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Item 7.2. of the provisional agenda

**1997 Agreement (Periodical Technical Inspections) – Update
of UN Rules Nos. 1 and 2****Proposal for Revision 2 to Rule No. 1 on uniform provisions
for Periodical Technical Inspections of wheeled vehicles with
regard to the protection of the environment****Submitted by the representative of the Russian Federation***

The text reproduced below was prepared by the representatives of the Russian Federation and of the International Motor Vehicle Inspection Committee (CITA) to harmonize the provisions of Rule No. 1 with those of the latest UN Regulations annexed to the 1958 Agreement and the EU Directives. The draft amendments concern: (i) harmonization of the structure of the Rule No. 1 with Rule No. 2 (Roadworthiness), (ii) introduction of vehicle categories M₁ and N₁ and trailer categories O₂, O₃ and O₄, and (iii) introduction of inspection methods, defect assessment and current state of practices. It is based on a document without symbol (WP.29-159-13) distributed at the 160th session the World Forum for Harmonization of Vehicle Regulations (WP.29) (ECE/TRANS/WP.29/1102, para. 73). The modification to the current text of the Revision 1 of Rule No. 1 (ECE/RCTE/CONF/4/Add.1/Rev.1) are marked in bold for new and in strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, programme activity 02.4), the World Forum will develop, harmonize and update regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

Rule No. 1, amend to read:

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1. Scope

- 1.1. For the purpose of Article 1 of the Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of such Inspections, the items to be inspected are related to environmental requirements;
- 1.2. Wheeled vehicles **defined in paragraph 2.4 and** used in international transport shall satisfy the requirements set out below;
- 1.3. Contracting Parties may decide to extend the requirement of paragraph 1.2. above also to vehicles used in domestic transport.

2. Definitions

For the purpose of this Rule,

- 2.1. "*Agreement*" means the 1997 Vienna Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of such Inspections;
- 2.2. "*International Technical Inspection Certificate*" means a certificate about the periodical technical inspections of wheeled vehicles in compliance with the provisions of Article 1 and Appendix 2 of the Agreement;
- 2.3. "*Periodical Technical Inspection*" means a periodical uniform procedure by which the authorized technical Inspection Centres responsible for conducting the inspection tests verify that the wheeled vehicle submitted complies with ~~at least~~ the requirements of this Rule;
- 2.4. "*Wheeled vehicle*" means motor vehicles of categories **M₁**, M₂, M₃, **N₁**, N₂ and N₃, **and trailers of categories O₂, O₃ and O₄**¹ used in international transport ~~whose permissible maximum mass exceeds 3,500 kg~~;
- 2.5. "*Verification*" means the proof of compliance with the requirements set out in the annex to this Rule through tests and checks carried out using techniques and equipment currently available, and without dismantling or removing any part of the vehicle;
- 2.6. "*1958 Geneva Agreement*" means the Agreement concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be fitted and/or used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals granted on the basis of these Prescriptions, done at Geneva on 20 March 1958 and amended as of 16 October 1995;
- 2.7. "~~UNECE~~ *Regulation*" means a Regulation annexed to the 1958 Geneva Agreement.

¹ As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.2, para. 2. - www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29resolutions.html

3. Periodicity of technical inspections

<i>Vehicle Categories</i>	<i>Inspection Intervals</i>
Passenger-carrying motor vehicles: M₁ Goods vehicles: N₁ Trailers: O₂	Four years after first registration and every two years thereafter
Passenger-carrying motor vehicles: M ₂ above 3,500 kg and M ₃ Goods vehicles: N ₂ and N ₃ Trailers: O₃ and O₄	One year after the first registration and annually thereafter for vehicles registered in countries where all relevant UNECE Regulations or EU Directives do apply for type approval. For countries not doing so, an inspection is required on first registration.

4. Technical inspections

Vehicles to which these provisions apply must undergo a periodic technical inspection in accordance with the annex to this Rule hereafter.

Following verification, the compliance with at least the provisions of the annex to this Rule shall be confirmed by the International Technical Inspection Certificate.

5. Inspection requirements

The inspection shall cover:

- 5.1. The identification of the vehicle;
- 5.2. Exhaust emissions;
- 5.3. Noise emissions;
- 5.4. Other environment related items listed in paragraph 5. of the annex to this Rule hereafter.

6. Methods of inspections

The method of inspection set out in the annex to this Rule shall be the minimum requirement. Where a method of inspection is given as visual, it means that in addition to looking at the items, the inspector can also handle them, evaluate noise, etc.

