

Distr.: General  
22 October 2014

Original: English

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**Economic Commission for Europe**

Inland Transport Committee

**Working Party on Road Traffic Safety**

**Group of Experts on Improving Safety at Level Crossings**

**Third session**

Geneva, 23-24 October 2014

Item 2 (d) of the provisional agenda

**Survey of prevailing national legislations and/or legal arrangements**

**Submitted by the ERA, Poland and the Russian Federation**

This informal document submitted by the ERA, Poland and the Russian Federation, summarizes and analyzes the GE.1 survey findings related to prevailing national legislation and/or legal arrangements at level crossings, and proposes next steps.

## I. Background

According to the Terms of Reference of the Group of Experts on Safety at Level Crossings, the EG shall **conduct, in a coordinated manner, a cross-country survey of prevailing national legislation and/or legal arrangements at level crossings.**

The evidence and knowledge acquired through such a survey should be used **to identify good practices and identify any gaps in the international/national legal frameworks.**

The focus of the analysis should be on the strategic level; however technical requirements that are subject to international agreements are of interest as well.

## II. Summary of issues

National legal frameworks may attribute the **overall responsibility** for safe operation at level crossings to specific governmental agency (e.g. railway/road infrastructure manager). As a consequence, this legal responsibility may be subject of a judicial investigation or of an independent accident investigation. (Whether the responsibility is attributed directly to one accountable agency, or is deemed to be a shared responsibility may have an immense impact on how the single agencies assume the responsibility in practice.)

It is of interest to understand the **national court practices and decisions**, in respect to responsibility in accidents at level crossings, in view of the existing national legal requirements.

Furthermore, prevailing **insurance practices and arrangements** could arise from the national legal framework and may contribute to the overall approach to securing level crossings at a country level. Therefore, the availability and use of insurance instruments is of a secondary interest.

Specific national legislation may contain requirements on proactive (preventive) and reactive (remedial) aspects. It is notably of interest to understand how is the **learning from accidents** assured at a country level and to what extent the **systematic preventive measures** were put in place (e.g. through requirements on periodical safety inspections).

At a strategic level, the IM may have a contract with the state that may cover the maximum allowable number of safety disruption events at level crossings, and/or be required to systematically pursue level crossing safety improvement programmes. These arrangements may also be of a particular interest of the EG as potentially contributing to safety at level crossings.

For almost 50 years were the **road traffic signs including those on level crossings**, subject to the international agreement under the UN (UN 1968 Conventions on Road Traffic, and Road Signs and Signals). Not only the road signs and signals, but also their use in respect to the protective devices in use continues to show discrepancies in use across the Convention contracting parties. Some model traffic signs were replaced in some countries with a new one, so the situation shows some signs of aggravation. Yet, the international cross-border traffic has been increasing substantially in recent years.

The main harmonized traffic signs for LCs are the following:

Danger signals (traffic signs) placed at the approach section of a LC (*\*Art.36. 1.a Vienna Convention) Art.17 of the European Agreement Art.II. 2.1. 2.1.1. UIC Code)*



Traffic signs placed in the immediate vicinity of the railway line (\*\*Art.35.2 of Vienna Convention / Art. 2.4.1 of UIC Code)



Several countries that are contracting party to Vienna Convention, used additional/other traffic signs as well, such as the following:



Besides - the warning (sound and light) signals - are not subject to Vienna agreement, leading to varying practices and thus different meanings of signals used.

For LCs without and with barriers, the signals are used to indicate the following situations: Crossing forbidden, Crossing allowed, Free passage, Out of order. While the red light signal is generally used to indicate danger (coming trains), there are differences in the type of signal (single, double) and its aspects (flashing or not, color, intensity, length). In some countries, white light signal is used.

**Road traffic regulations** contained in national traffic acts usually prescribe the maximum allowed speed of road traffic on a LC and its vicinity, ban overtaking, contains obligation to stop and ban parking in the vicinity. These regulations also show considerable differences between countries.

There are numerous other aspects of level crossing that may be subject to regulation (see a draft list in Annex A).

### III. Findings from survey

We hereby summarize the answers to the common survey delivered to the secretariat so far (as by 15 September 2014). The replies were available for 22 countries in total.

