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**Update of Resolution R.E.6 related to requirements
for testing equipment, for skills and training of
inspectors and for supervision of test centres****Proposal for an amendment to Resolution R.E.6 on the
administrative and technical provisions required for carrying
out the technical inspections according to the technical
prescriptions specified in Rules annexed to the 1997
Agreement****Submitted by the Informal Working Group on Periodical Technical
Inspection***

This document was prepared by the Informal working group periodic technical inspection. It proposes an amendment to an amendment to Resolution R.E.6 on the administrative and technical provisions required for carrying out the technical inspections according to the technical prescriptions specified in Rules annexed to the 1997 Agreement (report ECE/TRANS/WP.29/1139, para. 120). It is based on informal document WP.29-175-14 distributed at the 178th session of the World Forum for Harmonization of Vehicle Regulations (WP.29). It is submitted to WP.29 for consideration, and transmission to WP.29 Working Parties to include the document on their agendas and provide comments according to their areas of expertise, at its November 2019 sessions.

* In accordance with the programme of work of the Inland Transport Committee for 2018–2019 (ECE/TRANS/274, para. 123 and ECE/TRANS/2018/21/Add.1, cluster 3.1), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

Proposal for an amendment to Resolution R.E.6 on the administrative and technical provisions required for carrying out the technical inspections according to the technical prescriptions specified in Rules annexed to the 1997 Agreement

1. Introduction

1.1. The draft guidelines for performing an initial roadworthiness roadside check have been worked out in accordance with the item F of the Terms of Reference of the Informal working group on periodical technical inspection (ECE/TRANS/WP.29/1139, Annex VI).

1.2. The guidelines are to be considered as part of Resolution R.E.6 on the administrative and technical provisions required for carrying out the technical inspections according to the technical prescriptions specified in Rules annexed to the 1997 Agreement (ECE/TRANS/WP.29/1132).

2. Proposal

2.1. Add to Resolution R.E.6 on the administrative and technical provisions required for carrying out the technical inspections according to the technical prescriptions specified in Rules annexed to the 1997 Agreement (ECE/TRANS/WP.29/1132) the new paragraph as follows:

"6. Guidelines for performing initial technical roadside inspections

6.1. General approach

6.1.1. Technical roadside inspection is a form of vehicle assessment that makes considerable contribution towards ensuring in service compliance and a crucial element for the achievement of a continuous high level of roadworthiness of vehicles throughout their use.

6.1.2. In order to avoid unnecessary administrative burdens and costs, and to improve the efficiency of inspections, it should be possible for competent national authorities to select, as a priority, vehicles operated by undertakings not complying with road safety and environmental standards, while vehicles which are operated by responsible and safety-minded operators and properly maintained should be rewarded with less frequent inspections. The selection of vehicles for roadside inspection based on the risk profile of their operators could prove to be a useful tool for the purposes of checking high-risk undertakings more closely and more often.

6.1.3. The risk rating system shall provide the basis for a targeted selection of vehicles operated by undertakings with a poor record concerning compliance with vehicle maintenance and roadworthiness requirements. It shall take into account results from both periodic roadworthiness tests and technical roadside inspections.

6.1.4. The risk rating system shall consider the following parameters for determining a risk rating for the undertaking concerned:

