Transmitted by the expert from OICA

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OICA stance on the EC proposals regarding the Transposition of Euro 5 requirements into ECE Regulation No. 83

OICA would like to propose amendments to the European Commission proposals concerning the transposition of the Euro 5 requirements into Regulation No. 83.
The amendments to ECE/TRANS/WP.29/2009/57, ECE/TRANS/WP.29/2009/134, ECE/TRANS/WP.29/2010/53 and to the paper developed during the Euro 5 experts meeting held in Geneva on 12 January 2010 are marked in bold characters or strikethrough .

A. PROPOSAL

Paragraph 2.1.1., amend to read:

"2.1.1. the equivalent inertia determined in relation to the reference mass as prescribed in Annex 4, paragraph 5.1. **(or Annex 4a, Table 1)** and"

Paragraph 2.2., amend to read:

"2.2. "Reference mass" means the "unladen mass" of the vehicle increased by a uniform figure of 100 kg for test according to Annexes 4, **4a** and 8;"

Paragraph 2.5., amend to read:

"2.5. "Particulate pollutants" means components of the exhaust gas which are removed from the diluted exhaust gas at a maximum temperature of 325 K (52 °C) by means of the filters described in Annex 4 **and Annex 4a**;"

Paragraph 3.1.1., subparagraph (a), amend to read:

"… Annex 4 **or Annex 4a** to this Regulation …"

Paragraph 5.3.1.3., amend to read:

"… described in Annex 4 **or Annex 4a.** The method used to collect and analyse the gases and ~~to remove and weigh~~ **to sample and analyse** the particulates shall be as prescribed."

Paragraph 5.3.5.1.2., amend to read as follows:

"5.3.5.1.2. The test consists of the four elementary urban driving cycles of Part One of the Type I test. The Part One test is described **either** in Annex 4, Appendix 1 and illustrated in figure 1/1, ~~1/2 and 1/3~~ of the Appendix**, or paragraph 6.1.1. of Annex 4a, and illustrated in figure 1 of the same Annex**. The low ambient temperature test lasting a total of 780 seconds shall be carried out without interruption and start at engine cranking."

Appendix 3,

Paragraph 4.1., amend to read:

"4.1. When a check on vehicles is deemed necessary, emission tests in accordance with Annex 4 **or Annex 4a** to this Regulation are performed on pre-conditioned vehicles selected in accordance with the requirements of paragraphs 2. and 3. of this Appendix. Pre-conditioning cycles additional to those specified in ~~Section~~ **paragraph** 5.3. of Annex 4 **or paragraph 6.3. or Annex 4a** to this Regulation will only be allowed if they are representative of normal driving.

Annex 3,

Table 1

Letters with reference to level of limit values, OBD requirements and vehicle category

Character (fuel)[1]	Character (PM Limit value and OBD)	Limit value for PM[4] [mg/km]	OBD PM Limit value[4] [mg/km]	OBD NOx monitor[5]	Vehicle category and class	Engine type
B, D C	A	5[2]	50 [80][6]	no -	M, N_1 class I.	PI CI
C	B	5[2]	50	-	M_1 to fulfill specific social needs (excluding M_{1G})	CI
C	C	5[2]	50	-	M_{1G} to fulfill specific social needs	CI
B, D C	D	5[2]	50	no -	N_1 class II	PI CI
B, D C	E	5[2]	50 [80][6]	no -	N_1 class III, N_2	PI CI
B, D C	F	4.5[3]	50	no -	M, N_1 class I.	PI CI
C	G	4.5[3]	50	-	M_1 to fulfill specific social needs (excluding M_{1G})	CI
B, D C	H	4.5[3]	50	no -	N_1 class II	PI CI
B, D C	I	4.5[3]	50	no -	N_1 class III, N_2	PI CI
B, D C	J	4.5[3]	50	yes -	M, N_1 class I.	PI CI
C	K		50	-	M_1 to fulfill specific social needs (excluding M_{1G})	CI
B, D C	L	4.5 [3]	50	yes -	N_1 class II	PI CI
B, D C	M	4.5 [3]	50	yes -	N_1 class III, N_2	PI CI

