

Draft proposals for a new Rule

I. Introduction

The text reproduced below was prepared by the expert from Informal Working Group on Periodical Technical Inspections (IWG on PTI). It is based on informal document GRSG-123-12 distributed at the 123d session of the Working Party on General Safety Provisions (GRSG). The modifications to the existing text of GRSG-123-12 are marked in bold for new or strikethrough for deleted characters. The document contains as well the abstract from UN Regulation 144 for reference and justification.

II. Proposal

Rule No. 5

Uniform provisions for periodical technical inspections of accident emergency call systems

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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 safety requirements;
- 1.2. Wheeled vehicles as defined in paragraph ~~2.4~~ **3 covered by the scope of UN Regulation 144** used in international transports 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. «*Accident Emergency Call System (AECD)*» in accordance with UN Regulation 144;
- 2.2. «*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;
- 2.3. «*International Technical Inspection Certificate*» means a certificate about the first registration after manufacture and the periodical technical inspections of wheeled vehicles in compliance with the provisions of Article 1 and Appendix 2 of the Agreement;
- 2.4. «*MIL*» means malfunction indicator light;
- 2.5. «*Periodical Technical Inspection*» means a periodical administrative uniform procedure by which the authorized technical Inspection Centres responsible for conducting the inspection tests declare, after carrying out the required verifications, that the wheeled vehicle submitted conforms to the requirements of this Rule;
- 2.6. «*Type approval*» means an administrative procedure by which the approval authorities of one Contracting Party declare, after carrying out the required verifications that a type of vehicle, equipment or part submitted by the manufacturer conforms to the requirements of the given UN Regulation. Afterwards the manufacturer certifies that each vehicle, equipment or parts put on the market were produced to be identical with the approved product.
- 2.7. «*UN Regulation*» means a Regulation annexed to the 1958 Geneva Agreement.
- 2.8. «*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 the use of tools to dismantle or remove any part of the vehicle;
- 2.9. «*Wheeled vehicle*» means motor vehicles of categories M₁ and N₁, as specified in Consolidated Resolution on the Construction of Vehicles (RE.3) (TRANS/WP.29/78/Rev.2, as amended), used in international transport and fitted with Accident Emergency Call System;

- 2.10. «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.

3. Periodicity of technical inspections

<i>Vehicle categories</i>	<i>Maximum inspection intervals</i>
Passenger-carrying motor vehicles: M ₁ Goods vehicles: N ₁	Four years after the first registration (or if the vehicle is not required to be registered, date of first use) and every two years thereafter

4. Technical inspection

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

Following verification, the International Technical Inspection Certificate shall confirm the compliance with at least the provisions of this annex.

5. Methods of inspection

The method of inspection set out in the annex 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 use, where made possible the technical characteristics of the vehicle and where the necessary data is made available, electronic interface.

6. Main reasons for rejection and assessment of defects

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

- 6.1. «*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.
- 6.2. «*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 still may be driven to a place for repair and afterwards to a specified location for the repair to be checked.

- 6.3. «*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.
- 6.4. 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 next more serious group if their combined effect makes the vehicle more dangerous.

7. 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 and issuing the International Technical Inspection Certificates.

Annex

Minimum inspection requirements

The inspection of accident emergency call system (if fitted in accordance with Requirements¹⁾) shall cover at least the items listed below.

<i>Mandatory</i>		<i>Recommendation</i>			
<i>Item</i>	<i>Method</i>	<i>Main Reasons for Rejection</i>	<i>Defect Assessment</i>		
			<i>MiD</i>	<i>MaD</i>	<i>DD</i>
1. Fitment and configuration	Visual inspection complemented, where made possible by the technical characteristics of the vehicle and where the necessary data is made available, with the use of electronic interface <i>Justification: defined above in clause 5.</i>	a) System or any component missing		X	
		(b) Software version incorrect <i>Justification: R144 does not contains an requirement to display the software version on the vehicle.</i>	X		
		e) System coding incorrect <i>Justification: R144 does not contains an requirement to display the system coding.</i>	X		
2. Condition	Visual inspection complemented, where made possible by the technical characteristics of the vehicle and where the necessary data is made available, with the use of electronic interface <i>Justification: defined</i>	(a) System or components damaged	X		
		(b) AECS MIL indicates any kind of failure of the system	X		
		e) AECS electronic control unit module failure <i>Justification: R144 includes it under self-test function.</i>	X		
		(d) Mobile network communication device failure <i>R144 includes under self-test function</i>	X		

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
	above in clause 5.	(e) GNSS signal failure <i>Justification: a GNSS signal failure can't be detected by the system. The GNSS receiver and it's antenna is part of the self-test function.</i>	X		
		(f) Audio components not connected	X		
		g) Power source not connected or insufficient charge <i>Justification: R144 includes it under self-test function (26.5.3)</i>	X		
		(h) System indicates failure via the electronic vehicle interface	X		
3. Performance	Visual inspection complemented, where made possible by the technical characteristics of the vehicle and where the necessary data is made available, with the use of electronic interface	a) Minimum set of data (MSD) incorrect <i>Justification: R144 does not contain a requirement to provide a function to display the content of an MSD. A manual trigger to send an MSD to a real PSAP seems to be not appropriate.</i>	X		
		(b) Audio components not working in order <i>R144 does not contain a requirement to provide a self-test or a test function for the audio device. A manual trigger of an eCall to a real PSAP to check the audio function seems to be not appropriate.</i>	X		

¹ «Requirements» are laid down by type-approval requirements at the date of first registration or first entry into service as well as retrofitting obligations or national legislation.

Abstract from UN R144

26.5.3.1. The manufacturer shall provide the Type Approval Authority with an explanation and technical documentation which shows, in overall terms, how the malfunction indication strategy is achieved. This documentation shall be maintained by the manufacturer and shall be available for inspection by the Technical Service at the time of the type approval. This shall at least cover the following items:

Table 3

Template of information for self-test function

<i>Item</i>		<i>Comments</i>
<i>Component</i>	<i>Failure type</i>	
Control module	Internal failure	Internal failure = e.g. hardware failure, watch-dog, software checksum, software image integrity, ...
Communication module	Electrical connection / module communication failure	A failure in the module can be detected by the absence of digital communication between the control module and the communication module.
Mobile network communication device	internal failure	Item necessary because it is a basic function: a failure implies that the AECS cannot perform its function.
GNSS receiver	Electrical connection / module communication failure	
GNSS receiver	Internal failure	
Mobile network antenna	Electrical connection	
GNSS antenna	Electrical connection	
Crash Control Unit (CCU)	Electrical connection	e.g. crash detection sensor system, triggering device, ...
CCU	Internal failure	If not in good condition, then the automatic emergency call is not possible. If CCU internal failure verification is not part of AECC approval (Part Ia), then it shall be subject to AECD approval (Part Ib)
Power supply	Electrical connection	Dedicated battery is connected
SIM	not present	This item only applies if a removable SIM card is used.
Back-up power supply (if fitted)	The state of charge, threshold for warning at the discretion of the manufacturer	Failure if the state of charge is at a critical level according to the manufacturer.