- (a) Number of deficiencies;
 - (b) Severity of deficiencies;
 - (c) Number of technical roadside inspections or periodic and voluntary roadworthiness tests;
 - (d) Time factor.
- 6.1.5. Contracting Parties should undertake the appropriate technical and administrative arrangements for the operation of risk rating systems.
- 6.1.6. For the attribution of a risk profile to an undertaking, Contracting Parties may use the criteria set out in section 6.6. to the guidelines. That information shall be used to check undertakings with a high-risk rating more closely and more often. The risk rating system shall be operated by the competent authorities of the Contracting Parties.
- 6.1.7. Contracting Parties may allow additional voluntary roadworthiness tests. Information on compliance with roadworthiness requirements obtained from voluntary tests may be taken into account in order to improve the risk profile of an undertaking.
- 6.1.8. The use of mobile inspection units reduces the delay and costs for operators as more detailed inspections can be performed directly at the roadside. The closest practicable testing centres and designated roadside inspection facilities may also be used to carry out more detailed inspections.
- 6.1.9. Personnel conducting technical roadside inspections should be appropriately trained or qualified, including for the purpose of carrying out visual inspections in an efficient manner. Inspectors performing more detailed technical roadside inspections should have at least the same skills and fulfil the same requirements as those performing roadworthiness tests in accordance with the 1997 Vienna Agreement. Contracting Parties should require inspectors carrying out inspections in designated roadside inspection facilities or using mobile inspection units to fulfil these or equivalent requirements approved by the competent authority.
- 6.1.10. Another aspect to take into account is that roadside inspections have to be performed on foreign as well as domestically registered vehicles. This creates some differences, namely on the availability of data that may be used for selection.
- 6.1.11. This means that the inspector has to define the extent of the inspection taking into account his/ her knowledge, experience and applicable legal framework.
- 6.1.12. This recommendation suggests the approach for vehicle selection and initial inspection of the vehicle and taking into consideration that the final content of the inspection is a decision for the inspector based on the actual condition of the vehicle.
- 6.1.13. The initial technical roadside inspection may be done in combination with other inspections, i.e. tachograph, the International Carriage of Dangerous Goods by Road (ADR), the International Carriage of Perishable Foodstuffs (ATP).
- 6.1.14. For the purposes of this guidelines:
- (a) “Operator” means a natural or legal person operating the vehicle as its owner or authorised to operate the vehicle by its owner;

- (b) “Mobile inspection unit” means a transportable system of test equipment needed to carry out more detailed technical roadside inspections, staffed by inspectors who are competent to carry out more detailed roadside inspection;
 - (c) “Designated roadside inspection facility” means a fixed area for the performance of initial and/or more detailed technical roadside inspections which may also be equipped with permanently installed test equipment.
- 6.2. Steps of the process
 - 6.2.1. The process of the initial technical roadside inspection is divided into the following steps:
 - (a) Selection (section 6.3);
 - (b) Initial inspection (section 6.4);
 - (c) Outcome and consequences (section 6.5).
 - 6.2.2. Selection is the process that identifies the vehicles on the road to be subjected to an initial inspection based on visual indications or intelligence that indicates that the vehicle may have roadworthiness deficiencies. Risk rating data should also be taken into account where available. Selection may be based on a view of the general condition of the vehicle, intelligence gathering, and unobtrusive drive-by emissions measurement by remote sensing devices. Remote sensing techniques may be used to identify overload, gross polluters, fuel leaks, overheating of brakes or other potential deficiencies of vehicles on the move, in combination of automatic registration plate recognition devices or not. Selection procedures do not prevent the random selection of vehicles for roadside inspections.
 - 6.2.3. The initial inspection should mainly be based on visual facts, allowing for the possibility of a more in depth inspection where the inspector considers it appropriate.
 - 6.2.4. The results of the initial inspection may lead to a statement on deficiencies as defined in the UN Rules, annexed to the 1997 Vienna Agreement:
 - (a) No deficiencies;
 - (b) Minor deficiencies;
 - (c) Major deficiencies;
 - (d) Dangerous deficiencies;
 - (e) Or any combination of the above mentioned deficiencies.
 - 6.2.5. Regardless of the deficiencies found, the inspector may decide that it is necessary to conduct a more detailed inspection. In such cases, he/she may also recommend the scope of that more detailed inspection.
- 6.3. Selection
 - 6.3.1. When identifying vehicles that will be subject to an initial technical roadside inspection, inspectors may select, as a priority, vehicles operated by undertakings with a high-risk profile as referred to in risk rating systems. Vehicles may also be selected randomly for inspection, or where there is a suspicion that the vehicle presents a risk to road safety or to the environment.
 - 6.3.2. The selection process depends very much on the availability of vehicle specific data, of resources and on the possibility of stopping vehicles on the road.

