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**Economic Commission for Europe**

Inland Transport Committee

**World Forum for Harmonization of Vehicle Regulations**

**Working Party on Brakes and Running Gear (GRRF)**

**Seventy-seventh session**

Geneva, September 2013

Item ? of the provisional agenda

**Coupling devices – Regulation No. 55**

 Proposal for an Amendment to Regulation No. 55
(Uniform provisions concerning the approval of mechanical coupling components of combinations of vehicles)

 Submitted by the experts from GRRF ECE R55 informal group

The text reproduced below was prepared by the experts from ECE R55 informal group in order to introduce amendments regarding

Requirements on movable ~~ball~~ 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

Addition of further requirements to the mounting of couplings.

The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

 I. Proposal

*Regulation item 2.6.3,* amend to read

“**2.6.3. Class C Drawbar clevis type**

couplings with a 50 mm diameter pin**,** and with a **~~clevis~~** jaw and 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.:

*Regulation item 2.6.3.1,* amend to read

“2.6.3.1. Class C50-1 to C50-**7** Standard 50 mm pin diameter drawbar **clevis type** couplings.

*Regulation item 2.6.3.2,* amend to read

“2.6.3.2. Class C50-XNon-standard 50 mm pin diameter drawbar **clevis type** couplings.

*Regulation chapter 6*: add new item 6.4. “

* 1. **When mounting coupling devices of Classes B, D, E, H, L and S on trailers, a value of 32 tonnes for the maximum mass T of the towing vehicle must be taken into account for D-value calculation. If the D-value of the coupling device is not sufficient for T = 32 tonnes, the resulting restriction on the mass T of the towing vehicle or the mass of the vehicle combination must be stated in the vehicle type-approval certificate of the trailer.**

*Annex 5,* insert new item

**“1.4. Movable ~~ball~~ coupling devices ~~(ball couplings that can be moved without sepatarion to a position under the vehicle chassis when not used)~~**

 **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 daN. The movement shall be limited by mechanical end stops”**

Renumber annex 5 old item 1.4. to 1.5 until 1.7. to 1.8

*Annex 5 item* 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 TABLE 3,* amend to read

 “**Minimum** characteristic values for standard flange type ball couplings” In the legend of table 3 delete the word “maximum”.

*Headline TABLE 5,* amend to read

 “**Minimum** characteristic values for standard drawbar couplings” In the legend of table 5 delete the word “maximum”.

*Headline TABLE 7,* amend to read

 “**Minimum** characteristic values for standard drawbar eyes”

*Headline TABLE 9,* amend to read

 “**Minimum** characteristic values for Class L toroidal drawbar eyes”

*Headline TABLE 13,* amend to read

 “**Minimum** characteristic values for Class K hook type couplings**”**

*Annex 6 Item 3.5.3* amend 0,25 to read **0,6**.

*Annex 6 Item 3.5.3* amend the end of the text read:

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

*Annex 6 Item 3.6.1* amend 7641/1:1983 to read **7641/1:2012** (2 times)

*Annex 6 Item 3.6.2* amend 7641/1:1983 to read **7641/1:2012** (1 time)

*Annex 6 Item 3.6.3* amend 7641/1:1983 to read **7641/1:2012** (1 time)

 II. Justification

1. As the class C now is clearly defined as a coupling clevis type, the class T is no more 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.

More than this is it hard to construct couplings without play with pin couplings, this kind of couplings are 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

1. indication of general value 32t is missing

Annex 7 of the regulation had been copied from 94/20/EC. ~~It~~ **The first paragraph** ~~was cancelled~~ ~~the 1 paragraph~~ of this EC-annex: “General requirements…” of the 94/20/EC **was cancelled**, because there was just a paragraph in the regulation R55. Most general requirements are given at several places in the ECE R55, but not the requirement on the tractor**/truck** weight to be taken into account.

This detailed requirement is needed for the approval of vehicles with regard to the fitting as well as for a basic of D-value calculation. The new item is exactly copied from 94/20/EC annex 7 chapter 1.

1. Today an increasing number of coupling types (especially ball-couplings, which are movable, retractable, bendable and else are developed due to esthetic requirements). The minimum equirement to the mechanism of this kind of ball coupling devices shall be stated. This is in order to avoid accidents, when a trailer is coupled.
2. Remote indications ~~may~~ help**s** the driver to assure safe coupling procedures. It is much more safe~~ty~~ 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~~ **regulation** version **of today** the safety feature of remote control and remote indication is ~~only~~ permitted to C50-X **only~~,~~.** ~~so~~ **Hence** ~~that~~ C50-1until C50-7**,** ~~and also~~ G50-X,~~but also~~ class S automatic pin couplings with bolts different from 50mm and the very common automatic 5th wheel coupling with 90 mm pin diameter are excluded. There is no reason to exclude.
3. 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 fulfills minimum requirement a safe combination is given. Any device being tested against higher characteristic values does still comply with every requirement of the standard device, but with a higher security for the whole coupled combination. It makes no sense, that ~~this~~ **these** couplings ~~loose~~ **lose** their description and become class S.
4. The actual static value (0,25 \* D) is based of 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 ~~keeper~~ **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.

1. The new issue of ISO 7641/1 takes into account the ECE vocabulary and more clarification. It give also a help to decide, if a dynamic test to drawbars is ~~obligatory~~ **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 sevices.