7. Main reasons for rejection and assessment of defects

The main reasons for rejection and the assessment of defects are given in the annex to this Rule. The three criteria for assessment of defects are defined as follows.

- 7.1. "*Minor defects*" (MiD) are technical defects that have no significant effect on the safety of the vehicle and other minor non-compliances. The vehicle does not have to be re-examined as it can reasonably be expected that the detected defects will be rectified without delay.
- 7.2. "*Major defects*" (MaD) are defects that may prejudice the safety of the vehicle and/or put other road users at risk and other more significant non-compliances. Further use of the vehicle on the road without repair of the detected defects is not allowed although it may still be driven to a place for repair and afterwards to a specified location for the repair to be checked.
- 7.3. "*Dangerous defects*" (DD) are defects that constitute a direct and immediate risk to road safety such that the vehicle should not be used on the road under any circumstances.
- 7.4. A vehicle having defects falling into more than one defect group should be classified according to the most serious defect. A vehicle showing several defects of the same group can be classified in the subsequent more serious group if their combined effect makes the vehicle more dangerous.

8. Names and addresses

The Contracting Parties to the Agreement applying this Rule shall communicate to the United Nations Secretariat basic information on administrative authorities responsible for supervising the inspection tests.

Annex

Minimum inspection requirements

1. Scope

The inspection shall cover at least the items listed below.

2. Identification of the vehicle

Items to be checked/tested:
Registration plate
Chassis number

Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
2.1. Registration number plates (if needed by requirements ^{a)})	Visual inspection.	(a) Number plate(s) missing or so insecure/fixe d that it is (they are) likely to fall off. (b) Inscription missing or illegible. (c) Not in accordance with vehicle documents or records.	X	X X	
2.2. Vehicle identification chassis/ serial number	Visual inspection.	(a) Missing or cannot be found. (b) Incomplete, illegible. (c) Not in accordance with vehicle documents or records.		X X X	

^a "requirements" are laid down by type-approval requirements at the date of approval, first registration or first entry into service as well as retrofitting obligations or national legislation in the country of registration.

3. Environmental nuisances

3.1. Exhaust emissions

3.1.1. Vehicles with positive-ignition engines:

~~3.1.1.1. Vehicles with positive ignition engines and fuelled by petrol, exhaust system~~

~~3.1.1.1.1. Where the exhaust emissions are not controlled by an advanced emission control system such as a three-way catalytic converter that is lambda probe controlled:~~

~~3.1.1.1.1.1. Visual inspection of the exhaust system in order to check that it is complete and in a satisfactory condition and that there are no leaks.~~

- ~~3.1.1.1.1.2. Visual inspection of any emission control equipment fitted by the manufacturer in order to check that it is complete and in a satisfactory condition and that there are no leaks.~~
- ~~3.1.1.1.2. Where the exhaust emissions are controlled by an advanced emission control system such as a three way catalytic converter that is lambda-probe controlled:~~
- ~~3.1.1.1.2.1. Visual inspection of the exhaust system in order to check that it is complete and in a satisfactory condition and that there are no leaks.~~
- ~~3.1.1.1.2.2. Visual inspection of any emission control equipment fitted by the manufacturer in order to check that it is complete and in a satisfactory condition and that there are no leaks.~~
- ~~3.1.1.2. Vehicles with positive ignition engines and fuelled by petrol, no advanced control, CO content~~
- ~~Where the exhaust emissions are not controlled by an advanced emission control system such as a three way catalytic converter that is lambda probe controlled:~~
- ~~After a reasonable period of engine conditioning (taking account of manufacturer's recommendations) the carbon monoxide (CO) content of the exhaust gases is measured when the engine is idling (no load).~~
- ~~The maximum permissible CO content in the exhaust gases is that stated by the vehicle manufacturer. Where this information is not available or where the Contracting Parties' competent authorities decide not to use it as a reference value, the CO content must not exceed the following:~~
- ~~(a) for vehicles registered or put into service for the first time before 1 October 1986: 4.5 per cent vol.;~~
- ~~(b) for vehicles registered or put into service for the first time after 1 October 1986: 3.5 per cent vol.~~
- ~~3.1.1.3. Vehicles with positive ignition engines and fuelled by petrol with advanced control, CO content~~
- ~~Where the exhaust emissions are controlled by an advanced emission control system such as a three way catalytic converter that is lambda probe controlled:~~
- ~~3.1.1.3.1. Determination of the efficiency of the vehicle's emission control system by measuring the lambda value and the CO content of the exhaust gases in accordance with paragraph 4. or with the procedures proposed by the manufacturers and approved at the time of type approval. For each of the tests the engine is conditioned in accordance with the vehicle manufacturer's recommendations.~~
- ~~3.1.1.3.2. Exhaust pipe emissions — limit values~~
- ~~The maximum permissible CO content in the exhaust gases is that stated by the vehicle manufacturer. Where this information is not available the CO content must not exceed the following:~~
- ~~(a) Measurement at engine idling speed:~~
- ~~The maximum permissible CO content in the exhaust gases must not exceed 0.5 per cent vol. and for vehicles that conform to the limit values shown in Row A or Row B of the table in paragraph 5.3.1.4. of Regulation No. 83, Revision 2 or later amendments the~~