[1] According to paragraph 2.19. of this Regulation
[2] Measured according to Annex 4 of this Regulation
[3] Measured according to Annex 4a of this Regulation
[4] Applicable only to vehicles with compression ignition (CI) engine or positive ignition engine (PI) with direct injection (GDI)
[5] Yes/no, refers only to vehicles with positive ignition engine (PI); see paragraph 3.3.3.1., of Annex 11.
[6] Until 1.1.2011 relaxed OBD threshold limit (80 mg/km) for PM mass is applied to M_1 and N, where RW >1760 kg; see paragraph 3.3.2., footnote (2), of Annex 11."

Annex 4, paragraph 8.2., subparagraph (e), amend to read:

"(e) For ethanol (E85) ($C_1H_{2.74}O_{0.385}$) d = 0.932 g/l"

Annex 4 - Appendix 1,

Paragraph 2. ELEMENTARY URBAN CYCLE (Part One)

Table 1.2, amend to read: (amended text in **bold** characters)

"Table 1.2 **Elementary urban operating cycle on the chassis dynamometer (Part One)**

No. of operation	Operation	Phase	Acceleration (m/s^2)	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
1	Idling	1	**0**	**0**	11	11	11	6 s PM + 5 s K_1 (*)
2	Acceleration	2	1.04	0-15	4	4	15	1
3	Steady speed	3	**0**	15	9	8	23	1
4	Deceleration	4	-0.69	15-10	2	5	25	1
5	Deceleration, clutch disengaged		-0.92	10-0	3		28	K_1 (*)
6	Idling	5	**0**	**0**	21	21	49	16 s PM + 5 s K_1 (*)
7	Acceleration	6	0.83	0-15	5	12	54	1
8	Gear change			**15**	2		56	
9	Acceleration		0.94	15-32	5		61	2
10	Steady speed	7	**0**	32	24	24	85	2
11	Deceleration	8	-0.75	32-10	8	11	93	2
12	Deceleration, clutch disengaged		-0.92	10-0	3		96	K_2 (*)
13	Idling	9	**0**	**0**	21		117	16 s PM + 5 s K_1

No. of operation	Operation	Phase	Acceleration (m/s^2)	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
								(*)
14	Acceleration	10	**0.83**	**0-15**	5	26	122	1
15	Gear change			**15**	2		124	
16	Acceleration		0.62	15-35	9		133	2
17	Gear change			**35**	2		135	
18	Acceleration		0.52	35-50	8		143	3
19	Steady speed	11	**0**	50	12	12	155	3
20	Deceleration	12	-0.52	50-35	8	8	163	3
21	Steady speed	13	**0**	35	13	13	176	3
22	Gear change	14		**35**	2	12	178	
23	Deceleration		-0.99	35-10	7		185	2
24	Deceleration clutch disengaged		-0.92	10-0	3		188	K_2 (*)
25	Idling	15	**0**	**0**	7	7	195	7 s PM (*)

(*) PM = gearbox in neutral, clutch engaged. K_1, K_2 = first or second gear engaged, clutch disengaged."

Paragraph 3. EXTRA-URBAN CYCLE (Part Two),

Table 1.3, amend to read: (amended text in **bold** characters)

"Table 1.3 Extra-urban cycle (Part Two) for the Type I test

No. of operation	Operation	Phase	Acceleration ($m/s^{2)}$	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
1	Idling	1	**0**	**0**	20	20	20	K_1 (1)
2	Acceleration	**2**	0.83	0-**15**	5	41	25	1
3	Gear change			**15**	2		27	-
4	Acceleration		0.62	15-35	9		36	2
5	Gear change			**35**	2		38	-
6	Acceleration		0.52	**35-50**	8		46	3
7	Gear change			**50**	2		48	-
8	Acceleration		0.43	50-70	13		61	4
9	Steady speed	3		70	50	50	111	5
10	Deceleration	4	-0.69	70-50	8	8	119	4 s.5 + 4 s.4

