Proposed amendment to Appendix 11 to the GCU

Record of amendments

Amended by	Date	Paragraph	Amendment
Jean-Marc Blondé, TTI WG	05/03/2021	Appendix 11, 8.1 a. 8.2	Registration
Christoph Gabrisch, UIC rapporteur to the GCU JC	22/03/2021	Appendix 11, 8.1 a. 8.2	In accordance with the GCU JC ad hoc WG
TTI WG decision	23/03/2021	Appendix 11, 8.1 a. 8.2	See minutes of TTI WG meeting of March 2021
WU SG decision	23/04/2021	Appendix 11, 8.1 a. 8.2	See minutes of WU SG meeting of April 2021
GCU JC decision	14/06/2021	Appendix 11, 8.1 a. 8.2	Approved

Title	High voltage warning signs (Stop!)
Proposed amend-ment made by: RU/keeper/other:	GCU Joint Committee ad hoc working group meeting chaired by UIC on 15 March 2021
Proposed amend-ment to:	☐ Appendix 9 ☒ Appendix 11
Proposer:	Jean-Marc Blondé
Location, date:	Olten, 16/03/2021
Description:	Two pictograms for high voltage warnings are documented in Appendix 11. The exact scope of application for the second (“Stop!”) warning sign is not regulated precisely. The definition proposed here will resolve this issue and will accomplish precise regulation.

1. Starting point (current situation):

1.1. Introduction

According to Appendix 11 to the GCU, the new high voltage pictogram ("Stop"!) became mandatory from 01/01/2021 for two categories of wagon:
- Wagons fitted with steps or ladders (...) and
- Wagons whose design enables them to be climbed.

It is difficult at present to determine which wagons come under the second category.
In parallel, questions have been raised as to whether the new "High voltage warning signs (Stop!) pictogram should be affixed to wagons in the second category only or if it should be affixed in combination with the "High voltage warning sign (lightning flash)" pictogram used previously for wagons in category 1.
This amendment clarifies both questions.

1.2. Mode of operation

In respect of wagons authorised under Regulation (EU) 321/2013, Implementing Regulation (EU) 2019/776 section 7.1.2 g) must be observed in particular. This text also refers to EN 15877-1:2012. This standard stipulates the "High voltage warning signs (Stop!)" pictogram for

- wagons fitted with steps or ladders where the top step or upper part of the ladder is more than 2,000 mm above rail level, or
- wagons whose design enables them to be climbed.

Excerpt from EN 15877-1 (English version):

Key:	1 yellow 2 black 3 red
Position:	On wagons fitted with steps or ladders, in the immediate vicinity of these fittings and at the eye-level height. For use on wagons where the top step or upper part of the ladder is more than 2 m above rail level or wagons where the structure enables climbing onto the wagon. This figure 36 may be contained in a blue rectangle background 400 mm by 220 mm.
Meaning:	Warning against high voltage catenary. Stop! You are entering a particularly dangerous area. Only duly authorised personnel may work in this area having first taken the necessary precautions

Figure 36 — Additional high voltage warning marking to be used if required

The condition "if necessary" at the bottom of the page was removed when the GCU was amended in 2018. According to the GCU, the second additional "High voltage (Stop!)" pictogram is <u>always</u> required if the requirements are met.

There is no question that the provisions of the GCU cover freight wagons only and not merchandise (rules for pictograms relating to load are contained in the Loading Guidelines).

1.3. Anomaly/description of problem

The scope of application for the second category, "wagons whose design enables them to be climbed", is not defined and gives rise to uncertainty for keepers and RUs. Detachment of wagons in error and interruptions to operations resulting in needless additional costs for the sector are some of the resulting problems/issues.

There is further uncertainty as to whether the wagons in the second category should bear the "Stop!" warning signs only or also the sign with the lightning flash.