#### Aspects regulated by national legal acts:

- In 18 out of 22 countries, the legal responsibility for safety at level crossing is established through legal acts.
- In 19 out of 22 countries, the legal responsibility for maintenance of level crossings is established through legal acts.
- In 17 out of 22 countries, the legislative provisions exist concerning the protection requirements on different types of level crossings.
- In 6 out of 22 countries, there are legal provisions in place addressing the issue of reimbursement of costs incurred in level crossing accidents.

### **Explicit attribution of legal responsibility**

- In 14 out of 22 countries is the legal responsibility for level crossings attributed to both rail and road infrastructure manager.
- In 7 out of 22 countries is the legal responsibility explicitly attributed to a rail infrastructure manager, in 5 cases exclusively.

### **Use of traffic signs (Vienna convention):**

- In all 22 countries, one of the traffic signs as defined in the Vienna convention is used and placed ahead of level crossings regardless whether equipped with barriers or not.
- In 18 out of 22 countries is the warning sign (St Andrew cross) defined in Vienna convention placed in the immediate vicinity of a level crossing.

### **Use of light/sound warning signals on LC with (without) barriers respectively:**

- In 6 (6) out of 22 countries is the constant red light signal used to indicated to road user that the passage is forbidden.
- In 11 (8) out of 22 countries is the flashing single red light signal used to indicated to road user that the passage is forbidden.
- In 18 (11) out of 22 countries is the dual flashing red light signal used to indicated to road user that the passage is forbidden.
- In 21 (11) out of 22 countries is the sound warning signal used to indicated to road user that the passage is forbidden. In this only country (India), another type of signal is used.
- In 1 (9) out of 22 countries is the constant white light signal used to indicate to the road user a free passage.
- In 10 (14) out of 22 countries is the flashing white light signal used to indicate to the road user a free passage.
- In 5 (5) out of 22 countries is the non-showing white light signal used to indicate that the LC protective equipment is out of order
- In 4 (1) out of 22 countries is the free passage indicated by other signal than white light.

### **Miscellaneous: (Are there any aspects of level crossings that should be regulated at an international level (not already specified in the 1968 Conventions on Road Traffic, and Road Signs and Signals?):**

**India:** It should be impressed upon that all countries associated with United Nations shall install Pre-Warning Device on all Unmanned Level Crossing so that the Road User shall have idea of any incoming train.

**Hungary:** It would be practical to standardize the level crossing signalling device and their meaning. (e.g. In Austria and Hungary (two neighbour countries) the light signals and their meaning are totally different.)

**Ireland:** Set down principles and guidance for road traffic calming and road traffic signage systems at passive and open level crossings which put into practice Article 19 of the 1968 Convention. Such systems should:

- slow down road traffic approaching the crossing,
- focus drivers' attention on the railway hazard ahead,
- encourage drivers to: - stop and look both ways before crossing, and give way to trains,
- cross quickly when way ahead is clear.

**Germany:** Flashing / blinking red lights should be banned. In many countries flashing lights are used as warnings, but not as a command to stop. This leads to confusion. It becomes especially problematic if two different lighting systems for level crossings exist in a country, like in Germany (either yellow + permanent red or flashing red).

**Russia:** At the international level should be governed by the rules of crossing railroad crossings transport equipment, cyclists and pedestrians.

**Italy:** - obligation of a status of the road light signal to notice in advance the closure (e.g. amber lights)

- repetition of the light signal even in the approach roads different from that one perpendicularly directed to the LCs

- obligation for road drivers to break down the barriers when trapped

**Belgium:** Sound level for sound warning.

**Belarus, Georgia, Switzerland:** No

## IV. Next Steps

Despite all countries claimed that they use one of the traffic signs defined in Vienna convention, other traffic signs are used in practical as well. It should be investigated, whether a new series of signs should not be proposed to include in the 1968 Vienna Convention.

It may be of interest to analyze different national requirements on protecting different types of level crossings, if the results obtained from other parts of the common questionnaire show that a common classification can be established.

**Further action 1:** Consider enquiring about specific technical requirements for protection of different types of level crossings as used in different countries.

It may be of interest to better understand the national legislative provisions enabling to claim reimbursement of costs incurred in level crossing accidents.

**Further action 2:** A specific survey to be made with countries indicating that they have legal provisions in place enabling to collect costs incurred in level crossing accidents. This may include questions about recent court decisions.

While in a great majority of countries, a St-Andrew cross is place in the immediate vicinity of a level crossing, it may be of interest to find out what the situation in other countries is.

