



Federal Ministry
of Transport and
Digital Infrastructure

Informal document GRRF-82-37
82nd GRRF, 20-23 September 2016
Agenda item 4

Informal Working Group on Agricultural Coupling Devices and Components (ACDC) Present Status



Background: Report of 81st GRRF (1 – 5 February 2016)

The expert from **Germany** introduced GRRF-81-09 **proposing ToR for a new IWG on Agricultural Coupling** that would remove the Agricultural Coupling provisions from Regulation No. 55 and would include them in a **new Regulation**. The proposal received some comments to **limit the number of classes**, as reproduced in GRRF-81-09-Rev.1. **GRRF agreed with the proposal for a new IWG that would take into consideration the work done by the Task Force on Agricultural Couplings (GRRF-81-10)**. GRRF agreed in principle with the proposal of the expert from Spain proposing generic provisions to be defined, which could be used for the approval of specific agricultural coupling at the national level. The secretariat noted that GRRF-81-10 was based on a former version of Regulation No. 55 and proposed that the **new IWG on Agricultural Coupling would take into consideration the latest version of Regulation No. 55**. GRRF agreed that **the expert from Germany would chair the IWG** and that **the expert from the Comité Européen des groupements de constructeurs du machinisme agricole (CEMA) would provide the secretariat** of the group. GRRF requested that the **IWG would first revise and clarify the ToR** of the group.



TOR Agreed by the IWG (text identical to GRRF-81-09e_rev1)

1. The informal group shall prepare a proposal for a new UN Regulation No. 55-A "Uniform Provisions Concerning the Approval of Mechanical Coupling Components of Combinations of Agricultural Vehicles".
2. The informal group shall follow the structure and concept of the present UN Regulation No. 55 also with regard the limited number of coupling classes and will consider the peculiarities of agricultural vehicles when determining the requirements and test methods.
3. As a basis for the discussions the informal group shall use the present UN Regulation No. 55 and the results achieved by the Task Force Group Agricultural Couplings (TFAC) in the frame of the work of IWG R 55 (GRRF 81-10).
4. The informal group will consider the scope to be applied to vehicles of category T, R and S as defined in the Consolidated Resolution (R.E.3).
5. The target completion date for the work of the informal group shall be the 84th session of GRRF in September 2017.
6. A final decision on regulatory proposals rests with WP29 and the Contracting Parties.



RoP Agreed by the IWG (text identical to GRRF-81-09e_rev1)

1. The informal group is a sub group of GRRF, and is open to Contracting Parties, Vehicle Manufacturers, Component Manufacturers and Suppliers, Technical Services, Mechanical Strength Experts, etc.
2. A Chairman and a Secretary will manage the informal group.
3. The official working language of the informal group will be English.
4. All documents and/or proposals must be submitted to the Secretary of the group in a suitable electronic format in advance of the meeting. The group may refuse to discuss any item or proposal which has not been circulated 10 working days in advance.
5. An agenda and related documents will be made available on the website by the Secretary of the group, in advance of all scheduled meetings.
6. Decisions will be reached by consensus. When consensus cannot be reached, the Chairman of the group shall present the different points of view to GRRF. The Chairman may seek guidance from GRRF as appropriate.



RoP Agreed by the IWG (text identical to GRRF-81-09e_rev1)

7. The progress of the informal group will be routinely reported to GRRF – wherever possible as an informal document and presented by the Chairman, the Secretary or their representative(s).
8. All working documents shall be distributed in digital format. Meeting documents should be made available to the Secretary for publication on the dedicated website.



Document ACDC-01-03e

Scope

- This Regulation lays down the requirements which mechanical coupling devices and components shall meet in order to be regarded internationally as being mutually compatible.
- This Regulation applies to devices and components intended for vehicles of category T, R or S (agricultural vehicles) intended to form a combination of vehicles.
- This Regulation applies to:
 - standard devices and components as defined in paragraph 2.3.;
 - non-standard devices and components as defined in paragraph 2.4.;
 - non-standard miscellaneous devices and components as defined in paragraph 2.5.
- This regulation does not apply to power lifts (three-point hitch) or tractor lower link arms and their connections to the towed vehicle.



