

GRRF AEBS/LDWS Informal Working Group
14th Meeting, 9 to 11 May 2011

Proposed amendments to the warning and activation test requirements and pass/fail values in the draft regulatory text proposals on AEBS submitted to GRRF 70

1. Documents ECE/TRANS/WP.29/GRRF/2011/25 (AEBS M+A 00 series) and ECE/TRANS/WP.29/GRRF/2011/24 (AEBS M)

- a) Paragraph 6.4.2.1. amend to read:

At least one haptic or acoustic warning mode shall be provided no later than the value specified in Table I Column B of Annex 3, ~~before the start of the emergency braking phase.~~

- b) Paragraph 6.4.2.2. amend to read:

At least two warning modes shall be provided no later than the value specified in Table I Column C of Annex 3, ~~before the start of the emergency braking phase.~~

- c) Paragraph 6.5.2.1. amend to read:

At least one haptic or acoustic warning mode shall be provided no later than the value specified in Table I Column E of Annex 3, ~~before the start of the emergency braking phase.~~

- d) Paragraph 6.5.2.2. amend to read:

At least two warning modes shall be provided no later than the value specified in Table I Column F of Annex 3, ~~before the start of the emergency braking phase.~~

- e) Annex 3, table 1 to read:

A	B	C	D	E	F	G	H	
							Stationary target	Moving target
	Timing of warning modes	Speed reduction	Speed reduction	Timing of warning modes	Speed reduction	Target speed		
	At least 1 haptic or acoustic (ref. paragraph 6.4.2.1.)	At least 2 (ref. paragraph 6.4.2.2.)	(ref. paragraph 6.4.4.)	At least 1 haptic or acoustic (ref. paragraph 6.5.2.1.)	At least 2 (ref. paragraph 6.5.2.2.)	(ref. paragraph 6.5.3.)	(ref. paragraph 6.5.1.)	
M ₃ and N ₃ vehicles with a pneumatic braking system [pneumatic rear axle suspension]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20 km/h]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	32 ± 2 km/h	1
M ₃ vehicles with a Vacuum-hydraulic braking system	before TTC reaches [2]s	before TTC reaches [1.4]s	N.A	before TTC reaches [2]s	before TTC reaches [1.4]s	N.A	32 ± 2 km/h	2
M ₂ and N ₂ vehicles with a pneumatic braking system [pneumatic rear axle suspension]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20 km/h]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	32 ± 2 km/h	3

M ₂ and N ₂ vehicles with an pneumatic-hydraulic braking system (AoH) [pneumatic rear axle suspension]	before TTC reaches [2]s	before TTC reaches [1.4]s	N.A	before TTC reaches [2]s	before TTC reaches [1.4]s	N.A	32 ± 2 km/h	4
M ₂ and N ₂ vehicles with a Vacuum-hydraulic braking system	before TTC reaches [2]s	before TTC reaches [1.4]s	N.A	before TTC reaches [2]s	before TTC reaches [1.4]s	N.A	32 ± 2 km/h	5

2. Document ECE/TRANS/WP.29/GRRF/2011/26 (AEBS M+A 01 series)

a) Annex 3, table 1 to read:

A	Stationary target			Moving target			H		
	Timing of warning modes		Speed reduction (ref. paragraph 6.4.4.)	Timing of warning modes		Speed reduction (ref. paragraph 6.5.3.)			Target speed (ref. paragraph 6.5.1.)
	At least 1 haptic or acoustic (ref. paragraph 6.4.2.1.)	At least 2 (ref. paragraph 6.4.2.2.)		At least 1 haptic or acoustic (ref. paragraph 6.5.2.1.)	At least 2 (ref. paragraph 6.5.2.2.)				
M ₃ and N ₃ vehicles with a pneumatic braking system [pneumatic rear axle suspension]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than [1.4 s / 2.0 s] before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[12 ± 2 km/h]	1	
M ₃ vehicles with a Vacuum-hydraulic braking system	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than [1.4 s / 2.0 s] before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[32 ± 2 km/h]	2	
M ₂ and N ₂ vehicles with a pneumatic braking system [pneumatic rear axle suspension]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than [1.4 s / 2.0 s] before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[12 ± 2 km/h]	3	
M ₂ and N ₂ [M ₃ and N ₃] vehicles with an pneumatic-hydraulic braking system (AoH) [pneumatic rear axle suspension]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[32 ± 2 km/h]	4	
M ₂ and N ₂ vehicles with a Vacuum-hydraulic braking system	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than [1.4 s / 2.0 s] before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[32 ± 2 km/h]	5	

