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Working Party on Combined Transport

INVENTORY OF EXISTING AGTC STANDARDS AND PARAMETERS

Note by the UN/ECE Secretariat

Note: Following a request by the Working Party at its thirty-fourth session (4-6 September 2000), the secretariat is publishing herewith its analysis on the above inventory as our official document.

A. MANDATE AND OBJECTIVE

The Inland Transport Committee, at its sixtieth session (ECE/TRANS/125, para. 101), endorsed the decision of the UN/ECE Working Party on Combined Transport (WP.24) to undertake a second inventory of technical and operational parameters of the AGTC network for the year 1997. In view of the decision of the UN/ECE Principal Working Party on Rail Transport (SC.2) that an inventory should, in future, be made for the AGTC and the AGC networks at the same time, the Committee asked for the inclusion of the data of AGC in the inventory.

The Working Party on Combined Transport approved a draft questionnaire (TRANS/1998/2) at its twenty-ninth session (TRANS/WP.24/79, para. 23), and asked the UN/ECE secretariat to include all relevant parameters in the AGC Agreement as well as the AGC network that are not part of the AGTC Agreement (TRANS/WP.24/79, para. 23). The questionnaire was sent to countries for completion in 1999.

The objective of this exercise is to update and complete the inventory of existing infrastructure standards for rail and combined transport in Europe, in order to allow comparison with the target values defined in the AGC and AGTC Agreements and to assess the developments in rail and terminal infrastructure and in the operational performance of international rail and combined transport services.

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B. EUROPEAN AGREEMENT ON IMPORTANT INTERNATIONAL COMBINED TRANSPORT LINES AND RELATED INSTALLATIONS (AGTC)

The European Agreement on Important International Combined Transport Lines and Related Installations (AGTC) provides the legal framework for the development of international combined transport infrastructure and services, particularly combined road/rail transport infrastructure and services, and for the improvement of their efficiency. Combined road/rail transport comprises the transport of containers, swap bodies and entire trucks on railway wagons to and from especially equipped terminals. The AGTC determines all important European railway lines used for international combined transport, identifies all terminals, border crossing points, ferry links and other installations important for international combined transport services, establishes internationally acceptable infrastructure standards for those lines and related combined transport installations, and prescribes internationally acceptable performance parameters of trains and combined transport installations and equipment. European States who become Contracting Parties to the AGTC, commit themselves to its implementation, including the construction or the upgrading of the railway lines and related combined transport installations in their territories, within the framework of their national programmes but without any time constraints.

The AGTC Agreement entered into force on 20 October 1993. To date the following European States are Contracting Parties to the Agreement: Austria; Belarus; Belgium; Bulgaria; Croatia; Czech Republic; Denmark; Finland; France; Georgia; Germany; Greece; Hungary; Italy; Luxembourg; Netherlands; Norway; Poland; Portugal; Romania; Russian Federation; Slovakia; Slovenia; Switzerland; Turkey.

Permanently updated information on the provisions and the status of the AGTC Agreement is available on the relevant UN/ECE web site (www.unece.org/trans/new_tir/conventions/list.htm).

C. EUROPEAN AGREEMENT ON MAIN INTERNATIONAL RAILWAY LINES (AGC)

The European Agreement on Main International Railway Lines (AGC) similarly provides the international legal framework for the development of a coherent international rail network in Europe with a view to the facilitation and development of international rail traffic throughout the continent. The AGC identifies the rail lines of major international importance, the **E rail network**, and defines the infrastructure parameters to which they should conform. It defines infrastructure parameters for two categories of lines: those already existing and those to be newly constructed. The latter are again divided into lines for goods and passenger traffic and others for passenger traffic only. The AGC is also revised whenever necessary to take due account of political and transport changes in Europe. In becoming Contracting Parties to the AGC, European States commit themselves to its implementation, including the construction or the upgrading of the E-rail lines in their territories, within the framework of their national programmes but without any time constraints.

After its entry into force in 1989, the following European States have so far become Contracting Parties to the Agreement: Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Croatia; Czech Republic; France; Germany; Greece; Hungary; Italy; Luxembourg; Poland; Portugal; Republic of Moldova; Romania; Russian Federation; Slovakia; Slovenia; The former Yugoslav Republic of Macedonia; Turkey; Ukraine; Yugoslavia.

