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World Forum for Harmonization of Vehicle Regulations**Working Party on Brakes and Running Gear****Seventy-sixth session**

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Item 4 of the provisional agenda

Regulation No. 55 (Mechanical couplings)**Proposal for Supplement 4 to the 01 series of amendments to
Regulation No. 55 (Mechanical couplings)****Submitted by the Chair of the informal group on Regulation No. 55 ***

The text reproduced below was prepared by the informal group of experts on Regulation No. 55 to introduce amendments on requirements on movable couplings, increased range of application of remote controls to couplings similar to C50-X and G50-X, possible increase of characteristic values of standard couplings and to include of further requirements on the mounting of couplings. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106, 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.

I. Proposal

Paragraph 2.6.3, amend to read:

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|------------------------|---|
| "2.6.3. Class C | Clevis type drawbar |
| | couplings with a 50 mm diameter pin, with a jaw as well as an automatic closing and locking pin on the towing vehicle for connecting to the trailer by means of a drawbar eye - see Annex 5, paragraph 3.:" |

Paragraph 2.6.3.1, amend to read:

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| "2.6.3.1. Class C50-1 to C50-7 | Standard 50 mm pin diameter clevis type drawbar couplings." |
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Paragraph 2.6.3.2, amend to read

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| "2.6.3.2. Class C50-X | Non-standard 50 mm pin diameter clevis type drawbar couplings." |
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Annex 5,

Insert new paragraph 1.4., to read:

"1.4. Movable coupling devices (couplings that can be moved without separation)

A movable coupling device shall be designed for positive mechanical engagements in service position. In case of manual movement the actuating force shall not supersede 20 daN. The movement shall be limited by mechanical end stops"

Paragraphs 1.4. to 1.5., to be renumbered 1.7. to 1.8.

Delete paragraph 3.7.5.

Paragraph 12.1., amend to read:

"12.1. Devices for remote indication and remote control are permitted only on automatic **drawbar couplings and automatic fifth wheel couplings** ~~coupling devices of Classes C50 X and G50 X.~~"

Headline of Table 3, amend to read:

"Minimum characteristic values for standard flange type ball couplings.

Legend of Table 3, delete the word "maximum".

Headline of Table 5, amend to read:

"Minimum characteristic values for standard drawbar couplings"

Legend of Table 5, delete the word "maximum".

Headline of Table 7, amend to read:

"Minimum characteristic values for standard drawbar eyes"

Headline of Table 9, amend to read

"Minimum characteristic values for Class L toroidal drawbar eyes"

Headline of Table 13, amend to read

"**Minimum** characteristic values for Class K hook type couplings"

Annex 6,

Paragraph 3.5.3., for "0.25" read "0.6".

Paragraph 3.5.3., amend to read:

"...closure to open ~~and it shall not cause any damage.~~ **The closure/locking device shall be functional after the test.**"

Paragraph 3.6.1., amend to read:

"...The permissible stresses in the case of calculation shall be in accordance with paragraph **3.6.4.** of ISO 7641/1:**2012.**

...

The permissible stresses based on the design masses for trailers having a total mass, C, over 3.5 tones shall be in accordance with paragraph **3.6.4.** of ISO 7641/1:**2012.**"

Paragraph 3.6.2., Paragraph 3.6.3., amend to read:

"...The permissible stresses in the case of calculation shall be in accordance with paragraph **3.6.4.** of ISO 7641/1:**2012.**"

II. Justification

1. In this proposal, as the class C is defined as a clevis type coupling, the class T is no longer necessarily constructed as clevis type. In fact most of approved class T couplings have neither a coupling jaw nor a coupling pin. This needs to be clarified.

2. In addition, this kind of coupling is constructed and tested as having less play than other couplings.

The coupling type class T is foreseen for couplings where the trailer and the truck are not uncoupled in their daily business, so a device to guide a drawbar under the pin position in order to perform a fast and safe coupling procedure is dispensable, the connection will be done at the manufacturer or in workshops

3. Today an increasing number of coupling types (especially ball-couplings, which are movable, retractable or bendable and so on) are developed taking into consideration esthetic requirements. The minimum requirement to the mechanism of this kind of ball coupling devices shall be stated in order to avoid accidents when a trailer is coupled.

4. Remote indications help the driver to assure safe coupling procedures. It is much safer and innovative to use couplings with remote control and remote indication, in particular, if remote indication is integrated in the dashboard. In the today's version of the Regulation, remote control safety features and remote indications are only permitted for one unique class of couplings i.e. C50-X. It is not permitted for coupling of classes C50-1until C50-7, G50-X, S (automatic pin couplings with bolts different from 50mm) as well as the common automatic fifth wheel coupling with 90 mm pin diameter. This proposal is intended to correct this situation.

5. Due to commercial reasons sometimes couplings are tested and approved against higher characteristic values than detailed in the actual list of values for standardized couplings of the particular class. If every part of a coupling combination fulfils minimum requirement, a safe combination is given. Any device being tested against higher characteristic values still comply with every requirement of the standard device, but with a higher security for the whole coupled combination. It makes no sense, that these couplings lose their description and become class S.

6. The actual static value ($0.25 \times D$) is based on experiences with standard drawbar couplings, where the forces in opening direction are caused by friction between pin and drawbar eye, according to former research. In our opinion this reference is not correct. With hook coupling is presented a different situation.

The drawbar-eye has direct force application on the closure/locking device.

With hook couplings all experiences are showing a higher practical force in opening direction caused directly by the drawbar eye (class L) in on-road condition.

The actualised value is taken from international agricultural regulations with similar coupling - and attachment devices.

It is also found in German national regulation and here it was based on research projects with good experience in national German approvals.

7. Within the new issue of ISO7641/1 there is no modification at all on the requirements on drawbars as mentioned in UN Regulation No. 55, 01 serie, annex 6, paras. 3.6.1 to 3.6.3.

The newly issued ISO 7641/1 takes into account the UNECE vocabulary and more clarification. It gives also a criterion to decide, if a dynamic test to drawbars is mandatory. The amended reference to the given standard will be a good progress to road safety, economic point of view and unification of handling by the technical services.