3. Document ECE/TRANS/WP.29/GRRF/2011/23 (AEBS-A)

a) Paragraph 6.4.2.1. amend to read:

At least one haptic or acoustic warning mode shall be provided no later than the value specified in Table I Column B of Annex 3, ~~before the start of the emergency braking phase.~~

b) Paragraph 6.4.2.2. amend to read:

At least two warning modes shall be provided no later than the value specified in Table I Column C of Annex 3, ~~before the start of the emergency braking phase.~~

c) Paragraph 6.5.2.1. amend to read:

At least one haptic or acoustic warning mode shall be provided no later than the value specified in Table I Column E of Annex 3, ~~before the start of the emergency braking phase.~~

d) Paragraph 6.5.2.2. amend to read:

At least two warning modes shall be provided no later than the value specified in Table I Column F of Annex 3, ~~before the start of the emergency braking phase.~~

e) Annex 3, table 1 to read:

A	B	C	D	E	F	G	H	
	Stationary target			Moving target				
	Timing of warning modes		Speed	Timing of warning modes		Speed reduction	Target speed	
	At least 1 haptic or acoustic (ref. paragraph 6.4.2.1.)	At least 2 (ref. paragraph 6.4.2.2.)	reduction (ref. paragraph 6.4.4.)	At least 1 haptic or acoustic (ref. paragraph 6.5.2.1.)	At least 2 (ref. paragraph 6.5.2.2.)	(ref. paragraph 6.5.3.)	(ref. paragraph 6.5.1.)	
M ₃ and N ₃ vehicles with a pneumatic braking system [pneumatic rear axle suspension]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than [1.4 s / 2.0 s] before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[12 ± 2 km/h]	1
M ₃ vehicles with a Vacuum-hydraulic braking system	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than [1.4 s / 2.0 s] before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[32 ± 2 km/h]	2
M ₂ and N ₂ vehicles with a pneumatic braking system [pneumatic rear axle suspension]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than [1.4 s / 2.0 s] before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[12 ± 2 km/h]	3
M ₂ and N ₂ [M ₃ and N ₃] vehicles with an pneumatic-hydraulic braking system (AoH) [pneumatic rear axle suspension]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[32 ± 2 km/h]	4
M ₂ and N ₂ vehicles with a Vacuum-hydraulic braking system	Not later than 1.4 s. before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	Not less than [10/20/50 km/h]	Not later than [1.4 s / 2.0 s] before start of emergency braking phase	Not later than 0.8 s. before start of emergency braking phase	No impact	[32 ± 2 km/h]	5

Justification:

According to its terms of reference (AEBS/LDWS-01-07-Rev.1) the GRRF informal group has to focus on systems for heavy vehicles in categories N₂, N₃, M₂, and M₃ vehicles, and the target completion date for the work of the informal group shall be the seventieth session of GRRF.

In their current state, the draft regulatory text proposals on AEBS submitted for GRRF 70 (documents ECE/TRANS/WP.29/GRRF/2011/23, ECE/TRANS/WP.29/GRRF/2011/24, ECE/TRANS/WP.29/GRRF/2011/25 and ECE/TRANS/WP.29/GRRF/2011/26) do not contain warning and activation test requirements and pass/fail values for all vehicles in categories N₂, N₃, M₂, and M₃, as can be noted from the empty cells in table 1 of Annex 3 to these documents.

At the 13th meeting of the GRRF informal group on AEBS/LDWS, where the table 1 in Annex 3 to the draft regulatory text proposals was discussed, the question was raised as to whether it would be appropriate to have the empty cells in the table filled out. The Chair stated that the table was a good tool to show to GRRF the results of the informal group and found it necessary to fill in the blank spaces in the table.

In order to complete the draft regulatory text proposals to include warning and activation test requirements and pass/fail values for all vehicles in categories N₂, N₃, M₂, and M₃, the Commission services are proposing the above amendments, in accordance with the bottom line approach set out by the Commission services at the 11th and 12th meeting of the GRRF informal group on AEBS and LDWS (see document AEBS/LDWS-11-20, p.13), and with a view to enable that the draft UNECE Regulation(s) can be used by the European Commission services as a basis for developing the implementing measures under the General Safety Regulation, which mandates in the EU the installation of AEBS in vehicles of categories N₂, N₃, M₂, and M₃.