Permanently updated information on the provisions and the status of the AGC Agreement is available on the relevant UN/ECE web site (www.unece.org/trans/new_tir/conventions/list.htm).

D. INVENTORY OF EXISTING AGTC AND AGC STANDARDS AND PARAMETERS

On the basis of the information provided by UN/ECE member countries, the secretariat has prepared in the present document a synthesis of the present technical and operational standards and parameters for rail and combined road/rail transport in Europe as compared with the minimum standards laid down in the AGC and AGTC Agreements.

As of 31 December 1999 the following 24 UN/ECE member countries have transmitted total or partially completed questionnaires to the secretariat: Austria, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Norway, Poland, Republic of Moldova, Russian Federation, Slovakia, Slovenia, Switzerland, Turkey and The former Yugoslav Republic of Macedonia.

For those countries that have not updated the information, the tables reflect the situation in 1992. Those countries are the Netherlands, Portugal, Romania, Spain and the United Kingdom.

The information provided by these 29 countries is set out in the annex to this document.

The following sections of this report summarize the information received from UN/ECE member countries, compare it with the relevant minimum parameters prescribed in the AGC and AGTC Agreements and state the developments achieved since the previous inventory.

I. Railway lines: Infrastructure parameters

Number of tracks

The target value for new lines in both Agreements is two tracks. Although there are no minimum requirements for the number of tracks to be provided on **existing** lines, it is noted that it will normally only be possible to provide high capacity and precise timing of operation on lines with at least two tracks.

Although there have been significant improvements since the 1992 inventory, single-track sections are still present throughout both networks, particularly in the peripheral regions of the continent. As long as traffic demand is not high, this should not represent an obstacle to efficient rail operations, although the question could be raised about the actual relevance of these sections for international rail traffic. Should this be the case, these single-track lines would need major upgrading efforts in the future, as in many cases these sections also present low values in many other parameters.

Loading gauge

The minimum standards in both Agreements are UIC B for existing lines and UIC C for new lines. The vast majority of the network meets the UIC B standard, which allows for the transport of most containers (ISO containers 2.44 m wide and 2.90 m high), swap bodies (up to 2.5 m wide and 2.6 m high) and semi-trailers on recess wagons, but not for the transport of road goods vehicles and road trains. As the cost of upgrading existing lines to meet UIC C standards is extremely high, this will represent a major constraint for the development of combined transport (and particularly for Ro-La operations) in certain regions.

Minimum distance between track centres

Most of the countries have reached the AGC-AGTC 4-m standard or are close to it (3.5 m at least).

Nominal minimum speed

AGC and AGTC differ in this area. Whereas the AGTC minimum value for existing lines is 100 km/h, the AGC requests 160 km/h. For new lines, AGTC sets a target value of 120 km/h whereas the AGC minimum value is 250 km/h for mixed lines and 300 km/h for lines reserved for passenger trains.

Clearly, the AGC standards are far away from the existing situation. The 300 km/h is only met by some of the newly built high speed lines (which have not been reported, as the inventory implicitly focus on freight operations). Even the 250 km/h is too ambitious compared to current conditions. Furthermore, the 160-km/h minimum for existing lines is met only by an extremely reduced number of sections. In the light of economic and environmental costs usually associated with such nominal speeds, these target values should probably be revised and reduced. It may also be worth recalling that other variables (and particularly efficient traffic managements, schemes, relating also to terminals and border-crossing points)

probably have a more important impact on the quality of freight transport services than the achievement of high nominal speeds on particular sections of the network.

Significant sections of the rail networks continue failing to meet even the more modest AGTC requirements (100 km/h for existing lines and 120 km/h for new lines), particularly in the Balkans. Germany seems to have the highest possible operating speed for combined transport trains and all of its lines meet the AGTC standard, with many lines capable of operating at higher speeds, up to 140, 160 and even 200 km/h.

Authorized mass per axle

The AGC and AGTC minimum standards for existing lines are generally met, with a few exceptions.

Authorized mass per linear metre

The AGC and AGTC minimum standard for existing and new lines (8 t/m) is generally met, with few exceptions (7.2 t/m in Denmark, Poland and Slovenia, and slightly lower values for some lines in Hungary and Norway).