No. of operation	Operation	Phase	Acceleration ($m/s^{2)}$	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
11	Steady speed	5		50	69	69	188	4
12	Acceleration	6	0.43	50-70	13	13	201	4
13	Steady speed	7	**0**	70	50	50	251	5
14	Acceleration	8	0.24	70-100	35	35	286	5
15	Steady speed (2)	9	**0**	100	30	30	316	5 (2)
16	Acceleration (2)	10	0.28	100-120	20	20	336	5 (2)
17	Steady speed (2)	11	**0**	120	10	20	346	5 (2)
18	Deceleration (2)	12	-0.69	120-80	16	34	362	5 (2)
19	Deceleration (2)		-1.04	80-50	8		370	5 (2)
20	Deceleration, clutch disengaged		1.39	50-0	10		380	K5 (1)
21	Idle	13	**0**	**0**	20	20	400	PM (1)

(1) PM = gearbox on neutral, clutch engaged.
K_1,K_5 = first or fifth gear engaged, clutch disengaged

(2) Additional gears can be used according to manufacturer recommendations if the vehicle is equipped with a transmission with more than five gears."

Annex 4, Appendix 5,

Paragraph 2.3.2., amend to read:

"2.3.2. The piping configuration, flow capacity of the CVS, and the temperature and specific humidity of the dilution air (which may be different from the vehicle combustion air source) shall be controlled so as to virtually eliminate water condensation in the system (a flow of 0.142 to 0.165 m^3/s is sufficient for most vehicles)."

Annex 4a,

Paragraph 1., amend to read:

"1. APPLICABILITY

This annex is concurrent and interchangeable with Annex 4 in describing test procedures, and should yield to congruent results, excluding all issues related to particulate matter (PM), where the procedures are not comparable, and therefore separate limit values are issued in Table 1, in paragraph 5.3.1.4 of this Regulation, to be used in either case.

Tables 1 and 2, amend to read: (amended text in **bold** characters)

Table 1 - Elementary urban operating cycle on the chassis dynamometer (Part One)

No. of operation	Operation	Phase	Acceleration (m/s^2)	Speed (km/h)	Duration of each		Cumulative time (s)	Gear to be used in the case of a manual gearbox
					Operation (s)	Phase (s)		
1	Idling	1	**0**	**0**	11	11	11	6 s PM + 5 s K_1 (*)
2	Acceleration	2	1.04	0-15	4	4	15	1
3	Steady speed	3	**0**	15	9	8	23	1
4	Deceleration	4	-0.69	15-10	2	5	25	1
5	Deceleration, clutch disengaged		-0.92	10-0	3		28	K_1 (*)
6	Idling	5	**0**	**0**	21	21	49	16 s PM + 5 s K_1 (*)
7	Acceleration	6	0.83	0-15	5	12	54	1
8	Gear change			**15**	2		56	
9	Acceleration		0.94	15-32	5		61	2
10	Steady speed	7	**0**	32	24	24	85	2
11	Deceleration	8	-0.75	32-10	8	11	93	2
12	Deceleration, clutch disengaged		-0.92	10-0	3		96	K_2 (*)
13	Idling	9	**0**	**0**	21		117	16 s PM + 5 s K_1 (*)
14	Acceleration	10	**0.83**	**0-15**	5	26	122	1
15	Gear change			**15**	2		124	
16	Acceleration		0.62	15-35	9		133	2
17	Gear change			**35**	2		135	
18	Acceleration		0.52	35-50	8		143	3
19	Steady speed	11	**0**	50	12	12	155	3
20	Deceleration	12	-0.52	50-35	8	8	163	3
21	Steady speed	13	**0**	35	13	13	176	3
22	Gear change	14		**35**	2	12	178	
23	Deceleration		**-0.99**	**35-10**	7		185	2
24	Deceleration clutch disengaged		-0.92	10-0	3		188	K_2 (*)
25	Idling	15	**0**	**0**	7	7	195	7 s PM (*)

(*) PM = gearbox in neutral, clutch engaged. K_1, K_2 = first or second gear engaged, clutch disengaged.

