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### Economic Commission for Europe

#### Inland Transport Committee

#### World Forum for Harmonization of Vehicle Regulations

#### Working Party on General Safety Provisions

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Item 10 of the provisional agenda

#### Regulation No. 122 (Heating Systems)

### Proposal for amendment to Regulation No. 122

#### Submitted by the expert from the European Association of Automobile Suppliers \*

The text reproduced below was prepared by the expert from the European Association of Automobile Suppliers (CLEPA) to allow the use of the heating system of a trailer (mostly caravans) while the latter is in motion. It is based on document GRSG-98-07 and subsequent discussions at the ninety-eighth session of the Working Party on General Safety Provisions (GRSG). The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

## I. Proposal

*Annex 8*, amend to read:

### “Safety requirements for LPG combustion heaters and LPG heating systems

1. LPG heating systems for road use in motor vehicles **and their trailers**
- 1.1. If an LPG heating system in a motor vehicle **or trailer** can also be used when the vehicle is in motion, the LPG combustion heater and its supply system shall comply with the following requirements:
  - 1.1.1. The LPG combustion heater shall comply with the requirements of the harmonized standard EN 624:**2010** (Specifications for dedicated LPG appliances. Room sealed LPG space heating equipment for installation in vehicles and boats).
  - 1.1.2. In cases of a permanently installed LPG container all components of the system that are in contact with LPG in the liquid phase (all components from the filling unit to the vapouriser/pressure regulator) and the associated liquid phase installation shall comply with the technical requirements of Regulation No. 67, Parts I and II and Annexes 3 to 10, 13 and 15 to 17. **Additionally, the installation of a LPG container in vehicles of category O shall comply with the technical requirements of the harmonized standard EN 1949:2010.**
  - 1.1.3 The gaseous phase installation of the LPG heating system in a vehicle shall comply with the requirements of the harmonized standard EN 1949: **2010**. 1/ (Specifications for the installation of LPG systems for habitation purposes in leisure accommodation vehicles and **accommodation purposes** in ~~road~~ other vehicles).
  - 1.1.4. The LPG supply system shall be so designed that the LPG is supplied with the required pressure and in the correct phase for the installed LPG combustion heater. It is permitted to withdraw LPG from the permanently installed LPG container **simultaneously** in either gaseous or liquid phase.
  - 1.1.5. The liquid outlet of the permanently installed LPG container to supply LPG to the heater shall be provided with a remotely controlled service valve with excess flow valve as required in paragraph 17.6.1.1. of Regulation No. 67. The remotely controlled service valve with excess flow valve shall be controlled such that it is automatically closed within five seconds of the vehicle engine stopping, irrespective of the position of the ignition switch. If within these five seconds the on-switch of the heater or LPG supply system is activated, the heating system may stay in operation. The heating can always be restarted.
  - 1.1.6. If the LPG is supplied in the gaseous phase from the permanently installed LPG container or separate portable LPG cylinder(s), appropriate provisions shall be taken to ensure that:
    - 1.1.6.1. no liquid LPG can enter the pressure regulator or LPG combustion heater. A separator may be used, and

- 1.1.6.2. no uncontrolled release due to an accidental disconnection can occur. Means shall be provided to stop the flow of LPG by installing a device directly after or in a cylinder or container mounted regulator ~~or~~. **If** the regulator is mounted remote from the cylinder or container, a device shall be installed directly before the hose or pipe from the cylinder or container (**high pressure protection**) and an additional device shall be installed in, or after the regulator- **if needed for protecting the low pressure part of the installation (low pressure protection)**.
- 1.1.7. If the LPG is supplied in liquid phase, the vaporiser and pressure-regulator unit shall be heated as appropriate by a suitable heat source.
- 1.1.8. In motor vehicles that use LPG in their propulsion system, the LPG combustion heater may be connected to the same permanently installed LPG container that supplies LPG to the engine, provided that the safety requirements of the propulsion system are met. If a separate LPG container is used for heating, this container shall be provided with its own filling unit.
- 2. LPG heating systems for stationary use only in motor vehicles and their trailers
- 2.1. The LPG-combustion heater and its supply system of an LPG heating system that is intended to be used only when the vehicle is not in motion, shall comply with the following requirements:
  - 2.1.1. Permanent labels shall be attached on the compartment where the portable LPG cylinders are stored and in close proximity to the control device for the heating system, giving instructions that the LPG heater shall not be in operation and that the valve of the portable LPG cylinder shall be closed when the vehicle is in motion.
  - 2.1.2. The LPG combustion heater shall comply with the requirements of paragraph 1.1.1. above.
  - 2.1.3. The gaseous phase installation of the LPG heating system shall comply with the requirements of paragraph 1.1.3. above."

## II. Justification

- 1. There has been uncertainty for some type approval bodies regarding the possibility to type approve a trailer (mostly caravans) with a heating system for heating while the vehicle is in motion.
- 2. It was assumed when writing the Regulation that since there are no passengers in a caravan while driving there is also no heating requirement. This was not an incorrect assumption because there is a need for heating the caravan in for instance colder countries to avoid freezing of liquids (water, waste water) and to ensure a warm home when reaching the final destination after a long drive. This is also true for truck-trailers carrying goods which have to be kept at a special temperature (e.g. flowers) for which there is a strong need for heating while in motion.
- 3. Therefore there needs to be the possibility to type approve a trailer (caravan or trailer for temperature sensible goods) for a heating system for heating while in motion.