Informal document No. **GRRF-60-10**
(60th GRRF, 18-22 September 2006
agenda item 5.3.)

UNECE Regulation No. 64: Homologation test of "run-flat warning systems" (RFWS) for "run-flat" tyres (RF)

Clarification of
ECE/TRANS/WP.29/GRRF/2006/23

Summary of what is necessary

- The “Run-Flat-Warning-System” associated with a “Run-Flat” tyre must have an accuracy and a response time such that the user is alerted well before the tyre pressure is down to 70 kPa, whatever the vehicle speed.
- Reason : At speeds allowed on Europe highways and turnpikes, a punctured “Run-Flat” tyre with no air may fail within a few minutes.
- The homologation test of “RFWS” must take this into account to assure the users’ safety, as required by EU/ DIR-2001/95

ETRTO expressed concerns and has submitted for the September GRRF meeting an Amendment to Regulation 64 (ECE/TRANS/WP.29/GRRF/2006/23) explaining its position.

1- Elements of UK Amendments
Inf. GRRF-59-20 and ECE/TRANS/WP.29/2002/17/Rev.6

- **Major concerns for ETRTO :**
  - **20 min delay to alert that P= 70 kPa** (*should be shorter*)
  - **20 min to alert of a system malfunction** (*should be shorter*)
  - freedom of choice (***?***) of test speed within 20 -120 km/h *(needs to be reconsidered)*

As a practical consequence, a RFWS homologated along UK Amendment might alert of a real leak only after more than 30 min …

… when the tyre is already completely flat and has exhausted its potential (*)

(*) the Rule would then be useless

Questions

What may happen:

- if the user's speed is much larger than the test speed for homologation ?
- if the pressure change is not a step variation like in the test ?
- if the test speed is arbitrarily chosen within 20-120 km/h ?
- if ambient conditions are not as favourable as the tests ?

Reported Facts

We have found reported facts of our concern in the files of USA-DOT-NHTSA- Office of Defects Investigations (*as of July 20th, 2006*)

- **Out of 21 cases :**
  - **15 cases without alert, whereas the tyre was already flat**
- **NHTSA is inquiring.**

2- CONCLUSION

ETRTO's proposal has the aim to improve the regulatory requirements for the RFWS in order to be efficient

ETRTO proposes

1. **Two alternative possibilities of test principle :**

   – **follow a method described in ISO 21750 :**
   "Produce on one tyre a **gradual pressure loss between 10 kPa/min and 20 kPa/min** and **check** …. that **the system delivers an alert at the latest for a pressure drop of 100 kPa**".

   – **modify the inf. GRRF-59-20 procedure :**
   "**deflate** the tyre by **100 kPa under the recommended pressure**, and **check that the RFWS alert delay is ≤ 5 min**"

2. **Specification of test at two speed levels (*) :**
   - **"between 25 and 70 km/h", and**
   - **"at a speed equal to or higher than 130 km/h"**

3. **Delay to detect a RFWS malfunction :**
   - **5 minutes** (instead of 20 min)

(*) ISO 21750 for TPMS states only : "… driving at a speed exceeding 25 km/h …" ; but RFWS must imperatively be tested at high speed because of RF tyres performances