Table 2 - Extra-urban cycle (Part Two) for the Type I test

No. of operation	Operation	Phase	Acceleration (m/s^2)	Speed (km/h)	Duration of each		Cumulative time(s)	Gear to be used in the case of a manual gearbox
					Operation(s)	Phase(s)		
1	Idling	1	**0**	**0**	20	20	20	K_1 (1)
2	Acceleration	2	0.83	0-**15**	5	41	25	1
3	Gear change			**15**	2		27	-
4	Acceleration		0.62	15-35	9		36	2
5	Gear change			**35**	2		38	-
6	Acceleration		0.52	**35-50**	8		46	3
7	Gear change			**50**	2		48	-
8	Acceleration		0.43	50-70	13		61	4
9	Steady speed	3	**0**	70	50	50	111	5
10	Deceleration	4	-0.69	70-50	8	8	119	4 s.5 + 4 s.4
11	Steady speed	5	**0**	50	69	69	188	4
12	Acceleration	6	0.43	50-70	13	13	201	4
13	Steady speed	7	**0**	70	50	50	251	5
14	Acceleration	8	0.24	70-100	35	35	286	5
15	Steady speed (2)	9	**0**	100	30	30	316	5 (2)
16	Acceleration (2)	10	0.28	100-120	20	20	336	5 (2)
17	Steady speed (2)	11	**0**	120	10	20	346	5 (2)
18	Deceleration (2)	12	-0.69	120-80	16	34	362	5 (2)
19	Deceleration (2)		-1.04	80-50	8		370	5 (2)
20	Deceleration, clutch disengaged		1.39	50-0	10		380	K_5 (1)
21	Idle	13	**0**	**0**	20	20	400	PM (1)

(1) PM = gearbox in neutral, clutch engaged. K_1, K_5 = first or second gear engaged, clutch disengaged

(2) Additional gears can be used according to manufacturer recommendations if the vehicle is equipped with a transmission with more than five gears."

Annex 7,

Paragraph 4.1., amend to read:

"4.1. Chassis dynamometer

The chassis dynamometer shall meet the requirements of **Appendix 1 of** Annex 4 **or Appendix 1 of Annex 4a**."

Paragraph 5.2.1., amend to read:

"… Annex 4 **or Annex 4a** …"

Paragraph 5.4.1., amend to read:

"… Annex 4 **or Annex 4a** …"

Annex 7 - Appendix 1,

Paragraph 3.2., amend to read:

"…

The analyser … of Annex 4 **or paragraph 3.2. of Annex 4a** …

…"

Annex 8,

Paragraph 2.1.1., amend to read:

"… Annex 4 **or Annex 4a** …"

Paragraph 2.2.1., amend to read:

" … Appendix 3 of Annex 4 **or Appendix 1 of Annex 4a** …"

Paragraph 2.2.2., amend to read:

" … **Annex** 4 **or Appendix 1 of Annex 4a** …"

Paragraph 2.3.1., amend to read:

"2.3.1. The **provisions** of paragraph 4.2. of Annex 4 and Appendix 5 to Annex 4 **or Appendix 2 and Appendix 3 of Annex 4a** apply."

