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**ECE R13 amendments reflecting the state of art**

Dear Mr. Gunneriusson,

With great satisfaction I have noticed in document "ACV-05-07 Rev 1" that the terminology of "contacts for voltage supply" and "contacts for voltage return" (see old document ACV-04-02) was given up. It makes really no sense to call the same line at the beginning "supply line" and at the end "return line" without defining which part of this line should be called the supply part and which the return part (and why?).

The intention of this writing is not to give you a feedback on document "ACV-05-07 Rev 1" but to remind you of two unsolved problems which are related to the R13-updating work of the ACV ad hoc group.

Although I have addressed my concerns verbally and in writing since GRRF 67 at several occasions in public and in private to the GRRF and several members of the ACV expert group I am totally astonished that the group is obviously not interested to make proposals and initiate actions which take account of the current state of art (the real world).

There are two problems to be solved which have nothing to do directly with the new FACS technology. However, since amendments to R13 are necessary for the ACV introduction the following two problems shouldn't be ignored by the ACV expert group when this group makes proposals for amending ECE-R13:

**Problem A: Prescribed Pin 3 and Pin 4 allocation**

**Problem B: Required red warning with o/c failure at Pin 4**

**Problem A: Prescribed Pin 3 and Pin 4 allocation**

If you introduce an o/c failure on Pin 4 on any European EBS trailer then (independent which is the system manufacturer) the ECU is not anymore powered (which, however, is required by ISO 7638 via Pin 2 and Pin 3).

The current ISO 7638 requires that the electronics and electrovalves are powered independently by pins 2&3 (electronics) and pins 1&4 (electrovalve).

For some time I asked the industry that ISO 7638 should be amended to reflect the current state of art.

Unfortunately, nothing was done in the past.

For me it is astonishing that the group just copies the ISO 7638 contact allocation requirements (section 5.3) although most of the members of the ACV ad-hoc group know by now that what they propose to the GRRF cannot be met by the current EBS trailer braking systems.

It is bad enough that we (GRRF and industry) did not manage in the past to put pressure on ISO to amend its specification accordingly. However, to hide ones head in the sand and ignore the reality and to transfer these wrong ISO requirements directly into ECE-R13 is even worse.

#### **Problem B: Required red warning with o/c failure at Pin 4**

If Pin 4 is disconnected on any EBS trailer the ECU is dead as a doornail and a red warning is not possible any more.

For EBS full trailers this is not in compliance with paragraph 5.2.2.15.2.1 of ECE-R13.

However, from the safety point of view this behaviour is generally seen as adequate and fully in line with the safety concept of ECE-R13.

To my opinion paragraph 5.2.2.15.2.1 of ECE-R13 should in practice not indirectly require for trailers equipped with an electric control line the red warning signal in the case of failures of energy supply available from the ISO 7638 (e.g. o/c failure at Pin 4).

When such a failure occurs the prescribed service braking performance of a semi-trailer is always ensured due to the pneumatic backup system and thus paragraph 5.2.2.15.2.1 of ECE R13 is always fulfilled. However, this cannot be said for an EBS full trailer. With such a failure the prescribed service braking performance in general cannot be guaranteed although the maximum braking forces (dependent e.g. on the load condition) can be generated.

Since the system manufacturers do not know whether its system is fitted to an EBS semi-trailer or an EBS full trailer they are forced in practice to design their EBS systems to illuminate also the red warning signal even when the prescribed service braking performance is guaranteed (as in the case of a semi-trailer). For me this is really counterproductive and a misuse of the red warning signal.

Thus with regard to the solution of “problem A” paragraph 5.2.2.15.2.1 of ECE R13 should only require the yellow pin 5 warning instead of the red warning signal.

I request therefore CLEPA (in cooperation with the ACV expert group) to initiate a discussion in Geneva for solving both problems A and B and submit the appropriate R13 amendments which do not ignore the state of art.

Dear Mr. Gunneriusson, I know that problems A and B are really old and unresolved problems from the past (independent from the introduction of the new ACV technology).

I blame myself that I was not successful in the past to solve these two problems although I addressed these problems repeatedly to the industry in the hope that ISO would amend the ISO 7638 contact allocation requirements (section 5.3) to bring it in line with the actual state of art.

I hope that the ACV expert group now understands that the proposed definition of "Brake electric/electronic interface" (see document "ACV-05-07 Rev 1") cannot be fulfilled by any EBS trailer and does totally ignore the current state of art.

**With regard to problem A:** It is bad enough that ISO 7638 does require something which ignores the current state of art and which cannot be fulfilled by the current existing EBS systems.

But to copy simply these outdated ISO 7638 contact allocation requirements directly into ECE-R13 cannot be the solution.

**Proposal:** Knowing that ISO 7638 cannot be amended so quickly a solution could be to introduce a footnote in ECE-R13 which does allow the powering of the electronics also by Pin 4. Probably CLEPA finds other alternative solutions which reconcile the state of art with ISO 7638 and ECE-R13 respectively.

**With regard to problem B:** Solution A can only really be solved when a solution is also found to problem B.

**Proposal:** Instead of the red warning signal only the yellow pin 5 warning should be required.

I want to stress that by this writing I want to initiate a discussion to amend ECE-R13 to reflect the real world but I do not - by any means - require that the EBS system manufacturers have to change their systems which to my opinion comply fully with the required safety level.

Mr. Gunneriusson, you know that I have addressed these two problems at several occasions. I really do not want to delay the progress of updating ECE-R13 in order to make it possible to approve ACV systems.

However, I hope you understand that it makes no sense to ignore the reality and giving GRRF the impression that your definition of "Brake electric/electronic interface" can be really complied with.

Best regards

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