- 6.3.3. This is a non-exhaustive list of criteria that may be used for the selection of vehicles:
- (a) Risk rating related to the vehicle;
 - (b) Risk rating related to the operator;
 - (c) General condition of the vehicle (corrosion, insecure components, etc.);
 - (d) Any kind of misalignment, i.e. axles not following the same line or the vehicle tilting to one side. When assessing vehicle tilt, the inspector may take into consideration the kneeling system of some buses;
 - (e) Direct measurement of real-driving particulate emissions by remote sensing devices;
 - (f) Inoperative light/systems not working;
 - (g) Excessive visual smoke emission;
 - (h) Unusual noises or vibrations;
 - (i) Abnormal speed;
 - (j) General behaviour of the driver;
 - (k) General behaviour of the vehicle;
 - (l) Evidence of fluid leaks;
 - (m) General condition of the cargo security.
- 6.3.4. Remote sensing techniques may be used to identify overload, gross polluters, fuel leaks, overheating of brakes or other potential deficiencies of vehicles on the move, in combination with automatic registration plate recognition devices or not. As such, selection should be conducted at sites where vehicles likely pass under load and their exhaust opacity can be visually scrutinized or their particulate emissions can be screened via remote sensing devices.
- 6.4. Initial technical roadside inspection
- 6.4.1. Check of the documents
- 6.4.1.1. The initial inspection shall start by checking the documents of the vehicle.
- 6.4.1.2. Documents to be requested from the driver if not available electronically are:
- (a) Proof of registration in case of international transport;
 - (b) Report of the last periodical inspection (where appropriate);
 - (c) Report of the last roadside inspection (where appropriate).
- 6.4.1.3. This does not exclude checking other relevant documents.
- 6.4.1.4. The previous inspection report may be used to define inspection items according to section 6.4.3.
- 6.4.1.5. Where the roadworthiness certificate or a roadside inspection report demonstrates that an inspection of one of the items listed in the UN Rules has been carried out in the course of the preceding three months, the inspector shall not check that item, except where such a check is justified on the grounds of an obvious deficiency. The way to identify if there is ground for an obvious deficiency may be the criteria for the initial selection defined in section 6.3.2 of this recommendation.

- 6.4.2. Visual assessment of the technical condition of the vehicle
- 6.4.2.1. Following the document check described in section 6.4.1, the inspector carries out a visual assessment of the general technical condition of the vehicle as viewed mainly from the outside of the vehicle. Entering the vehicle is to be decided by the inspector according to his/her criteria, and taking into account the national regulations on roadside inspection.
- 6.4.2.2. This visual inspection should be performed in an efficient manner, keeping in mind that the main purpose of the initial inspection is to assess the general condition of the vehicle and to decide whether the vehicle should undergo a more detailed technical inspection according to the Rules.
- 6.4.2.3. The inspector will undertake the checks according to the UN Rules. Also, the inspector shall verify, when possible, whether any deficiencies indicated in the previous inspection reports (roadside inspection report and roadworthiness certificate) have been rectified.
- 6.4.2.4. During this visual inspection, it is recommended that the inspector walks around the vehicle and looks for evidence of defects which could pose a threat to road safety and to the environment, such as, but not limited, to the following items:
- (a) Vehicle identification;
 - (b) General condition of the vehicle (body, chassis, etc.);
 - (c) Condition of tyres and wheels;
 - (d) Condition of brake discs/drums where visible through the wheels;
 - (e) Rear view mirrors or vision devices;
 - (f) Horn;
 - (g) Glazing and view to the front;
 - (h) Dashboard tell-tales;
 - (i) Lights and markings;
 - (j) Windshield wipers;
 - (k) Side protection;
 - (l) Rear underrun protection;
 - (m) Spray suppression devices;
 - (n) Spare wheel mounting;
 - (o) Towing device where fitted;
 - (p) Air pipes/electrical connection from tractor to trailer;
 - (q) Leakage other than air conditioning condensed water;
 - (r) Unusual noises, air leaks;
 - (s) Visual smoke emission or unobtrusive drive-by emissions measurement;
 - (t) Fuel tank and filler cap;