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

☐No ☒ Yes (state which): EN 15877-1

* “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". (Source: BMJ Handbuch der Rechtsförmlichkeit – guide published by German Ministry of Justice)

2. Target situation

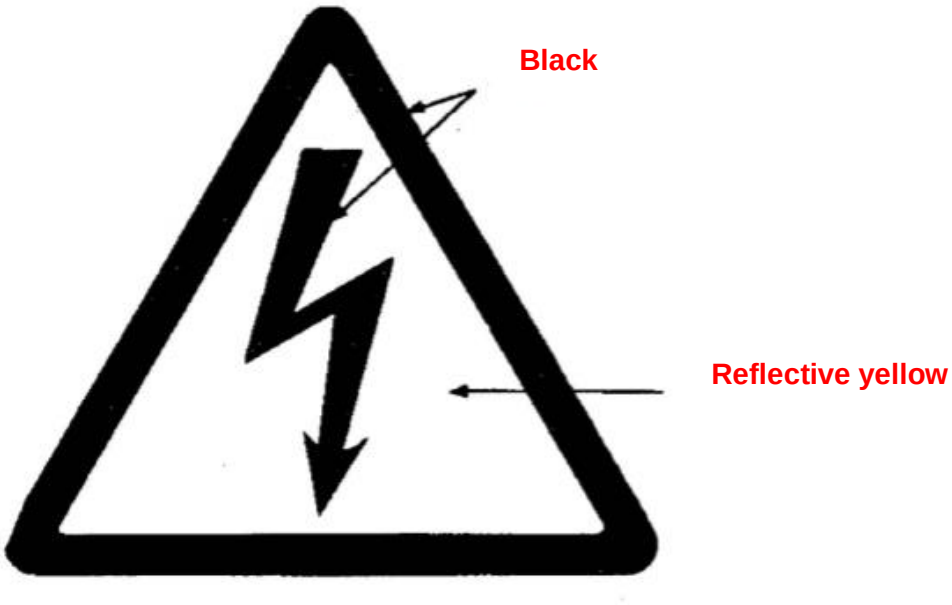
2.1. Elimination of anomaly/problem (goal)

Add the second “Stop!” pictogram to a new point 8.2, GCU Appendix 11, defining what is meant by “wagons whose design enables them to be climbed” and indicating that the pictogram with the lightning flash is not necessary for this category of wagon.

3. Amendments/additional text (relates only to proposed amendments to GCU Appendix 11):

Amendment colour code:
Black: Current text, for info and remains unchanged
Red: New text
Blue (if crossed out): text to be deleted

8.1 Signs for high voltage warning sign (lightning flash)

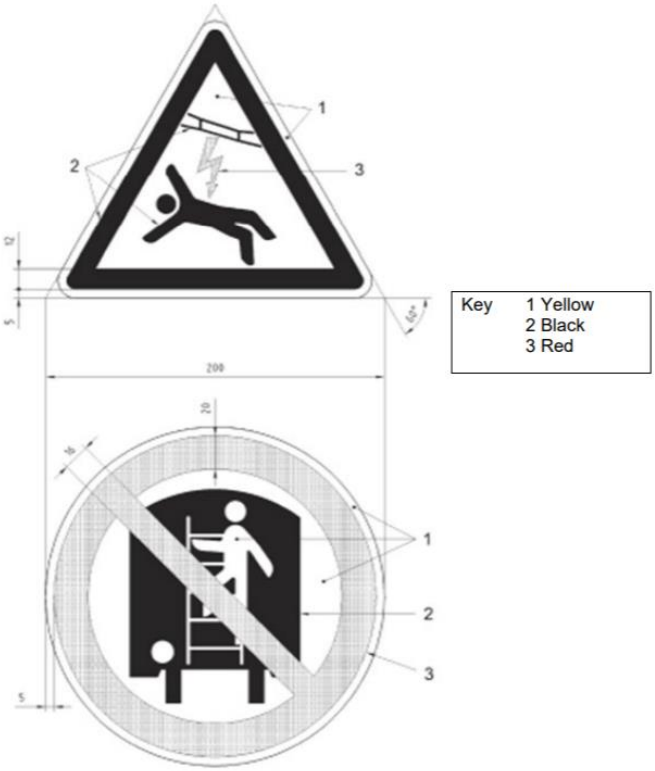


Position: On wagons fitted with steps or ladders, in the immediate vicinity of these fittings and at a height such that the sign is visible before the danger zone is reached. For use on wagons where the top step or upper part of the ladder is more than 2000 mm above rail level.