Maximum gradient

Maximum values are set by the AGC Agreement only, and they refer to new lines, as the modification of the gradient for an existing line is virtually impossible.

Minimum platform length in principal stations

Most of the countries fail to meet the AGC/AGTC minimum of 400 m, of platform length on some lines.

Siding length

The AGC/AGTC minimum standard is 750 m. This parameter is significant only for goods trains. Many countries fall short of this value, at least on some sections, in some cases with quite low values (less than two-thirds of the target in some lines in Croatia, FYROM, Italy and Slovenia).

Capacity bottlenecks on railway lines

Bottlenecks seem to be a particular problem on some busy sections in countries with high traffic volumes, including Belgium, Denmark, France, Germany, Italy, Luxembourg and Poland.

Level crossings

The AGC aims at a progressive elimination of existing level crossings. All the countries report the existence of level crossings on their networks.

II. Performance parameters of combined transport trains

Targets for these parameters refer to combined transport only and are subsequently set in the AGTC Agreement.

Maximum authorized length of trains

Many countries report maximum authorized lengths that are lower than the AGTC standard of 750 m, at least on some sections. In most cases, values are close to or lower than 500 m (two-thirds of the target value).

Maximum authorized weight of trains

Maximum train weight falls short of the AGTC minimum standard (1500 t) in most countries, at least for some sections of the network.

Maximum authorized axle load of wagon

All the countries that report information on this parameter meet or exceed the AGTC minimum standard of 20 tonnes. Most countries are also able to meet the 22.5 tonnes on appropriate routes (at a speed of 100 km/h).

Operating speed

The AGTC target value (120 km/h) is met by four countries only: Belarus, Denmark, Hungary and Switzerland. The operating speed is still as low as one half of the target value in some cases.

Priority rating

In accordance with the AGTC standard, high priority is given to combined transport trains in most countries, although lower priority (from medium to low) is reported on some sections in Denmark, France and Croatia.

Direct block trains or wagon groups

Block trains or wagon groups are operated on most lines, with some exceptions on lines in Croatia, Greece, Russian Federation and Switzerland.

III. Minimum Standards for Combined Transport Installations Terminals

Average train formation time

The AGTC target value (maximum 60 minutes) is generally met. However, six countries are reporting extremely long formation times for some terminals (ranging from 90 to 300 minutes).

Average waiting time for lorries

The AGTC target value (maximum 20 minutes) is generally met, and even reduced to 10 minutes in some cases.

Accessibility by road

Virtually all the countries report that their terminals have good accessibility by road.

Accessibility by rail

All the countries report that their terminals offer satisfactory or good accessibility by rail.

IV. Border Crossing Points

Average length of stop

A relevant number of border-crossing points do not meet the AGTC target value of 30 minutes. Longer stopping times may refer to ferry connections (Denmark), congestion and organizational problems (France/Spain), Customs and police (Turkey) or to unspecified reasons, probably related to a mix of rail operations (change of engine, brake testing, inspection of wagons, etc.) and Customs, police and phyto-sanitary controls.

V. Axle Gauge Interchange Stations

Duration of interchange

Reported average interchange times range from 20 to 80 minutes for Belarus/Poland (reported by Belarus) to 180 minutes for France/Spain (saturation is mentioned here as a problem), 240 minutes for Hungary/Ukraine, 360 to 480 minutes for Finland/Russian Federation (depending on the number of wagons) and up to 620 minutes for Ukraine/Poland.

VI. Ferry Links/Ports

Average duration of Ro-Ro operation

Data on ferry links have been reported by 7 countries. Ro-Ro operations take from 20 to 140 minutes (France and Belgium to United Kingdom) to 720 minutes (loading and unloading in Helsinki). In most cases timetables for ferries and railways have been coordinated.

VII. Progress made in the 1992-1997 period

The situation in 1997 reflects little progress compared with the former inventory, which referred to 1992. Modest improvements generally refer to nominal speed on some sections (particularly in Poland, Hungary and more limited on some lines in Denmark, Finland and Germany). The situation is more mixed for bottlenecks: while improvements are reported on some sections, new bottlenecks seem to have emerged on others.