**Further action 3:** A specific survey to be made among countries indicating that they do not use the St Andrew traffic sign to indicate the presence of a level crossing.

The subgroup should investigate interest of participating countries into a common recommendation / requirements on the use of warning lights and barriers (including written messages and symbols), the lights and signal levels, and road traffic calming measures.

**Further action 4:** Prepare an overview of possible approaches to establishing common (recommended) requirements on the aspects described above.

## Annex A: LC aspects addressed by national/international legal requirements

Aspects that are nowadays addressed by either national or international requirements.

<i>Area</i>	<i>Sub-area</i>	<i>Aspects</i>	<i>Where addressed</i>
	Stop signals and ETCS block markers		<b>TSI CCS</b>
	Delayed clearance of signals, delayed display of driver's LC indicators and delayed issue of ETCS movement authorities		National rules
	Operating sequences	Sequence, timing	National rules
1. Control, command, signalling	Wrong-direction train movement and bi-directional control	Resetting times	National rules
	Shunting movements over level crossings		National rules
	Automatic LC locally monitored by train drivers	Indication of correct operation, permissible crossing speeds, LC signboards, LC warning signs	National rules
	Identification	Names, signs, information at signal boxes	National rules
	Risk management	Risk model application	<i>CSM on monitoring and supervision</i>
	Operational procedures	Rules for failure management	TSI OPE
2. SMS-related requirements	Safety monitoring	Data collection, tools, database, analysis	<i>CSM on monitoring and supervision</i>
	Investigation (process /template)	Process/template	<i>Annex V – RSD / ERA Guidance</i>
	Inspection (process/template)	Process/template	<i>CSM on supervision</i>
	Protection level minimum requirements	Rules for new / upgraded LCs	National rules
3. Infrastructure requirements	Lay-out and conditions	Design, illumination	National rules
	Road design and	Slopes, sight distance	National rules

<i>Area</i>	<i>Sub-area</i>	<i>Aspects</i>	<i>Where addressed</i>
	conditions		
4. Road-side protection operations	<b>Horizontal / vertical signing</b>	<b>Type, size, place, ...</b>	<b>UNECE &amp; National rules</b>
	Light and audible devices	Type, colour, intensity, sequence, sound characteristics	National rules
	Barriers	Type, marking, signs, message, functional requirements	National rules
	Clearance (obstacle detection) devices	Technical requirements	National rules
	Rules for des-/activation	Times, functioning	TSI OPE
	Failure / acceptable risk	...	RAC-TS

## Annex B: Common questionnaire

1. Does the national legislation (Acts, Regulations, Decrees, ...) regulate the following aspects of LCs?

- Legal responsibility (for safety of LC) [Y/N]
- Responsibility for the maintenance [Y/N]
- Installation requirements - types of level crossings as a function of individual conditions [Y/N]
- Reimbursement of costs incurred in an accident [Y/N]

2. Does the national legislation explicitly attribute the responsibility for the state of level crossings?

- To railway infrastructure manager? [Y/N]
- To road infrastructure manager? [Y/N]
- To both at the same time? [Y/N]
- Other responsible entity [Y/N] [Who?]
- Comments [ ]

3. In your country, are level crossings provided with one of these danger signals\*?



[Y/N]



[Y/N]



[Y/N]

Any other? [which?]

(\*Art.36. 1.a Vienna Convention) Art.17 of the European Agreement Art.II. 2.1.

2.1.1. UIC Code)

4. In your country, is one of the warning signs below placed in the immediate vicinity of a LC?



[Y/N]



[Y/N]

Any other? [which?]

(\*\*Art.35.2 of Vienna Convention / Art. 2.4.1 of UIC Code)

5. Are the active level crossings WITH barriers in your country equipped with the following warning lights?

- Constant red light (indicating that crossing is forbidden)

- Flashing red light (single) (indicating that crossing is forbidden)
- Flashing red lights (two) (indicating that crossing is forbidden)
- Other [Which?] (indicating that crossing is forbidden)
- Sound warning (indicating that crossing is forbidden)
- Constant white light (indicating free passage)
- Flashing white light (indicating free passage)
- No light (indicating that the warning is out of order)
- Other (indicating free passage)

6. Are the active level crossings WITHOUT barriers in your country equipped with the following warning lights?

- Constant red light (indicating that crossing is forbidden)
- Flashing red light (single) (indicating that crossing is forbidden)
- Flashing red lights (two) (indicating that crossing is forbidden)
- Other [Which?] (indicating that crossing is forbidden)
- Sound warning (indicating that crossing is forbidden)
- Constant white light (indicating free passage)
- Flashing white light (indicating free passage)
- No light (indicating that the warning is out of order)
- Other (indicating free passage)

7. Are there any aspects of level crossings that should be regulated at an internal level (not already specified in the 1968 Conventions on Road Traffic, and Road Signs and Signals)?