Document ACDC-01-03e

Classes of Agricultural Couplings

- Class a: Ball type 80 mm according to ISO 24347:2005
- Class b: Coupling head 80 mm according to ISO 24347:2005
- Class c: Clevis-type drawbar couplings with a pin of 30 mm to 38 mm diameter according to ISO 6489-2:2002
- Class d: Drawbar eyes 40 mm according to ISO 8755:2001
- Class e: Non-standard drawbars like forked and other drawbars, overrun devices etc.
- Class f: Towing brackets
- Class g: Hitch hooks according to ISO 6489-1:2001



Document ACDC-01-03e

Classes of Agricultural Couplings

- Class h: Piton-type couplings according to ISO 6489-4:2004
- Class i: Drawbar couplings with pin 18 mm, 30 mm and 38 according to ISO 6489-3:2004
- Class p: Non-standard mounting plates
- Class q: Clevis-type drawbar couplings with pin 18 mm, 28mm, 43mm and 50 mm according to ISO 6489-5:2011
- Class r: Drawbar eyes according to ISO 5692-3:2011
- Class s: Coupling devices and components which do not conform to any of the classes a to r and which are used ~~, for example, for special applications or are devices~~ unique to some countries and covered by existing national **or international** standards



Document ACDC-01-03e

Requirements

- Dimensions according to Annex 5
- Strength according to Annex 6
 - Dynamic test (alternating and/or pulsating, 2,000,000 cycles for steel)
 - Static test up to 40 km/h and only for Classes I, q and r
- Mounting requirements (height above ground) according to Annex 7 (requirement identical to Reg. (EU) 2015/208 Annex XXXIV)



Document ACDC-01-03e

Assignment of mechanical coupling devices of towing vehicles or self-propelled machines and towed vehicles

Coupling device on the towing vehicle	Coupling device on the towed vehicle
Class a	Class b
Class c	Class d1
Class c	Class d2
Class g	Class d3
Class g	Class d4
Class h	Class d3
Class i-18	Class r1
Class i-30	Class d1, d2 or r2
Class i-38	Class d3, d4 or r3
Class q1	Class r1
Class q2	Class r2
Class q3	Class r3



Solved issues from five meetings of TFAC

Results of the first three meetings of TFAC (Document: TFAC 04-11)

- Complete document with agreed changes (basis R 55) available on TFAC website and submitted to TFAC. Comments received from Italy (TFAC 05-02e and TFAC 05-03e)

Small Group on formulas and test procedure for agricultural towing devices (TFAC 04-04, TFAC 04-12, TFAC 05-04e)

- TFAC agreed on formulas of Paragraph 3 of TFAC 05-04e of values V and Fv
- Value "a" shall receive dimension m/s^2
- In Paragraph 7 of TFAC 05-04e mentioned that small group will prepare proposal for test procedure. TFAC concluded that present test procedures can remain unchanged except formulas for values V and Fv

Swedish proposals on remote controls (TFAC 03-13, TFAC 04-07)

- Requirement not suitable for agricultural vehicles
- TFAC doubts whether definition "automatic coupling" applicable for agricultural vehicles.
- To be discussed in IWG ACDC



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Italian proposals to include CUNA couplings in Annex 8 of TFAC 04-11(TFAC 04-09, TFAC 05-02e and TFAC 05-03e)

- Italian proposals will be considered in the next working document.

Static vs. dynamic testing

- Consensus on following compromise was found:
"Instead of the dynamic test as described in Annex 9, mechanical couplings of classes i, q and r intended to be mounted to agricultural vehicles with a maximum design speed not exceeding 40 km/h may be tested according to ... (static test)."
- Consensus that physical strength test for drawbars of towed vehicles (R and S) may be waived and replaced by theoretical check also at maximum design speeds above 40 km/h.



First meeting of ACDC

- Held in Bonn on 14th of July 2016
- Participants: 18 Experts from
 - Contracting Parties
 - Technical Services
 - Manufacturers of tractors, manufacturers of agricultural trailers and implements and manufacturers of coupling devices
 - Chairman: Andreas Schauer (Germany)
 - Secretary: Stephan Belaen (CEMA)



Results of the first meeting of ACDC

- Agreement on ToR and RoP
- Reduction of categories:
 - Delete all subclasses and keep only the main classes
 - e. g. class a becomes class a80, a80-1, a80-2 etc. are deleted
- Class j included for trailer drawbars to be connected to class I (tractor drawbar)
- Definition of class s stricter:
 - “Coupling devices and components which do not conform to any of the classes a to r and which are used, ~~for example, for special applications or are devices~~ unique to some countries and covered by existing national ~~or international~~ standards.”
- Amendments agreed during the 1st meeting of ACDC have been included in ACDC-01-03e Rev. 1



Next steps of ACDC

- Comments on ACDC-01-03e Rev. 1 expected until 30th September from the members of ACDC
- Discussion of the comments during next meeting
- Improve the working document
 - Using the right format
 - Improve drawings
- Discussion of test procedures and load presumptions up to 40 km/h and above
- Next meetings:
 - 25th October 2016, Munich
 - 10th January 2017, location to be determined
- Interim report in 83rd GRRF
- Final document to be submitted to GRRF by June 2017



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- Questions and recommendations from GRRF welcome

Thank you for your attention!

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