Paragraph 2.4.1., amend to read:

"… Annex 4 **or Annex 4a** …"

Paragraph 2.4.2., amend to read:

"… Annex 4 **or Annex 4a** …"

Paragraph 2.5.1., amend to read:

"… Annex 4 **or paragraph 3 of Appendix 3 of Annex 4a** … "

Paragraph 2.6.1., amend to read:

"… Annex 4 **or paragraph 4.6 of Annex 4a** …"

Paragraph 3.2., amend to read:

" … Annex 4, **Appendix** 1**or Figure 1 in Annex 4a** …"

Paragraph 3.2.1., amend to read:

"… Annex 4 **or Table 1 and Figure 1 in Annex 4a** …"

Paragraph 3.3.1., amend to read:

"… of paragraph 3.1. of Annex 4 **or 3.2 of Annex 4a** … paragraph 5.1. of Annex 4 **or paragraph 6.2.1 of Annex 4a** apply."

Paragraph 4.2.3., amend to read:

"… Parts One and Two **or corresponding Tables 1 and 2 and Figures 1 and 2 of Annex 4a**. At the request of the …"

Paragraph 4.2.5., amend to read:

"… Annex 4 **or paragraph 6.2.3. of Annex 4a."**

Paragraph 4.2.7., amend to read:

"… Annex 4, Appendix 1 **or in Table 1 and Figure 1 of Annex 4a**. The extent …"

Paragraph 5.1.1., amend to read:

"… (Annex 4, Appendix 1, Figure 1/1 **or Annex 4a, Table 1 and Figure 1)**…"

Paragraph 5.2.1.4., amend to read:

"… Annex 4 **or paragraph 1.2.6. of Appendix 1 of Annex 4a**."

Paragraph 5.3.1., amend to read:

"… Annex **or paragraph 6.4., excluding 6.4.1.2., of Annex 4a** …"

Paragraph 5.3.2., amend to read:

"… Annex 4, **or paragraph 6.5., excluding paragraph 6.5.2., of Annex 4a** …"

Paragraph 5.3.3., amend to read:

"… Annex 4 or **paragraph 6.6. of Annex 4a** ..."

Annex 9,

Paragraph 6.3.1.2., amend to read:

"… Annex 4 **or Appendix 7 of Annex 4a**."

Paragraph 6.3.1.4., , add:

"… Annex 4 **or Annex 4a** …"

Annex 11,

Paragraph 2.9., amend to read:

"… Annex 4, Appendix 1 **or Tables 1 and 2 of Annex 4a**."

Annex 11 - Appendix 1,

Paragraph 3.1., amend to read:

"… Annex 4 **or** paragraph **3.2. of Annex 4a."**

Paragraph 4.1., amend to read:

"… Annex 4 **or** paragraph **3.2. of Annex 4a."**

Paragraph 5.1., amend to read:

"… Annex 4 **or** Appendix **1 of Annex 4a**."

Paragraph 6.1., amend to read:

"… Annex 4 **or Annex 4a."**

Annex 12,

Paragraph 3.1.1.1., amend to read:

"… Annex 4 **or paragraph 6.3. of Annex 4a** …"

Annex 13,

Paragraph 3.1., amend to read:

"… Annex 4 **paragraphs** 5., 6., 7. and 8, **or to Annex 4a, paragraphs 6.4. to 6.6**. Determination of …"

Paragraph 3.2.1., amend to read:

"… Annex 4 **or paragraph 6.3. of Annex 4a** …"

Paragraph 3.2.2., amend to read:

"… Annex 4 **or in Annex 4a** …"

Paragraph 3.2.6., amend to read:

"… Annex 4 or **Annex 4a, paragraph 6.6.,** …"

Annex 14,

Paragraph 1.2., amend to read:

"… Annex 4/Annex **4a,** 5, …"

Paragraph 3.1.2.2.1., amend to read:

"… Annex 4 **or Table 2 of Annex 4a** …"

Paragraph 3.1.2.5.3., amend to read:

"3.1.2.5.3. The vehicle shall be driven according to Annex 4, **or equivalent provisions in Annex 4a**, or in case of special gear shifting strategy, according to the manufacturer's instructions, as incorporated in the drivers' handbook of production vehicles and indicated by a technical gear shift instrument (for drivers' information). For these vehicles the gear shifting points prescribed in Annex 4, Appendix 1 **(or in equivalent provisions in Annex 4a)** are not applied. For the pattern of the operating curve the

description according to paragraph 2.3.3. in Annex 4 **or paragraph 6.1.3. of Annex 4a** shall apply.

