

Proposed amendments to GCU Appendix 9

Amendment history

Amended by	Date	Paragraph	Amendment
Jean-Marc Blondé	30/1/2018		Modified following the minutes of the TTI WG
Jean-Marc Blondé	20/3/2018		Modified following TTI WG meeting of March
TTI WG decision	21/3/2018		See minutes of TTI WG meeting of March 2018
WU SG decision	29/5/2018		See minutes of WU SG meeting of May 2018

Title:	Wheelset overload
Proposed amendment concerns RU/keeper/other:	SBB Cargo AG
Proposed amendment concerns:	<input checked="" type="checkbox"/> Appendix 9 <input type="checkbox"/> Appendix 11
Proposer:	Jean-Marc Blondé
Location, date:	Olten, 30/1/2018
Concise description:	Amendment of overload procedure in accordance with EN 15313-2016

1. Starting point (current situation):

1.1. Introduction

Further to the publication of EN-15313-2016, wheelset overload has been defined more precisely.

1.2. Mode of operation

1.3. Anomaly/description of problem

According to EN-15313-2016, "Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance", wheelsets subjected to loads exceeding the permissible load per axle must be inspected. The requirements specified by the standard must be respected.

1.4. Does this concern a recognised code of practice* (e.g. DIN, EN)?

No Yes (state which): EN 15313-2016

* "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)

2. Target situation

2.1. Elimination of anomaly/problem (goal)

The procedure laid down in Appendix 9 must be amended on the basis of the standard. It is now necessary to determine the overload percentage using the formula and to then perform the maintenance operations required in accordance with the level of overload identified.

3. Additional text and/or modifications (relates 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

Annex 8:

Handling of wagons:

2. With overloading

Instructions on the procedure to follow for onward conveyance following identification of overloading and for taking the necessary corrective measures

In the event that the maximum load per wheel, wheelset or wagon has been identified as exceeded by means of technical measuring devices (train inspection devices) or on the evidence of visible signs on the wagon, or if other irregularities have been noted, the following procedure must be applied.

Once the wagon has been removed, the weight of the wagon, wheelset or wheel must be checked by means of scales should no data from the dynamic measurement systems in the infrastructure be available.

Wheelset overload percentage:

On detection, a value "C" must be measured for the load, taking into account the accuracy of the means of measurement "p". The overload percentage is calculated using the following formula:

$$\% \text{ overload} = 100 \times ((C - p) / \text{nominal load}) - 1$$

* if the accuracy of the means of measurement is unknown, "p" = 0 is applied.

- ~~If the weight of the load exceeds the max. load limit by 10% or less on wheelsets of over 20 t (UIC Leaflet 510-1: type B or "+25 t") or 5% or less for wheelsets weighing 20 t or less (UIC Leaflet 510-1: type A or other),~~ If wheelset overload exceeds 2% and is less than or equal to 10%, the load must be rectified. ~~effectué. Suite à une investigation technique,~~ A visual check shall be performed in accordance with the "overloading" checklist (Annex 9). **The wagon shall be marked with the K label.**
- ~~If the weight of the load exceeds the max. load limit by over 10% on wheelsets of over 20 t (UIC Leaflet 510-1: type B or "+25 t") or over 5% for wheelsets weighing 20 t or less (UIC Leaflet 510-1: type A or other),~~ If wheelset overload exceeds 10%, transshipment is required. Following a technical assessment, the wagon shall be marked with the K label in accordance with the "overloading" checklist (Annex 9) and conveyed empty to a workshop located nearby.