With some exceptions, the lack of significant progress is most evident in operating conditions both at the borders, ferry links and terminals, which seriously erodes the competitiveness of freight transport by rail in general and particularly of combined transport. This raises once more the need for more substantial progress in the way towards interoperability in the region.

The inventory also reveals the existence of a good number of railway lines with poor parameters, that cannot offer the level of service envisaged in the AGC and AGTC Agreements. As prospects for upgrading are most uncertain for many of these lines, even in the long term, and as its actual international traffic seems to be extremely low, the Working Parties may wish to consider whether a revision of the Agreements would be convenient with a view to streamlining the existing network and to focusing attention on those lines that are concentrating most of the international traffic.

In many cases, countries have now sent more complete information than in 1992, although the opposite has also occurred. As a significant number of countries have not sent the information in full yet, the Working Parties WP.24 and SC.2 should consider contacting those countries again in order to get the lacking data. This effort would greatly facilitate the completion of the "rail census 2000" that is currently being prepared by the UN/ECE.

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EXPLANATORY NOTES

For an explanation of loading gauge code numbers used by some countries (i.e. Germany and Italy) it should be noted that:

UIC B = P 45, C 45;	P = Pocket-wagons
UIC C1= P 102, C102;	C = Containers/Swap-bodies

The higher the code number, the closer it is to loading gauge UIC C1.

EXPLANATION OF FOOTNOTES IN THE TABLES

- a/ Railway network as stipulated in the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC Agreement of 1 February 1991), and the European Agreement on Main International Railway Lines (AGC Agreement of 31 May 1985) and AGC, annex I.
- b/ See AGTC, annex I.
- c/ AGC and AGTC lines in a country have been divided into sections (parts of lines) which have the same or nearly the same infrastructure parameters (for example: Belgium: C-E 15 may be separated into two sections: “(Roosendaal-) Antwerpen-Bruxelles” and Bruxelles - Quévy (- Feignies”).
- d/ Target values as contained in the AGC/AGTC given in the table refer to existing lines only. For new lines, AGC/AGTC stipulates loading gauge C. In filling in the tables the actual values have been inserted indicating the value of the most restrictive parameters.
- e/ 4.0 m for existing lines; 4.2 m for new lines.
- f/ 120 km/h is the AGTC target value for existing and new lines.
- g/ 160 km/h is the AGC minimum value for existing lines. For new lines, minimum speeds are 300 km/h (for passenger traffic only) or 250 km/h (for passenger and goods traffic).
- h/ Specified only in AGC.
- i/ Target values for existing and new lines:
For wagons \leq 100 km/h: 22.5 t; for wagons \leq 120 km/h: 20 t.
For wagons \leq 140 km/h: AGC sets a maximum of 18 t.
- j/ Specified only in AGC.
- k/ As a recommendation for new lines only in the AGTC. AGC establishes 35 mm/m for new lines dedicated exclusively to passenger traffic.
- l/ “never”, “seldom”, “occasionally”, “often” or “always”.

- m/ 22.5 t at 100km/h (target value).
- n/ Trains of combined transport shall be rated as those with highest priority (AGTC, annex IV, para.7).
- o/ Use of direct trains or transport by wagon groups (AGTC, annex IV, para.13).
- p/ Terminal(s), border crossing point(s), axle gauge interchange station(s) or ferry links/ports as contained in the AGTC, annex II.
- q/ Time from the latest time of acceptance of goods to the departure of trains, and from the arrival of trains to the availability of wagons ready for the unloading of loading units (containers, swap-bodies, etc.).
- r/ Waiting periods for road vehicles delivering or collecting loading units shall be as short as possible.
- s/ “good”, “satisfactory”, or “not satisfactory”.
- t/ Description of bottlenecks or problems (AGTC, annex IV, para. 10-12, 14-17).
- u/ The AGTC Agreement foresees no stop at borders, if possible (AGTC, annex IV, para.14). No stop required: “o”
- v/ Quick loading and unloading of ferry boats and storage of loading units/wagons (if possible not more than one hour).

**EXPLANATION OF SYMBOLS AND
ABBREVIATIONS EMPLOYED IN THE TABLES**

...	=	Not available
I.	=	Magnitude zero
-	=	Not applicable
km/h	=	Kilometre-hour
t	=	Tonne
m	=	Metre
min.	=	Minimum
