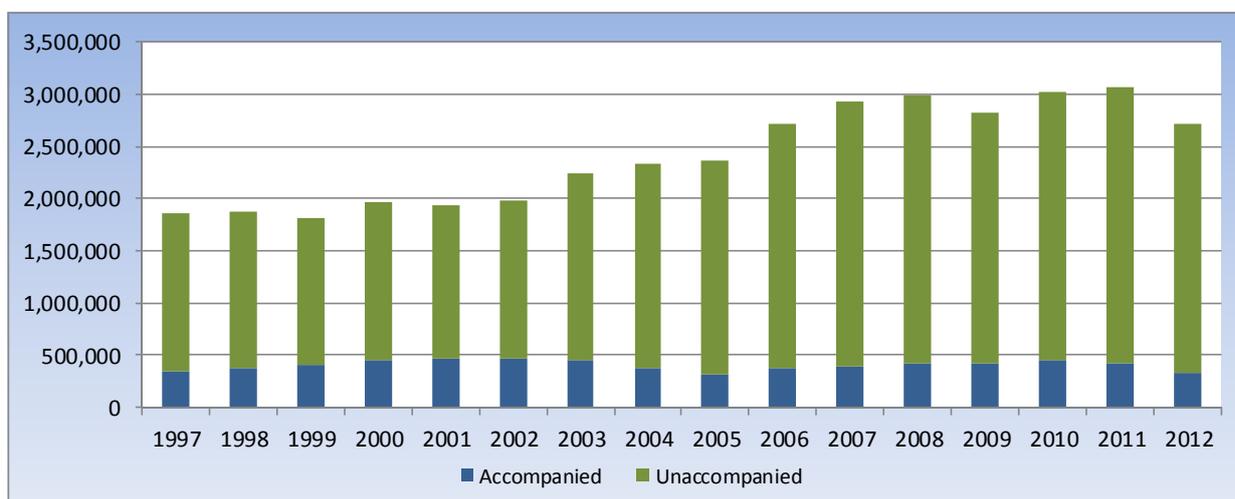
alpine rail passes in 2012. This has led, between 2011 and 2012, to a 11 per cent decline in intermodal traffic (in terms of consignments) for all International Union of Combined Road-Rail transport companies (UIRR). Accompanied transport even suffered a loss of 24 per cent. In terms of tonne-kilometers, this decline was less marked, but still in the order of 5 and 19 per cent for total and accompanied intermodal transport respectively (see also the graphs below).

Graph 1
Intermodal road/rail transport in Europe (UIRR companies)
National and international traffic (1997–2012)



Source: UIRR

Graph 2
Intermodal road/rail transport in Europe (UIRR companies)
Accompanied (RoLa) and unaccompanied traffic (1997–2012)



Source: UIRR

5. However it can be expected that intermodal transport will recover and continue its upward trend in the years to come, given the congested road networks, particular on important European North-South corridors, the opening of the Gotthard rail tunnel in 2016 and the continuing efforts of UNECE member countries to make European land transport

more sustainable — with less emissions (greenhouse gas, particulate matters, noise), less dependency on petroleum products and with less accidents.

III. Weights and dimensions for intra-European intermodal transport

6. Such developments are, however, not granted. European intermodal transport, particularly road/rail transport, is a complex system having relatively high fixed costs and requiring long time periods for the development and provision of rail infrastructure, rolling stock (specialized rail wagons), transshipment terminals and temporary storage facilities. Thus, frequent variations in transport demand and infrastructure capacities are difficult to cope with by intermodal transport operators. This compares with road transport where most of the fixed infrastructure costs are covered by the taxpayer and road transport equipment, including lorries, are usually written off in less than 10 years.

7. Similarly, frequent changes in the regulatory environment are detrimental to the development of intermodal transport. This holds particularly true for modifications in the weight and dimensions of intermodal transport units (containers, swap-bodies and lorries) that, in order to be effectively used, must be in line with all applicable technical parameters of railway wagons and rail infrastructure (loading gauge) as well as with the regulatory framework for road terminal haulages.

8. For intermodal transport using inland waterways, the width of locks and inland water vessels poses long-term restrictions to increases in the outer dimensions of containers and swap-bodies. This needs to be taken into account to enable an efficient transport of intermodal transport units on the still largely unexploited European inland waterway networks.

9. In view of these particularities, it is obvious that investment decisions in the physical assets of intermodal transport services will only be made if they can be calculated over their full lifecycle and can rely on predictable and stable long-term regulatory framework conditions.

10. Given the importance of road transport for the intra-European transport markets, the technical and operational characteristics of lorries are the benchmark that should determine the required dimensions and loading capacities of intermodal transport units: Anything that can be carried by road must also be possible to be carried by intermodal transport.

11. For more than two decades, and certainly since entry into force of EC Directive 96/53 of 25 July 1996 in the European Union (EU), the maximum loading capacities of road vehicles operating in international traffic in terms of dimensions have remained unchanged at:

- Length: 18.75 m (road trains) and 16.50 m (articulated vehicles)
- Width: 2.55 m (2.60 m for controlled temperatures)
- Height: 4.00 m.

