

## Proposed amendment to GCU Appendix 9

### Record of amendments

Amended by	Date	Paragraph	Amendment
Jean-Marc Blondé	13/03/2020		In accordance with the final result of the JNS Broken Wheels of 28/11/2019
TTI WG decision	24/03/2020		See minutes of TTI WG meeting of March 2020
Approved by SG WU	26/05/2020		See minutes of WU SG meeting of May 2020
Approved by JC GCU	15/06/2020		

<b>Title:</b>	Handling of wheels that have been subjected to thermal overload
<b>Proposed amendment made by: RU / keeper / other body</b>	CFF Cargo AG
<b>Proposed amendment concerns:</b>	<input checked="" type="checkbox"/> Appendix 9 <input type="checkbox"/> Appendix 11
<b>Proposer:</b>	Jean-Marc Blondé
<b>Location, date:</b>	Olten, 13/03/2020
<b>Concise description:</b>	Amendments stemming from the final JNS Broken Wheels document dated 28/11/2019 regarding handling of wheels that have been subjected to thermal overload.

**1. Starting point (current situation):**

<b>1.1. Introduction</b>
In 2016/2017, in certain types of European freight traffic, cracks and breakages occurred on BA 314/ZDB29 (with chamfer under the flange) and BA004 wheels. To reduce risk, short-term measures were taken on 28/07/2017 on operating records, wagon maintenance and dismantled wheelset axles. The JNS Normal Procedure "Broken Wheels" taskforce initiated an in-depth analysis as a second step. The final JNS document replaces and updates the short-term risk reduction measures and defines long-term measures and proposals with the aim of updating standards, regulations and contractual provisions.
<b>1.2. Mode of operation</b>
-
<b>1.3. Anomaly / description of problem</b>
This proposal does not take account of the items relevant for Appendix 9 to the GCU. The final JNS report can be referred to for other details.

<b>1.4. Does this concern a recognised code of practice* (e.g. DIN, EN)?</b>
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes In accordance with the final conclusions of the JNS, various standardisation bodies have had amendment proposals. The exact schedule is not known at this time.  <small>* "Code of practice: a written set of rules that, when correctly applied, can be used to control one or more specific hazards." (source: Regulation EC 352/2009, Article 3)          "Technical provisions laid down in writing or conveyed verbally and pertaining to procedures, equipment and modes of operation which are generally agreed by the populations concerned (specialists, users, consumer and public authorities) to be suitable for achieving the objective prescribed by law, and which have either proven their worth in practice or, it is generally agreed, are likely to within a reasonable period of time" (translation/source: BMJ Handbuch der Rechtsförmlichkeit – German Ministry of Justice)</small>

**2. Target situation**

<b>2.1. Elimination of anomaly/problem (goal)</b>

### 3. Additional text and/or change relates only to proposed amendments to GCU Appendix 9:

Amendment colour code:

Black: Current text, for info and remains unchanged

Red: new text

Blue: (if crossed out): text to be deleted

Component	Code no.	Irregularities/Criteria/Notes	Action to be taken	Irregularity class
Solid wheel	1.2			
	1.2.1	Groove marking the minimum thickness is no longer fully visible in cross-section <sup>2)</sup>	Detach wagon	4
	1.2.2	Thermal overload due to braking <ul style="list-style-type: none"> <li>obviously recent paint burns of 50 mm or more at connection between rim and wheel plate (cracks or shelling on paint)</li> <li>traces of rust on rim (plate not painted)</li> <li>fusion of brake blocks</li> <li>deterioration of wheel tread with build-up of metal (see also no. 1.3.4)</li> <li>Uneven blueish appearance due to the effect of thermal overload</li> </ul>	Proceed in accordance with Annex 8 point 3	
	1.2.2.1	- without gauge widening of the inner faces	K + R1 (isolate brake)	4
	1.2.2.2	- with gauge widening of the inner faces	Detach wagon	5
Component	Code no.	Irregularities/Criteria/Notes	Action to be taken	Irregularity class
Tyre or corresponding part of solid wheel	1.3			
	1.3.6	Cracks and notches		
	1.3.6.1	Crack at the interface between the wheel tread and the front edge	Detach wagon	5
	1.3.6.2	Sharp-angled notches on the front face (rim or inner tyre rim) caused by tools, track brakes or clamping equipment/jaws – except for markings applied by the manufacturer	K	4

The outer groove indicates the minimum thickness (wear groove) should a wheel – as an exception – have two grooves.

		Cracks on the tread - isolated cracks		
	1.3.6.3	• Without characteristics of thermal overload	K + R1 (isolate brake)	4
	1.3.6.4	• With characteristics of thermal overload	Detach wagon	5

## Annex 8 Handling of wagons

### Point 3: With wheels displaying the criteria for thermal overload as per no. 1.2.2

For wheels displaying indications of thermal overload as per no. 1.2.2 and not being marked as being able to withstand high thermal stresses,

- measure the widening of the inner faces (E value) at the running surface of the rail at 3 points, at distances of 120°, and verify no. 1.7.1.
- **Inspect the tread for isolated cracks in the cross-section.**
- Annex 12 must be completed.

#### 4. Reason:

The cracks in the wheel rim were thermal in origin. Improving detection of wheel-sets that have been subjected to thermal overload reduces the potential for faults.

The risk limitation measures proposed by the JNS Broken Wheels to prevent cracks and broken wheels, i.e. the direct proposal to transpose the results of the JNS; have been incorporated in Appendix 9 to the GCU.

#### 5. Assess potential positive/negative impacts

*E.g. on operations, costs, administration, interoperability, safety, competitiveness, etc., using a scale of 1 (very low) to 5 (very high).*

*Justify observations*

Impacts:

Operations, interoperability, impact on costs & administration, competitiveness: 3

Safety: 5

## 6. Safety appraisal of proposed amendment

Description of actual/target system, and scope of change to be made (see points 1 and 2).

The risk study becomes obsolete insofar as only the known repositories are implemented

Safety study conducted by:

<b>6.1. Does the change make impact on safety?</b>	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
Reason: Cracks and notches appeared on wheels in 2016/2017. Immediate measures were taken in 2017. An in-depth analysis was subsequently carried out. Long-term measures were defined in the JNS final output document, with the various committees, organisations, etc. mandated to undertake modifications.	
<b>6.2. Is the change significant?</b>	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Reason: see template. Attach the significant change test template	
<b>6.3. Determining and classifying risk:</b>	<input checked="" type="checkbox"/> deleted
6.3.1. Effect of change in normal operation: 6.3.2. Effect of change in the event of disruption / deviation from normal operation: 6.3.3. Potential misuse of system: <input type="checkbox"/> No <input type="checkbox"/> Yes (describe possible misuse):	
<b>6.4. Have safety measures been applied?</b>	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
For each type of risk, one of the following risk acceptance criteria is to be selected: <ul style="list-style-type: none"> <li>• "Code of practice" (acknowledged technical rules)</li> <li>• Use of reference system</li> <li>• Explicit risk estimate</li> </ul>	
<b>6.5. Has a risk analysis been submitted to the assessment body?</b>	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
Assessment body: Attach the verdict reached by the assessment body: final JNS document, 28/11/2019	[appendix]