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Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations**Working Party on Passive Safety****Sixty-first session**

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Item 3 (a) of the provisional agenda

Global technical regulation No. 9 (Pedestrian safety):**Proposal for Amendment 2 (Phase 2) of the global technical regulation****Draft Amendment 2****Submitted by the expert of the United States of America***

The text reproduced below was prepared by the expert of the United States of America on global technical regulation No. 9 Phase 2 (GTR9-PH2) concerning the injury assessment reference values (IARVs) of the flexible pedestrian legform impactor (FlexPLI) that was introduced into the gtr. It is based on GRSP-60-17 which was distributed without a symbol at the sixtieth session of the Working Party on Passive Safety (GRSP) (ECE/TRANS/WP.29/GRSP/60, paras. 6 and 7). The modifications to the text of the draft Amendment 2 to global technical regulation (gtr) (ECE/TRANS/WP.29/GRSP/2014/5) are marked in bold for new characters or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2016–2017 (ECE/TRANS/254, para. 159 and ECE/TRANS/2016/28/Add.1, cluster 3.1), 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.



I. Proposal

Part I, statement of technical rationale and justification, paragraphs 217 and 218, amend to read:

"I. Statement of technical rationale and justification

A. Phase 1

...

B. Phase 2

...

5. Recommendations and Limitations for introducing the flexible lower legform impactor

217. At the sixth meeting of the IWG, the **United States of America** noted that while it would be in a position to agree with the injury risk curves within the timeline of the amendment 2 of this gr, it may not be in a position to agree to injury risk values without delaying the timeline. The expert from the **United States of America** suggested that, given that cost benefits may vary depending on the fleets of different countries, the gr should include only the injury risk curves, with Contracting Parties choosing appropriate injury assessment reference values (IARVs) when implementing the gr in national legislation. **In subsequent discussions to this meeting, the United States of America agreed to accept the proposed IARVs so Phase 2 of the gr could move forward, and would propose changes to the IARVs through the normal United Nations process if changes to the IARVs are warranted by a benefits analysis conducted during the adoption process in their domestic regulations.**

218. While the IWG rejected the suggestion of including only the injury risk curves, it is understood that the **United States of America** will conduct a full analysis of the impacts of the IARVs of the gr. The **United States of America** will conduct fleet testing with the FlexPLI to evaluate the benefits. It would be also examined possible incremental improvements, such as the effect of lowering injury threshold values. These efforts could result in future recommendations to adjust the injury risk values and other aspects of this gr. **The United States of America will report back to the United Nations any recommended adjustments to the IARVs once its cost/benefits analysis has been completed.**

..."

Part II, Text of the Regulation, amend to read:

"II. Text of the Regulation

Paragraph 5.1.1., amend to read:

"5.1.1. When tested in accordance with paragraph 7.1.1. (flexible lower legform to bumper), the absolute value of the maximum dynamic medial collateral

ligament elongation at the knee shall not exceed {22 mm}, and the maximum dynamic anterior cruciate ligament and posterior cruciate ligament elongation shall not exceed 13 mm. The absolute value of dynamic bending moments at the tibia shall not exceed {340 Nm}. In addition, the manufacturer may nominate bumper test widths up to a maximum of 264 mm in total where the absolute value of the tibia bending moment shall not exceed 380 Nm. A Contracting Party may restrict application of the relaxation zone requirement in its domestic legislation if it decides that such restriction is appropriate."

II. Justification

Phase 2 proposes to amend gtr No. 9 on pedestrian safety by introducing the flexible pedestrian legform impactor (FlexPLI) as a single harmonized test tool, in order to enhance the level of protection for pedestrian lower legs. The National Highway Traffic Safety Administration (NHTSA) has expressed concern that IARVs for this gtr will be able to meet the needs for injury mitigation in the United States of America. We previously suggested including the injury risk curves only, with Contracting Parties choosing appropriate IARVs when implementing this gtr in national legislation. We recognize that the informal working group added language to Part A (now proposed part I) in an attempt to address the concerns of the expert of the United States of America and IARVs are currently in square brackets to both allow for further discussion and to provide additional time for the United States of America to complete its benefits analysis. In order to allow this Phase of the gtr to move forward, the United States of America is submitting this proposal.