~~maximum CO content must not exceed 0.3 per cent vol. Where identification to Regulation No. 83, Revision 2 is not possible then the above shall apply to vehicles registered or first put into service after 1 July 2002.~~

- (b) ~~Measurement at high idle speed (no load), engine speed to be at least 2,000 min⁻¹:~~

~~CO content: maximum 0.3 per cent vol. and for vehicles that conform to the limit values shown in Row A or Row B of the table in paragraph 5.3.1.4. of Regulation No. 83, Revision 2 or later amendments the maximum CO content must not exceed 0.2 per cent vol. Where identification to Regulation No. 83, Revision 2 is not possible then the above shall apply to vehicles registered or first put into service after 1 July 2002.~~

~~Lambda: 1 ± 0.03 or in accordance with the manufacturer's specifications.~~

- (c) ~~For motor vehicles equipped with on board diagnostic systems (OBD) in accordance with Regulation No. 83, Revision 2 and subsequent amendments Contracting Parties may, as an alternative to the test specified in sub paragraph (i) above, establish the correct functioning of the emission system through the appropriate reading of the OBD device and simultaneous checking of the proper functioning of the OBD system.~~

Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
3.1.1.1 Exhaust emissions control equipment	Visual inspection.	(a) Emission control equipment fitted by the manufacturer absent, modified or obviously defective. (b) Leaks which would affect emission measurements	X	X X	

Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
3.1.1.2 Gaseous emissions	Measurement using an exhaust gas analyser in accordance with the requirements ^a . Alternatively, for vehicles equipped with suitable on-board diagnostic systems, the proper functioning of the emission system can be checked by appropriate reading of the OBD device and checks on the proper functioning of the OBD system in place of emission measurements at engine idle in accordance with the manufacturer's conditioning recommendations and other requirements. ^a	<p>(a) Either, gaseous emissions exceed the specific levels given by the manufacturer;</p> <p>(b) Or, if this information is not available, the CO emissions exceed:</p> <p>(i) for vehicles not controlled by an advanced emission control system, 4,5%¹, or, 3,5%² according to the date of first registration or use specified in requirements^a.</p> <p>(ii) for vehicles controlled by an advanced emission control system, at engine idle: 0.5%, at high idle: 0.3%, or at engine idle: 0.3%³, at high idle: 0.2%³, or at engine idle: 0.2%⁴ at high idle: 0.1%⁴ according to the date of first registration or use specified in requirements^a.</p> <p>(c) Lambda outside the range 1 ± 0.03 or not in accordance with the manufacturer's specification.</p> <p>(b) OBD readout indicating significant malfunction.</p>		X	
				X	
				X	

^a "requirements" are laid down by type-approval requirements at the date of approval, first registration or first entry into service as well as retrofitting obligations or national legislation in the country of registration.

¹ Vehicles registered or first entry into service before 1 October 1986.

² Vehicles registered or first entry into service after 1 October 1986.

³ Vehicles registered or first entry into service after 1 July 2008.

⁴ Vehicles type approved, at least according to limits of Regulation No. 83, 06 series of amendments.

3.1.2. Vehicles with compression ignition engines:

~~3.1.2.1. Vehicles with compression ignition engines, exhaust system~~

~~Visual inspection of any emission control equipment fitted by the manufacturer in order to check that it is complete and in a satisfactory condition and that there are no leaks.~~

~~3.1.2.2. Vehicles with compression ignition engines, smoke~~

~~3.1.2.2.1. Exhaust gas opacity to be measured during free acceleration (no load from idle up to cut off speed) with gear lever in neutral and clutch engaged.~~

~~3.1.2.2.2. Vehicle preconditioning:~~

~~3.1.2.2.2.1. Vehicles may be tested without preconditioning although for safety reasons checks should be made that the engine is warm and in a satisfactory mechanical condition.~~

~~3.1.2.2.2.2. Except as specified in paragraph 3.1.2.2.4.5., no vehicle will be failed unless it has been preconditioned according to the following requirements.~~

