

Comments and proposal to improve the unified bus regulation R.107/Rev.1.

(Bodywork as a separate technical unit)

Presented by Hungary

1. The unified new bus regulation – which is almost mirror copy of the 2001/85/EC directive – allows to consider the bodywork as a separate technical unit (STU) and approve it separately, independently from a chassis. It also allows to approve a “vehicle fitted with a bodywork already approved as a STU”.
2. This idea and practice follows the widely used concept in case of independent vehicle parts and components (like engine, seat, headlamp, horn, etc.) which may be and are approved separately and only their installation is checked and approved again. The installation means some simple mechanical connections (bolts, rubber hinged elements, tubing, etc.)
3. The bodywork is not an independent STU. The installation of a bodywork onto a chassis is much more than using some bolts or other connecting and clamping elements. Even if the bodywork has a pre-designed structure, shape, configuration and out look.
4. The different chassis types have different main constructional parameters, geometry, structural arrangements, masses and CG position, etc., therefore to adapt a bodywork construction (design) to a given chassis means to modify and reconstruct a lot of things covered by different requirements of the regulation R.107/Rev.1. On the other hand, a chassis type is not well defined unit, because its final technical specification depends on the agreement between the chassis manufacturer and body builder (it is part of the delivery contract) The same chassis type may have different realizations for different body builders.
5. The definition “Vehicle”, “Bodywork”, “Separate technical units” and “Vehicle type”, “Bodywork type”, “Approval of a vehicle or a separate technical unit” are not clear, not unambiguous, or it may be said: confusing in the aspect of approval in the Regulation R.107/Rev.1.
6. Adopting a bodywork design to a certain chassis, the following parameters, characteristics and constructional features are questionable, which have importance regarding to the vehicle approval:
 - passenger capacity: number of seats and standees
 - masses: curb mass and belonging axle loads
total mass and belonging axle loads
 - position of centre of gravity (CG): both in empty and loaded position
 - number and location of exits
 - geometry: step heights and arrangements, staircases
gangway above axles (width, slope)
seat spacing and arrangement (space for feet, free heights above seats)
access to doors and exits
availability of hand rails hand holds

- protection against fire risk: engine compartment and its isolation, fuel filler holes, electrical wiring, etc.
 - stability test: it is impossible to do it with the bodywork as a STU.
 - strength of the superstructure: it is impossible to test it on a STU.
 - manoeuvrability: it is impossible to test it on a STU.
 - retractable steps, technical requirements
 - ramps and lifts for wheelchairs, technical requirements
7. This list above touches at least 75% of the paragraphs in Reg.107/Rev.1. and covers two kind of problems:
- constructional features which may not be tested on a bodywork as a STU (lateral stability, strength of the superstructure, manoeuvrability, masses and CG position, ramps and lifts, etc.)
 - constructional features and parameters which could be (must be) changed when a “dummy bodywork” is built onto a chassis (geometry, passenger capacity, protection against fire, number, location and dimensions of exits, etc.)
8. What is – or could be – the problem?
- A (small) body builder builds up a complete “dummy bodywork” – without a chassis – and gets the approval for it. (Having the licence of a famous, well known body construction of a big bus manufacturer it is much easier to get it, mainly when some bus types of this body construction developed by the big bus manufacturer have been already approved)
 - The (small) body builder adopts this bodywork to one or more different chassis, making the necessary constructional modifications, adjustments. Having the technical specification of the chassis and the earlier approval of the bodywork, goes to the authority for the approval of the complete bus.
 - The authority theoretically has two possibilities:
 - a) to approve the new vehicle without any further tests and examinations. But really this is impossible because of the problems listed in para.6 and 7.
 - b) to make all the necessary tests and technical investigations according to Reg.107/Rev.1. But in this case the earlier approval of the bodywork as a STU is needless, unnecessary.

9. Proposal.

Delete the possibility of the approval of a bodywork from Reg.107/Rev.1.

If GRSG accepts this general concept, Hungary offers a detailed proposal, how and were to modify the text of Reg.107/Rev.1., how to modify the individual paragraphs and Annexes.