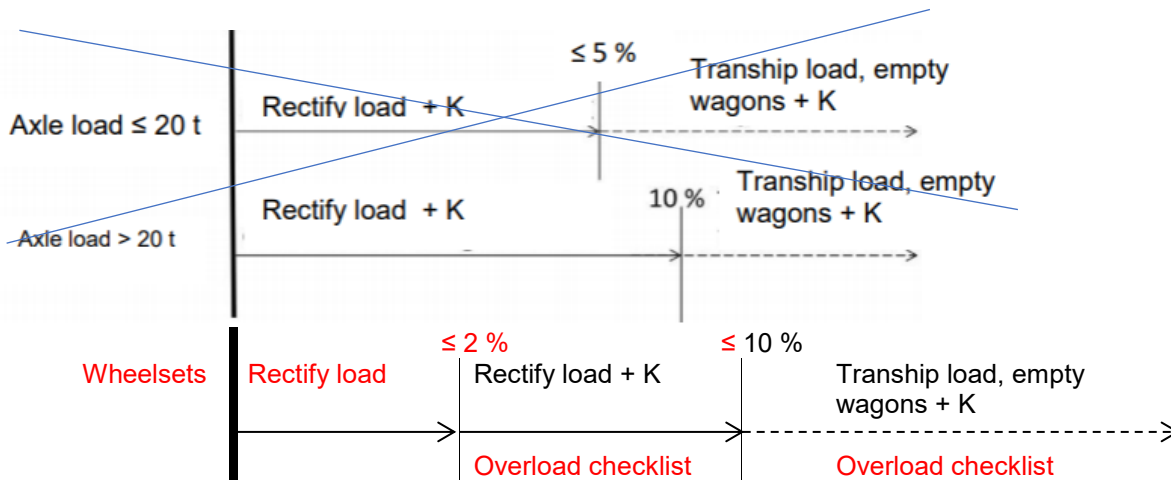
If the permissible wheelset load cannot be identified on the wheelset, ~~proceed in accordance with the approach for types smaller/equal to 20 t (UIC Leaflet 510-1: type A or other).~~ **the wagon must be conveyed to a workshop located nearby.**

Wheelset markings

If wheelset overload is greater than 2%, the wheelset ~~for which the maximum load limit has been exceeded~~ must be marked with a white cross on the axle.

Summary:

Maximum axle load limit exceeded



**Annex 9:
Checklists**

2. Inspection of fitness to run for an overloaded wagon

Reference: Annex 8, point 2: procedure for onward conveyance following identification of overloading and for taking the necessary ~~corrective measures~~. **rectification**.

The measured values of **wheelsets** must be documented for the purpose of traceability (Annex 12).

Wagon checklist

Inspection of wagon overloading	1. Wheelsets/running gear	<p>Check for damage visually.</p> <ul style="list-style-type: none"> • Wheelsets > 20 t > 2% and ≤ 10% overload • Wheelsets ≤ 20 t ≤ 5% overload <p>Check for damage visually and measure the three points after unloading the wagon (empty).</p> <ul style="list-style-type: none"> • wheelsets > 20 t > 10% overload • wheelsets ≤ 20 t > 5% overload <p>Check visually for damage, deformation and cracks on the bogie frame.</p>
	2. Springs	Check visually for damage, deformation and cracks on the suspension springs and spring suspension.
	3. Brake	Check visually for damage, deformation and cracks on the brake rigging.
	4. Underframe	Check visually for damage, deformation and cracks on the underframe.
	5. Raw/pushing device	Check visually for damage, deformation and cracks on the draw and pushing device. Measure the height of the buffers.
	6. Wagon body	Check visually for damage, deformation and cracks on the wagon body.

4. Reason:

The standard EN 15313-2016 is an international reference for handling of overloaded wheelsets. It differs from the provisions of Appendix 9 and prescribes stricter limit values and actions.

EN 15313 does not make allowance for unilateral (single-sided) overload, whereby only a single wheel plate is affected. For reasons of safety, the existing provisions of Appendix 9 therefore remain valid in as much as the limit value and actions ("Rectify") have also been adapted accordingly.

5. Assess potential positive/negative impacts

*Assess the possible positive and negative impacts (operations, costs, administration, interoperability, safety, competitiveness, etc.), using a scale from 1 (very low) to 5 (very high):
Justify observations*

Positive impacts:

Operations, Interoperability, Safety, Competitiveness: Value 3

Safety: Value 4

6. Safety appraisal of proposed amendment

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

Performance of risk analysis is unnecessary where only recognised standards are implemented.

Risk analysis conducted by:

6.1 Does the change have impact on safety?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Reason: /	
6.2 Is the change significant?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Reason: see template Attach the "significant change" test template.	
6.3 Determining and classifying risk:	<input checked="" type="checkbox"/> N/A
6.1.1 Effect of change in normal operation: 6.1.2 Effect of change in the event of disruption/deviation from normal operation: 6.1.3 Potential misuse of system: <input type="checkbox"/> No <input type="checkbox"/> Yes (describe possible misuse):	
6.4 Have safety measures been applied?	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
<i>For each type of risk, one of the following risk acceptance criteria is to be selected:</i> <ul style="list-style-type: none"> • <i>Code of practice</i> • <i>Use of reference system</i> • <i>Explicit risk estimate</i> 	
6.5 Has a risk analysis been submitted to the assessment body?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Assessment body: Attach the verdict reached by the assessment body	[appendix]