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.

- В D A С E F G Η Moving target Stationary target Timing of warning modes Speed Speed reduction Timing of warning modes Target speed reduction (ref. paragraph (ref. paragraph At least 1 At least 2 At least 1 haptic At least 2 6.5.3.) 6.5.1.) haptic or (ref. paragraph (ref. or acoustic (ref. paragraph 6.4.2.2.) 6.5.2.2.) acoustic paragraph (ref. paragraph 6.4.4.) (ref. paragraph 6.5.2.1.) 6.4.2.1.) M₃ and N₃ vehicles Not later than Not later than Not less than Not later than Not later than No impact 32 ± 2 km/h 1 with a pneumatic 1.4 s. before 0.8 s. before 10/20 km/h] 1.4 s. before start 0.8 s. before start braking system start of start of of emergency of emergency [pneumatic rear axle emergency emergency braking phase braking phase suspension] oraking phase braking phase M₃ vehicles with a before TTC before TTC N.A before TTC before TTC N.A 32 ± 2 km/h 2 Vacuum-hydraulic reaches [2]s reaches [1.4]s reaches [2]s reaches [1.4]s braking system M₂ and N₂ vehicles Not later than Not later than Not less Not later than Not later than No impact 32 ± 2 km/h 3 with a pneumatic 1.4 s. before than [10/20 0.8 s. before 1.4 s. before 0.8 s. before braking system start of start of km/h] start of start of [pneumatic rear axle emergency emergency emergency emergency suspension] braking phase braking phase braking phase braking phase
- e) Annex 3, table 1 to read:

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:

А	В	С	D	Е	F	G	Н	
	Stationary target			Moving target				
	Timing of warning modes Speed			Timing of warning modes Speed reduction			Target speed	
	At least 1	At least 2	reduction	At least 1 haptic	At least 2	(ref. paragraph	(ref. paragraph	
	haptic or	(ref. paragraph	(ref. paragraph	or acoustic	(ref. paragraph	6.5.3.)	6.5.1.)	
	acoustic	6.4.2.2.)	6.4.4.)	(ref. paragraph	6.5.2.2.)			
	(ref. paragraph 6.4.2.1)			6.5.2.1.)				
Ma and Na vehicles	Not later than	Not later than	Not less than	Not later than	Not later than 0.8	No impact	[12 + 2 km/h]	1
with a proumatic	1 As before	0.8 s before	10/20/50	$\begin{bmatrix} 1 & 4 \\ 5 & 4 \end{bmatrix}$	s before start of	n to impact	$[12 \pm 2 \text{ km/m}]$	1
braking system	start of	start of	[10/20/30 km/h]	hefore start of	emergency			
Inneumatic rear axle	emergency	emergency	KIII/II]	emergency	braking phase			
suspension]	braking phase	braking phase		braking phase	oraking phase			
M _a vehicles with a	Not later than	Not later than	Not less than	Not later than	Not later than	No impact	[32 + 2 km/h]	2
Vacuum-hydraulic	14s before	0.8 s before	[10/20/50	[14s/20s]	0.8 s before	110 impact	$[02 \pm 2 \operatorname{Km/H}]$	-
braking system	start of	start of	km/h]	before start of	start of			
oraning of stern	emergency	emergency		emergency	emergency			
	braking phase	braking phase		braking phase	braking phase			
M_2 and N_2 vehicles	Not later than	Not later than	Not less than	Not later than	Not later than 0.8	No impact	$[12 \pm 2 \text{ km/h}]$	3
with a pneumatic	1.4 s. before	0.8 s. before	[10/20/50	[1.4 s / 2.0 s]	s. before start of	1		
braking system	start of	start of	km/h]	before start of	emergency			
[pneumatic rear axle	emergency	emergency	_	emergency	braking phase			
suspension]	braking phase	braking phase		braking phase				
M_2 and N_2 [M ₃ and	Not later than	Not later than	Not less than	Not later than	Not later than 0.8	No impact	$[32 \pm 2 \text{ km/h}]$	4
N ₃]vehicles with an	1.4 s. before	0.8 s. before	[10/20/50	1.4 s. before start	ts. before start of	-		
pneumatic-hydraulic	start of	start of	km/h]	of emergency	emergency			
braking system	emergency	emergency		braking phase	braking phase			
(AoH)	braking phase	braking phase						
[pneumatic rear axle								
suspension]								
M ₂ and N ₂ vehicles	Not later than	Not later than	Not less than	Not later than	Not later than	No impact	$[32 \pm 2 \text{ km/h}]$	5
with a Vacuum-	1.4 s. before	0.8 s. before	[10/20/50	[1.4 s / 2.0 s]	0.8 s. before			
hydraulic braking	start of	start of	km/h]	before start of	start of			
system	emergency	emergency		emergency	emergency			
	braking phase	braking phase		braking phase	braking phase			