12. In most other European UNECE member States, the same maximum dimensions apply for goods road vehicles, except for Scandinavia and several Eastern European countries where longer vehicles are allowed (between 20 and 25.25 m).¹

¹ For detailed information, see International Transport Forum: www.internationaltransportforum.org/

13. Similarly, in most UNECE member countries, the maximum authorized total weight for goods road vehicles is 40 tonnes. Exceptions apply again in Scandinavia (up to 60 tonnes) and in some Eastern European countries, such as the Russian Federation and Ukraine where only 38 tonnes is authorized.² Higher weight limits also apply in several countries for road terminal haulage as part of intermodal transport operations (max. 44 tonnes).³

14. In November 2012, the Working Party had noted that Directive 96/53/EC and Directive 97/27/EC (masses and dimensions of motor vehicles and their trailers – type approval) were under review by the competent bodies in the EU (ECE/TRANS/WP.24/131, paras. 60–63 and Corr.1).⁴

15. This review, triggered by the availability of new technologies as well as the need to reduce greenhouse gas emissions and the consumption of fossil fuels in transport, could possibly lead to greater permissible width and lengths of road motor vehicles and vehicle combinations. Greater lengths could be required in order to increase the aerodynamics and the road safety without modification of the loading length. Greater weight might be necessary to promote the installation of alternative propulsion systems without detriment to the payload. Whether aerodynamic devices on intermodal transport units would jeopardize their transport on railway waggons and on inland water vessels still needs to be studied and verified.

16. Other proposals that are presently discussed relate to the maximum loading length of semi-trailers that are currently fixed in most countries at 13.60 m. An increase in length of 12 cm would allow the transport of so-called 45 foot European square-edged swap-bodies/containers that provide a loading space for 33 Europallets (1.2 m x 0.8 m). Such European swap-bodies/containers could be transported easily by railways and handled in terminals. Their optimal stowage on European inland water vessels may however cause some operational problems due to their width.

17. Proposals aiming at the authorization of so-called “mega-trucks” with a length of 25.5 m and weights of up to 60 tonnes on the European road network have been discussed by the Working Party at previous sessions. Such truck-trailer combinations are permissible already for many years and under specific conditions in some UNECE member States, such as in Finland, Netherlands and Sweden. In other countries, such as Belgium and Germany trials are currently underway to evaluate, under very restrictive technical and operating conditions, the impact of such lorries on road infrastructure and road safety.

18. Some country representatives had voiced their concerns that, apart from road infrastructure and safety concerns, the permission of such “mega-trucks” would be detrimental to the development of intermodal transport and could lead to a massive shift from rail to road for long-distance transport, incompatible with sustainable transport policies in several European countries (ECE/TRANS/WP.24/131, paras. 60–63 and Corr.1).

19. In view of the above considerations, it seems justified to call for comprehensive studies on the compatibility with and the impact of greater widths and lengths of road motor vehicles and vehicle combinations on intermodal transport services before new regulations on modified loading capacities and/or aerodynamic devices are enacted. These measures

² For detailed information, see International Transport Forum: www.internationaltransportforum.org/

³ For details see, UNECE WP.24 website: www.unece.org/trans/wp24/welcome.html

⁴ Directive 97/27 has been replaced by Regulation 1230/2012 of 12 December 2012 implementing Regulation 661/2009 of the European Parliament and of the European Council on requirements for approval of motor vehicles and their trailers relating to weights and dimensions and amending Directive 2007/46 of the European Parliament and the European Council.

may reduce emissions and increase safety of road vehicles, but may not lead to a more sustainable transport system as a whole.

IV. European intermodal transport as part of global transport chains

20. Around 60 per cent of total European intermodal transport originates in and is destined for European maritime ports. This traffic is carried out predominantly with ISO 20 foot and 40 foot containers.

21. Thus, for European intermodal transport going overseas, the ISO standard and high-cube containers are the benchmark and are currently carried without difficulties on intermodal transport services involving road, rail and inland waterways. For these reasons, UNECE has rejected in 1992 the introduction of new ISO Series 2 containers with a length of 49 foot and a width of 8.6 foot.

22. Ninety per cent of the present ISO container fleet of 33 million TEU (twenty-foot equivalent units) consists of 20 foot and 40 foot standard containers. Around 530,000 TEU are 45 foot ISO high-cube containers that are mainly used in port hinterland traffic. Around 190,000 TEU are pallet-wide European containers for traffic from and to Ireland and the United Kingdom. All of these units can also be carried on intermodal transport services. Modifications in the maximum permissible weights and dimensions of ISO standard containers or major changes in the composition of the global container fleet towards longer and wider units are currently not foreseen.

23. In 2012, the Working Party had taken note of suggestions made by the “Groupement européen du transport combiné” (GETC) that a length of 53 foot (16.15 m) and a width of 8.6 foot (2.6 m) would be in line with the dimensions of most road trailers and land containers used in North America and Mexico and could also be an optimal length for European intermodal transport units. Maritime containers with these dimensions had been used in trans-Pacific services between Asia and the United States of America. In March 2013, these services have been stopped however due to lack of suitable export cargo from the United States.