~~(a) Engine shall be fully warm, for instance the engine oil temperature measured by a probe in the oil level dipstick tube to be at least 80 °C, or normal operating temperature if lower, or the engine block temperature measured by the level of infrared radiation to be at least an equivalent temperature. If, owing to vehicle configuration, this measurement is impractical, the establishment of the engine's normal operating temperature may be made by other means, for example by the operation of the engine cooling fan.~~

~~(b) Exhaust system shall be purged by at least three free acceleration cycles or by an equivalent method.~~

~~3.1.2.2.3. Test procedure:~~

~~3.1.2.2.3.1. Engine, and any turbo charged fitted, to be at idle before the start of each free acceleration cycle. For heavy duty diesels, this means waiting for at least 10 seconds after the release of the throttle.~~

~~3.1.2.2.3.2. To initiate each free acceleration cycle, the throttle pedal must be fully depressed quickly and continuously (in less than one second) but not violently, so as to obtain maximum delivery from the injection pump.~~

~~3.1.2.2.3.3. During each free acceleration cycle, the engine shall reach cut off speed or, for vehicles with automatic transmissions, the speed specified by the manufacturer or if this data is not available then two thirds of the cut off speed, before the throttle is released. This could be checked, for instance by monitoring engine speed or by allowing a sufficient time to elapse between initial throttle depression and release, which in the case of vehicles categories M₂, M₃, N₂ and N₃, should be at least two seconds.~~

~~3.1.2.2.4. Limit values~~

~~3.1.2.2.4.1. The level of concentration must not exceed the level recorded on the plate pursuant to Regulation No. 24, Revision 2.~~

~~3.1.2.2.4.2. Where this information is not available or where Contracting Parties' competent authorities decide not to use it as a reference, the level of~~

concentration must not exceed the level stated by the manufacturer or the limit values of the coefficient of absorption that are as follows:

Maximum coefficient of absorption for:

- (a) — naturally aspirated diesel engines = 2.5 m^{-1} ;
- (b) — turbo charged diesel engines = 3.0 m^{-1} ;
- (c) — a limit of 1.5 m^{-1} shall apply to the following vehicles that conform to the limit values shown in:
 - (i) — Row B of the table in paragraph 5.3.1.4. of Regulation No. 83, Revision 2 (Light Duty Vehicle Diesel Euro 4);
 - (ii) — Row B1 of the tables in paragraph 5.2.1. of Regulation No. 49, Revision 3, Amendment 1 (Heavy Duty Vehicle Diesel Euro 4);
 - (iii) — Row B2 of the tables in paragraph 5.2.1. of Regulation No. 49, Revision 3, Amendment 1 (Heavy Duty Vehicle Diesel Euro 5);
 - (iv) — Row C of the tables in paragraph 5.2.1. of Regulation No. 49, Revision 3, Amendment 1 (Heavy Duty Vehicle EEV);

or limit values in later amendments of Regulation No. 83, or limit values in later amendments of Regulation No. 49.

Where identification to paragraph 5.3.1.4. of Regulation No. 83, Revision 2 or to paragraph 5.2.1. of Regulation No. 49, Revision 3, Amendment 1 is not possible, then the above shall apply to vehicles registered or first put into service after 1 July 2008.

- ~~3.1.2.2.4.3. Vehicles registered or put into service for the first time before 1 January 1980 are exempted from these requirements.~~
- ~~3.1.2.2.4.4. Vehicles shall only be failed if the arithmetic means of at least the last three free acceleration cycles are in excess of the limit value. This may be calculated by ignoring any measurements that depart significantly from the measured mean, or the result of any other statistical calculation that takes account of the scattering of the measurements. Contracting Parties may limit the maximum number of test cycles.~~
- ~~3.1.2.2.4.5. To avoid unnecessary testing, Contracting Parties may, by way of exception from the provisions of paragraph 3.1.2.2.4.4., fail vehicles which have measured values significantly in excess of the limit values after less than three free acceleration cycles or after the purging cycles (or equivalent) specified in sub-paragraph 3.1.2.2.2.(b). Equally to avoid unnecessary testing, Contracting Parties may, by way of exception from the provisions of paragraph 3.1.2.2.4.4., pass vehicles which have measured values significantly below the limit values after less than three free acceleration cycles or after the purging cycles (or equivalent) specified in sub-paragraph 3.1.2.2.2.(b).~~

Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
	<p>impractical, the establishment of the engine's normal operating temperature may be made by other means, for example by the operation of the engine cooling fan.</p> <p>(ii) Exhaust system shall be purged by at least three free acceleration cycles or by an equivalent method.</p> <p>(c) Test procedure:</p> <p>(i) Engine and any turbocharger fitted, to be at idle before the start of each free acceleration cycle. For heavy-duty diesels, this means waiting for at least 10 seconds after the release of the throttle.</p> <p>(ii) To initiate each free acceleration cycle, the throttle pedal must be fully depressed quickly and continuously (in less than one second) but not violently, so as to obtain maximum delivery from the injection pump.</p> <p>(iii) During each free acceleration cycle, the engine shall reach cut-off speed or, for vehicles with automatic transmissions, the speed specified by the manufacturer or if this data is not available then two thirds of the cut-off speed, before the throttle is released. This could be checked, for instance, by monitoring engine speed or by allowing a</p>				

Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
	<p>sufficient time to elapse between initial throttle depression and release, which in the case of vehicles of categories M₂, M₃, N₂ or N₃ should be at least two seconds.</p> <p>(iv) Vehicles shall only be failed if the arithmetic means of at least the last three free acceleration cycles are in excess of the limit value. This may be calculated by ignoring any measurement that departs significantly from the measured mean, or the result of any other statistical calculation that takes account of the scattering of the measurements. Contracting Parties may limit the number of test cycles.</p> <p>(v) To avoid unnecessary testing, Contracting Parties may fail vehicles which have measured values significantly in excess of the limit values after less than three free acceleration cycles or after the purging cycles. Equally, to avoid unnecessary testing, Contracting Parties may pass vehicles which have measured values significantly below the limits after less than three free acceleration cycles or after the purging cycles.</p>				

^a "requirements" are laid down by type-approval requirements at the date of approval, first registration or first entry into service as well as retrofitting obligations or national legislation in the country of registration.

¹ Vehicles type approved to the limit values shown in:

- (i) Row B of the table in paragraph 5.3.1.4. of Regulation No. 83, Revision 2 - (Light Duty Vehicle Diesel - Euro 4);
- (ii) Row B1 of the tables in paragraph 5.2.1. of Regulation No. 49, Revision 3, Amendment 1 - (Heavy Duty Vehicle Diesel - Euro 4);
- (iii) Row B2 of the tables in paragraph 5.2.1. of Regulation No. 49, Revision 3, Amendment 1- (Heavy Duty Vehicle Diesel - Euro 5);
- (iv) Row C of the tables in paragraph 5.2.1. of Regulation No. 49, Revision 3, Amendment 1- (Heavy Duty Vehicle - EEV);

or registered or first entry into service after 1 July 2008.

² Vehicles type approved, at least according to limits of Regulation No. 83, 06 series of amendments.

3.2. Test equipment

Vehicle emissions are tested using equipment designed to establish accurately whether the limit values prescribed or indicated by the manufacturer have been complied with.

4. Noise emissions

ITEMS	PRINCIPAL REASONS FOR REJECTION
Noise suppression system	missing (partially or completely) or seriously defective

Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
4.1. Noise suppression system	Subjective evaluation (unless the inspector considers that the noise level may be borderline, in which case a standing noise test using a noise meter may be conducted).	(a) Noise levels in excess of those permitted in the requirements ^a .		X	
		(b) Any part of the noise suppression system loose, likely to fall off, damaged, incorrectly fitted, missing or obviously modified in a way that would adversely affect the noise levels.		X	X

^a "requirements" are laid down by type-approval requirements at the date of approval, first registration or first entry into service as well as retrofitting obligations or national legislation in the country of registration.

5. ~~OTHER SAFETY AND ENVIRONMENT-RELATED ITEMS~~

ITEMS	PRINCIPAL REASONS FOR REJECTION
Hydraulic braking system	—leaking

5. Other items related to the protection of the environment

Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
5.1. Fluid leaks	Visual inspection including fuel tanks and tubing, engine and transmission, hydraulic braking system, power steering, additional hydraulic units, battery and air conditioning and refrigeration system.	(a) Any excessive fluid leak likely to harm the environment or to pose a safety risk to other road users.		X	X

6. Electromagnetic interference suppression (Recommended)

Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
5.1. Radio-interference^b (X)	Visual inspection	(a) Any requirements of the requirements^a not met.	X		

^a "requirements" are laid down by type-approval requirements at the date of approval, first registration or first entry into service as well as retrofitting obligations or national legislation in the country of registration.

^b (X) Identifies items which are related to the condition of the vehicle and its suitability for use on the road but which are not considered essential in a periodic inspection."