## Annex C: Questionnaire responses

### Aspects regulated by national legal acts:

<i>Country</i>	<i>Legal responsibility (for safety of level crossings)</i>	<i>Responsibility for maintenance</i>	<i>Protection requirements for the different types of level crossings</i>	<i>Reimbursement of costs incurred in accidents</i>
Belgium	X	X	X	
Bulgaria				
Estonia	X	X	X	
France				
Georgia	X	X	X	
Germany	X	X	X	X/O
Greece	X	X	X	X
Hungary	X	X	X	
India	X	X	X	
Ireland	X	X	X	
Italy	X	X	X	
Norway	X	X	X	
Poland	X	X	X	
Portugal	X	X	X	X
Republic of Moldova		X	X	
Romania	X	X	X	X
Russia	X	X		X
SPAIN		X	X	
Sweden	X			
Switzerland	X	X	X	
The Republic of Belarus	X	X		X
Turkey	X	X	X	

**Explicit attribution of legal responsibility**

<i>Country</i>	<i>Road IM</i>	<i>Rail IM</i>	<i>Road and Rail IMs</i>	<i>Others</i>
Belgium		X		
Bulgaria			X	
Estonia		X		
France			X	
Georgia				Resp. based on "blamed" party
Germany		X/O	X	
Greece			X	
Hungary				
India			X	
Ireland		X		
Italy		X	X	
Norway			X	
Poland		X		
Portugal		X		Private at Private LCs
Republic of Moldova			X	
Romania			X	
Russia			X	
SPAIN			X	
Sweden			X	
Switzerland			X	
The Republic of Belarus				
Turkey			X	Municipalities and Provincial Special Administrations

### Use of traffic signs (Vienna Convention)

<i>Country</i>	<i>Warning sign placed in advance of LC equipped with gates/barriers?</i>	<i>Warning sign placed in advance of LC NOT equipped with gates/barriers?</i>	<i>Warning signs placed in the immediate vicinity of a LC?</i>
Belgium	Yes	Yes	Yes
Bulgaria	Yes	Yes	Yes
Estonia	Yes	Yes	Yes
France	Yes	Yes	Yes
Georgia	Yes	Yes	Yes
Germany	Yes	Yes	No
Greece	Yes	Yes	Yes
Hungary	Yes	Yes	Yes
India	Yes	Yes	No
Ireland	Yes	Yes	No
ITALY	Yes	Yes	Yes
Norway	Yes	Yes	No
Poland	Yes	Yes	Yes
Portugal	Yes	Yes	Yes
Republic of Moldova	Yes	Yes	Yes
Romania	Yes	Yes	Yes
Russia	Yes	Yes	Yes
SPAIN	Yes	Yes	Yes
Sweden	Yes	Yes	Yes
Switzerland	Yes	Yes	Yes
The Republic of Belarus	Yes	Yes	Yes
Turkey	Yes	Yes	Yes

## Use of light signals

Country	<i>Passage forbidden indication</i>					<i>Free passage indication</i>			
	Constant red light	Flashing one red light	Flashing two red lights	Sound warning	Other	Constant white light	Flashing white light	No light (out of order)	Other
Belgium			X	X			X		
Bulgaria			X	X			X	X	
Estonia	X		X	X			X	X	
France			X	X					
Georgia	X	X		X				X	
Germany	X	X		X/O					
Greece			X	X					
Hungary			X	X			X	X	
India					X				
Ireland			X	X					
Italy	X		X	X					
Norway		X		X			X		
Poland		X		X			X		X
Portugal	X	X		X					
Republic of Moldova		X		X			X		
Romania			X	X			X	X	
Russia			X	X					
Spain			X	X					
Sweden			X	X			X		
Switzerland		X	X	X					X
The Republic of Belarus			X	X					X
Turkey	X	X		X		X			