Submitted by the expert from Hungary

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agenda item 2(a))

Comments to the EC proposal ECE/TRANS/WP.29/GRSG/2014/22

1. The EC proposal deals with the baggage compartments in buses. It suggests a short, apparently simple amendment; however it touches an important, essential issue.

2. The volume and the location of the masses – including the baggage masses as well – strongly influences many basic parameters of buses like total mass in running order, axle loads, CG position, etc. And what is more, many important features of buses (braking, steering, stability, etc.) which are subjects of UN Regulations, and the bus approvals are strongly depending on these basic bus parameters.

Some technical arguments for consideration when discussing the EC proposal:

(a) When preparing the first bus regulation (UN Regulation No. 36) in GRSG, long discussion took place about the passenger and baggage masses. Anthropometric statistics were collected about passenger masses, baggage measurements (volume and mass) were made on different bus categories. Recognising the very wide scatters and the fact that there are no "good" values for every situation, but on the other hand, commonly agreed figures are needed, the existing mass values were finally accepted, as compromise.

(b) This agreement was based on:

(i) 68 kg/passenger, considering men, women and children as whole population for city buses (Class I.).

(ii) 71 kg/passenger, for local, interurban and tourist coaches (Class II. and III.). The extra 3 kg represents the handbags, which can be placed on the baggage racks in the passenger compartment. (The specification of the measurement of baggage rack volume was not important, so it is not defined).

(iii) 100 kg/m^3 for the specific baggage mass, which is located in the baggage compartment (generally under the floor)

(c) Today many coaches are running on the roads with ski boxes or baggage boxes fixed on the rear-wall. These boxes are after sale units, not standardised, different in size and arrangement (see Fig.1 and Fig.2), and they are not on the coach when the type is approved. There is no specified ski mass and baggage mass for this reason. The coach manufacturers may provide – for the request of the buyer – fixing points on the rear-wall for structural strength point of view, but being not responsible for the additional effects of the box. Examples are shown on Fig.4.

(d) The rear-wall boxes influence a lot of basic parameters of the approval, like:

(i) increasing the total length of the vehicle and with the increasing of the rear overhang possibly effecting the turning behaviour.

(ii) increasing the total mass (in running order)

(iii) changing the axle load distribution and increasing the rear axle load. This effect depends not only on the mass of the box, but also on the length of the rear overhang.

(iv) changing the position of the rear-wall window, if it is counted as an emergency exit (see Fig.1. The rear-wall window is a very useful, important emergency exit).

(v) possibly reducing the vision field of the rear-wall camera monitor (CM) system, if any (see Fig.3)

etc.

(e) These effects cannot be controlled by the bus manufacturers and Technical Services (Competent Authorities) when approving a bus type on the basis of UN Regulation.

(f) At present, the installation and use of the rear-wall boxes – with the belonging requirements and the authorization – belongs to the competence of the national authorities. So the problem is handled on national level, in the individual countries.

(g) Many long distance and tourist coaches – having rear-wall boxes – often cross the borders between different countries, which can raise the technical issues discussed above. This unsolved, existing, real problem is behind the EC proposal, being interesting enough to think about it, but not in connection with Regulation No. 107.

(h) The EC proposal – as it stands now – is not appropriate for this purpose; therefore **Hungary is not supporting this proposal.** Further considerations are needed.

a) b)

Fig.1. Rear-wall boxes

a)

Fig.2. Different rear-wall boxes

b)

Fig.3. CM and box on the rear-wall

a) after sale solution

b) industrial solution

Fig.4. Rear-wall box fixing points