- (u) General condition of the interior of the vehicle – only for M2 and M3 vehicles and taking into account the considerations of entering the vehicle stated in the 1st paragraph of this section.
- 6.4.2.5. The inspection of the external part of the vehicle is to be performed by a visual inspection with the inspector and the vehicle at ground level. The inspection of the internal part of the vehicle is made close to the driver's seat and the inspector may enter the vehicle as stated above.
- 6.4.2.6. The criteria to be applied are those defined in the UN Rules.
- 6.4.3. Technical inspection by any method deemed appropriate
- 6.4.3.1. The initial inspection is mainly visual but the inspector may check an item using any method deemed appropriate. This may e.g. include access to on board diagnostics (OBD) information if available to the Inspector and in the vehicle, as well as the use of equipment such as infrared thermometers to check the temperature of brakes, scales to check the weight of the vehicle, portable opacimeters to check the exhaust emissions, on board diagnostics (OBD) access devices, etc.
- 6.4.3.2. The tests shall be carried out using techniques and equipment currently available, without the use of tools to dismantle or remove any part of the vehicle. The test may also include a verification as to whether the respective parts and components of the vehicle correspond to the safety and environmental requirements that were in force at the time of approval or, if applicable, at the time of retrofitting.
- 6.4.3.3. Where the design of the vehicle does not allow the application of the test methods laid down in the Rules, the test shall be conducted in accordance with the recommended test methods accepted by the competent authorities.
- 6.4.3.4. The inspector may also request that any deficiency be rectified without delay.
- 6.4.4. Cargo securing
- 6.4.4.1. The inspector may carry out a visual assessment of the securing of the vehicle's cargo in accordance with national regulations.
- 6.5. Outcome
- 6.5.1. The results of the initial inspection may lead to a statement on deficiencies as defined in the UN Rules annexed to the 1997 Agreement:
- (a) No deficiencies;
 - (b) Minor deficiencies;
 - (c) Major deficiencies;
 - (d) Dangerous deficiencies;
 - (e) Or any combination of the above-mentioned deficiencies.
- 6.5.2. Regardless of the deficiencies found, the inspector may decide that it is necessary to conduct a more detailed inspection. In such cases, he/she may also recommend the scope of that more detailed inspection.
- 6.5.3. The inspector decides, based on the findings of the initial inspection, whether the vehicle should be subject to a more detailed inspection. A more detailed inspection may for instance be justified in the following cases:

- (a) Vehicles identified as gross polluters by means of remote sensing techniques or emitting excessive visual smoke;
 - (b) Evidence of a potentially defective brake(s) either visual or with the use of temperature monitoring equipment;
 - (c) General condition of vehicle or several minor defects suggest that further roadworthiness defects may be found;
 - (d) Major and/or dangerous defects have already been found.
- 6.5.4. As an example, evidence suggests that the vehicle is running overweighted or that the load has moved.
- 6.5.5. Deficiencies of the identification of the vehicle may trigger the procedures related to stolen vehicles. This does not prevent the vehicle from being selected for a more detailed inspection based on other requirements or for other reasons.
- 6.6. Elements of the risk rating system
- 6.6.1. The risk rating system shall provide the basis for a targeted selection of vehicles operated by undertakings with a poor record concerning compliance with vehicle maintenance and roadworthiness requirements. It shall take into account results from both periodic roadworthiness tests and technical roadside inspections.
- 6.6.2. The risk rating System shall consider the following parameters for determining a risk rating for the undertaking concerned:
- (a) Number of deficiencies;
 - (b) Severity of deficiencies;
 - (c) number of technical roadside inspections or periodic and voluntary roadworthiness tests;
 - (d) Time factor.
- 6.6.3. The deficiencies shall be weighted according to their severity, using the following severity factors:
- (a) Dangerous deficiency = 40;
 - (b) Major deficiency = 10;
 - (c) Minor deficiency = 1.
- 6.6.4. The evolution of an undertaking's (vehicle's) situation shall be reflected by applying a lower weighting to "older" inspection results (deficiencies) than to more "recent" ones, using the following factors:
- (a) Year 1 = last 12 months = factor 3;
 - (b) Year 2 = months 13-24 = factor 2;
 - (c) Year 3 = months 25-36 = factor 1.
- This shall only apply for the calculation of the overall risk rating.
- 6.6.5. The risk rating shall be calculated using the following formulas:
- (a) The formula for the overall risk rating:

$$RR = [(D Y1 \times 3) + (D Y2 \times 2) + (D Y3 \times 1)] / [\#C Y1 + \#C Y2 + \#C Y3]$$

Where,

RR = overall risk rating score

D_{Yi} = total for the defects in year 1, 2, 3

D_{Y1} = (#DD x 40) + (#MaD x 10) + (MiD x 1) in year 1

#... = number of ...

DD = dangerous deficiencies

MaD = major deficiencies

MiD = minor deficiencies

C = checks (technical roadside inspections or periodic and voluntary roadworthiness tests) in year 1, 2, 3

(b) The formula for the annual risk rating:

$$AR = [(\#DD \times 40) + (\#MaD \times 10) + (MiD \times 1)] / \#C$$

Where

AR = annual risk score

#... = number of...

The annual risk shall be used to assess the evolution of an undertaking over the years.

6.6.6. The classification of undertakings (vehicles) based on the overall risk rating shall be performed in such a way that the following distribution within the listed undertakings (vehicles) is reached:

- (a) < 30 % low risk;
- (b) 30-80 % medium risk;
- (c) > 80 % high risk."