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:

А	В	С	D	Е	F	G	Н	
		Stationary targe	t		Moving target			
	Timing of warning modes Speed			Timing of warning modes Speed red			Target speed	
	At least 1	At least 2	reduction	At least 1 haptic	At least 2	(ref. paragraph	(ref. paragraph	
	haptic or	(ref. paragraph	(ref. paragraph	or acoustic	(ref. paragraph	6.5.3.)	6.5.1.)	
	acoustic	6.4.2.2.)	6.4.4.)	(ref. paragraph	6.5.2.2.)			
	(ref. paragraph			6.5.2.1.)				
	6.4.2.1.)							
M ₃ and N ₃ vehicles	Not later than	Not later than	Not less than	Not later than	Not later than 0.8	No impact	$[12 \pm 2 \text{km/h}]$	1
with a pneumatic	1.4 s. before	0.8 s. before	[10/20/50	[1.4 s / 2.0 s]	s. before start of			
braking system	start of	start of	km/h]	before start of	emergency			
[pneumatic rear axle	emergency	emergency		emergency	braking phase			
suspension]	braking phase	braking phase		braking phase				
M ₃ vehicles with a	Not later than	Not later than	Not less than	Not later than	Not later than	No impact	$[32 \pm 2 \text{ km/h}]$	2
Vacuum-hydraulic	1.4 s. before	0.8 s. before	[10/20/50	[1.4 s / 2.0 s]	0.8 s. before			
braking system	start of	start of	km/h]	before start of	start of			
	emergency	emergency		emergency	emergency			
	braking phase	braking phase		braking phase	braking phase			
M ₂ and N ₂ vehicles	Not later than	Not later than	Not less than	Not later than	Not later than 0.8	No impact	$[12 \pm 2 \text{ km/h}]$	3
with a pneumatic	1.4 s. before	0.8 s. before	[10/20/50	[1.4 s / 2.0 s]	s. before start of			
braking system	start of	start of	km/h]	before start of	emergency			
[pneumatic rear axle	emergency	emergency		emergency	braking phase			
suspension]	braking phase	braking phase		braking phase				
M_2 and N_2 [M_3 and	Not later than	Not later than	Not less than	Not later than	Not later than 0.8	No impact	$[32 \pm 2 \text{ km/h}]$	4
N ₃]vehicles with an	1.4 s. before	0.8 s. before	[10/20/50	1.4 s. before start	ts. before start of			
pneumatic-hydraulic	start of	start of	km/h]	of emergency	emergency			
braking system	emergency	emergency		braking phase	braking phase			
(AoH)	braking phase	braking phase						
[pneumatic rear axle								
suspension]								
M ₂ and N ₂ vehicles	Not later than	Not later than	Not less than	Not later than	Not later than	No impact	$[32 \pm 2 \text{ km/h}]$	5
with a Vacuum-	1.4 s. before	0.8 s. before	[10/20/50	[1.4 s / 2.0 s]	0.8 s. before			
hydraulic braking	start of	start of	km/h]	before start of	start of			
system	emergency	emergency		emergency	emergency			
	braking phase	braking phase		braking phase	braking phase			

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 N_2 , N_3 , M_2 , and M_3 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 N_2 , N_3 , M_2 , and M_3 , 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 N_2 , N_3 , M_2 , and M_3 , 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 N_2 , N_3 , M_2 , and M_3 .