Paragraph 3.1.2.5.4., amend to read:

"… Annex 4 **or equivalent provisions in Annex 4a**."

Paragraph 3.2.3.1.1., amend to read:

"… Annex 4 (**or Table 2 and Figure 2 of Annex 4a**)…"

Paragraph 3.2.3.4.3., amend to read:

"… paragraph 2.3.3. in Annex 4 (**or paragraph 6.1.3.2. of Annex 4a**) shall apply."

Paragraph 3.2.3.4.4., amend to read:

"… Annex 4, **or corresponding provisions in Annex 4a ."**

Paragraph 3.4.1., amend to read:

"… Annex 4 (**or Annex 4a**)**.** If several hybrid …"

Paragraph 3.4.3., amend to read:

"3.4.3. The vehicle shall be driven according to Annex 4 **(or Annex 4a)**, or in case of special gear shifting strategy according to the manufacturer's instructions, as incorporated in the drivers' handbook of production vehicles and indicated by a technical gear shift instrument (for drivers information). For these vehicles the gear shifting points prescribed in Annex 4, Appendix 1 **(or Annex 4a)**, are not applied. For the pattern of the operating curve the description according to paragraph 2.3.3. in Annex 4 **(or paragraph 6.1.3.2. of Annex 4a)** shall apply."

B. JUSTIFICATION

OICA does not wish to delay the transposition of the Euro 5 requirements into ECE 83 but has identified concerns with the intention to restrict the transposition to the final stage of Euro 5 implementation (Euro 5b/EOBD 5+). These issues could lead to difficulties around the world for the approval of some Euro 5 vehicles and therefore OICA proposes to include the above amendments in the current amendment process.

The identified issues are as follows:

As the category “M1G for specific social needs” (off road vehicles with a reference weight greater than 2000 kg and designed for more than 6 seating positions) expires in

Europe before the 2014 introduction of the final stage of Euro 5, the proposed transposition provides no approval possibility for such vehicles.

For example if a Contracting Party adopted the new R83 in the year 2012 (or even 2013), one would have the strange situation where it would be forbidden to sell a Euro 5 letter "I" (i.e. N1 class III, N2) in that Contracting Party but one could sell the same vehicle in the EU (until 31.12.13). Would this be seen as a barrier to trade?

The proposed transposition would mandate (when adopted by a Contracting Party) the implementation of IUPR (In Use Performance Ratios), ahead of the mandatory introduction in the EU (2014). This introduction date was selected in the EU based on the lead time required to implement the technical requirements and at least this lead time needs to be recognised in all Contracting Parties. Further, the statistical basis for establishing the required ratios is based on Californian vehicles, drivers and conditions. As neither vehicle manufacturers nor Contracting Parties have experience of these performance expectations (in use performance ratios) outside of Europe and the USA, Contracting Parties should be free and enabled to elect to postpone such requirements.

The proposed transposition would mandate the particulate counting procedure for diesel Euro 5 vehicles and Contracting Parties should be free and enabled to define their own introduction dates for this new and relatively expensive (investment and maintenance) measurement technology.

It has been argued that Contracting Parties are free to select individual items from an ECE Regulation to apply, but with Euro 5 it is proposed to include the "stage identifying characters" in the Type Approval number. The restriction of the transposition to the final stage of Euro 5 encourages cherry picking from the ECE-83 requirements, which is contrary to the principle of harmonisation. It would also negate the recognition of the Type Approval numbering system which is essential to the European vehicle registration process.

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