Meaning: Warning against high voltage. Stop! You are entering a particularly dangerous area. Only duly authorised personnel may work in this area having first taken the necessary precautions.

N.B.: The size of the sign will depend on where it is to be placed.

8.2 Signs for high voltage warning sign (Stop!)



Position: On wagons with steps or ladders, in the immediate vicinity of these fittings and at a height such that the sign is visible before the danger zone is reached. For use on wagons where the top step or upper part of the ladder is more than 2.0 m above rail level, or whose design enables them to be climbed. This pictogram may be shown on a rectangular blue background measuring 400 mm x 220 mm.

Meaning: Warning - high voltage. Stop! You are entering a particularly dangerous area. Only duly authorised personnel may work in this area having first taken the necessary precautions.

Remark: This marking is mandatory as of 1/1/2021.

Explanation This pictogram is intended to warn inspection personnel and unauthorised third parties of the risk of high voltage on the wagon.

Wagons whose design enables them to be climbed fulfil two criteria:
1. The external part of the end walls is fitted with horizontal elements with a maximum vertical distance of 45 cm.
2. These elements must be at least 5 cm in depth or must be comparable to steps of a ladder.

If both criteria are fulfilled, the pictogram in 8.2, “Signs for high voltage warning sign (Stop!)” must be affixed, but the pictogram in 8.1, “Sign for high voltage warning sign (lightning flash)” is not required.

Both warning pictograms (8.1 and 8.2) must be affixed on wagons equipped with ladders and steps.

4. Reasoning

On 15 March, a working group mandated by the GCU JC and composed of members of the three associations prepared a common definition, in collaboration with the requester, of what is meant by “wagons whose design enables them to be climbed”.

The working group has agreed the following framework:

- The target group for the additional “Stop!” pictogram in point 8.2 is inspection personnel and unauthorised third parties. It does not include intrepid adventurers and daredevils.

- In the interests of an understandable definition and its implementation, the definition concerns only the outer surface of the wagon’s end walls. The definition does not include the longitudinal sides. Furthermore, keepers of wagons with longitudinal sides that are easy to climb (e.g. wagons used for transport of cars) have already affixed high voltage warning signs on the sides of wagons on a voluntary basis.

- The definition must be based on existing railway standards and should not introduce principles from standards external to the railways.

Determination of limit values

- Distance between the horizontal ties: The applicable standard is **DIN EN 12561-7** Railway applications - Tank wagons - Part 7: Platforms and ladders; the French version, EN 12561-7:2011, edition 2011-10, specifies a maximum vertical distance of 30 cm for devices facilitating regular climbing on the wagon. The WG has added a tolerance of 50% (i.e. 15 cm) to this distance. Reasoning: if the maximum usage distance is again exceeded by 50% or more, a vertical climb is not as easy.

- Depth of steps: In this case, EN 12561-7 prescribes a minimum depth of 8 cm. The WG ultimately agreed on access either via a set of steps with steps of min. 5 cm in depth, or via constructive elements than can be compared to a ladder. With steps of less than 5 cm in depth, we enter into the realm of climbing as a leisure activity which, based on the working group’s assessment, is not relevant to the scope of the warning.

5. Assess potential positive/negative impacts

Assess the possible positive and negative effects (operations, costs, administration, interoperability, safety, competitiveness, etc.) on a scale of 1 (very low) to 5 (very high):
Reasoning behind amendment:

Implications
Operations, Interoperability, Competitiveness, Cost, Management:

Rating: 5, because the amendment clears up uncertainties in relation to use for all stakeholders

Safety: 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 made impact on safety?	☐No ☐ Yes
Reason:	
6.2. Is the change significant?	☐No ☐ Yes
Reason:	
6.3. Determining and classifying risk:	☐ N/A
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: ☐ No ☐ Yes (describe possible misuse):	
6.4. Have safety measures been applied?	☐No ☐ Yes
For each type of risk, one of the following risk acceptance criteria is to be selected: • *Code of practice* • *Use of reference system* • *Explicit risk assessment*	
6.5. Has a risk analysis been submitted to the assessment body?	☐No ☐ Yes
Assessment body: Attach the verdict reached by the assessment body:	[Appendix]