EVSC06-23

I would like to comment on the content of the mail from Mr.Gaupp (secretary's note: e-mail dated 28.05.2006, document number EVSC06-21 given to the attachment) as follows:

The topic of whether a roll-over control system should have the capability of braking all axles was first discussed at the meeting held in Brussels and it was accepted that the requirements should reflect the state of the art at that time which for trailers means that there are two different philosophies used, one having the capability of automatically braking the front axle and the other not having that capability. After discussion it was agreed that braking only one axle would be acceptable.

With respect to my document EVSC 05–49 this was introduced to clarify the requirements concerning the braking of axles within an axle group as it was currently required that the left and right wheels of all axles must be individually controlled which would have meant that 6 or 8 channel systems would be required for some commercial vehicles. When this subject was discussed at the Munich meeting the paragraph relating to direction control was amended at the time and the roll-over control paragraph and that of the trailers was amended later. Unfortunately the text in EVSC 05-38 Rev 2 did not reflect the content of EVSC 05-49 as there was now the reference to controlling "each" axle or axle group. This oversight then re-opened the discussion at the Paris meeting when the error was pointed out.

From a technical and legislative point of view I would make the following comments:

Having a requirement that a system must have the capability of controlling each axle group is no guarantee of performance. The argument put forward by Mr.Gaupp supposes that if the capability exists then all wheels will be braked to their maximum and the highest level of performance produced. In theory this may be correct but in practice this is not the case. In a roll-over condition the loading of the inside wheels is reduced and may be zero. In this case applying full braking to all outside wheels is not desirable particularly on steering axles as this will cause a significant yaw moment that may make the vehicle even more unstable. Equally on trailers the minimum number of directly controlled wheels is prescribed which in the case of full trailers is two directly controlled wheels on one front axle and two directly controlled wheels on one rear axle equally directly controlled wheels are not allowed to lock. As full trailer braking systems are generally a 4S/3M configuration with the single modulator being installed on the front axle and utilises select low control then the maximum braking force that can be transmitted to that axle is limited to the load on the inside wheel which if it is approaching zero means the braking force produced by that axle will also approaching zero and therefore have little or no impact on the vehicle deceleration produced.

Therefore in conclusion it may appear that having a requirement which demands that all axles must have the capability of being braked does not guarantee a higher performance level than what is current required in EVSC 05-38 Rev 3 therefore it is proposed that the existing text should remain unchanged.

Best Regards
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