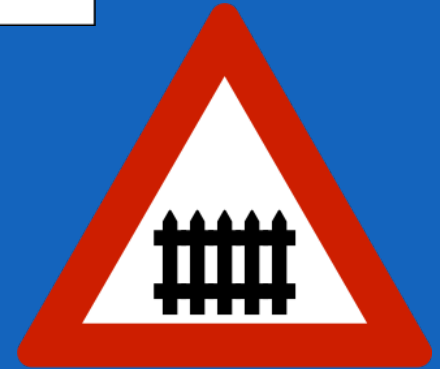
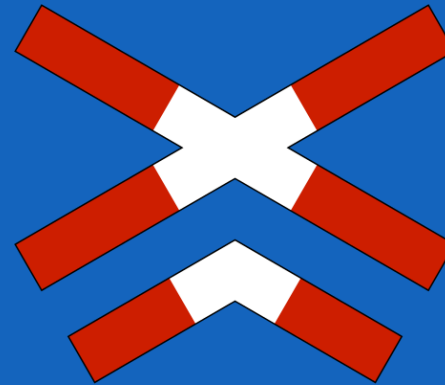
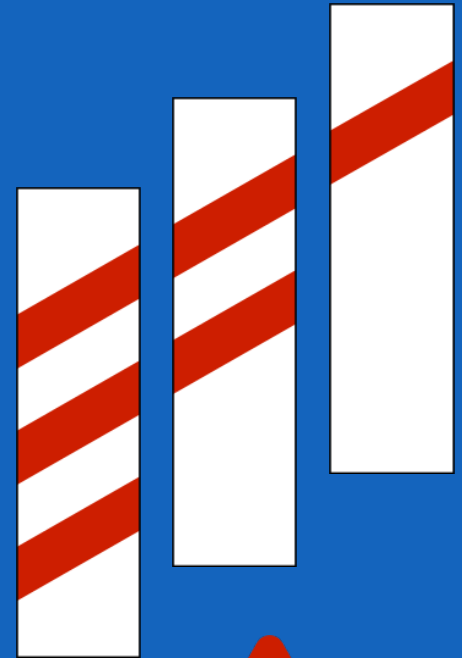
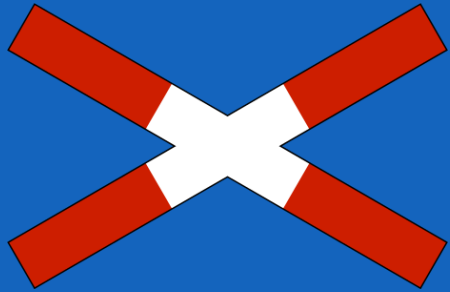


Level Crossing Signs



A, 25

#1: LX EG recommends deletion



1

Convention



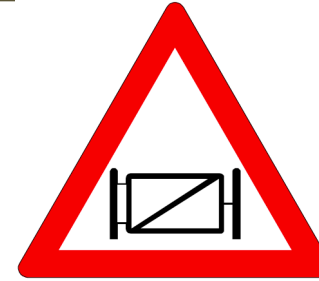
2

Colombia
(for all barriers)



3

Mauritania



4

Southern African
countries



5

UK proposed
(for manual gate)



6

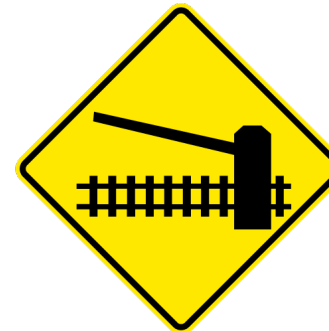
#6: Tested/Rejected

International Road Sign
Comprehension Evaluation Project



7

Convention



8

Chile



9

Egger

#7-9: Under study

International Road Sign Comprehension Evaluation Project

A, 25 Comprehension



✧ **The issue:** As proposed by the Expert Group on Safety at Level Crossings (LX EG), should A, 25 be deleted and A, 26a stand for all level crossings?

- ✧ The puzzle: Why is a sign in use for more than 100 years not better understood? Recent published studies reveal low comprehension (non-recognition of level crossing with such replies from respondents as “fence”) and/or confusion over whether A, 25 means guarded or unguarded level crossing.
- ✧ History’s answer: Many original gates at level crossings resembled the A, 25 symbol. Reality and symbol were visually compatible. Comprehension may have been higher in the early days of road signage, but we cannot know because testing was not done. Slide #5 shows an old-style automatic swinging gate, replaced during the last year by an automatic sliding gate (slide #6) with less resemblance to A, 25.
- ✧ We also see why UK studies reveal confusion over type of level crossing. Many unguarded level crossings have fences beside them that resemble A, 25. When gate arms were added to convert crossing from unguarded to guarded, the old fences were kept beside the new gates (slides #7-8).
- ✧ When the 1968 Convention included provision for modern gate styles (slide 15), increasing visual incompatibility between gate style and symbol and its possible impact on comprehension were not addressed.

A, 25 Comprehension

- ✧ UK researchers recently identified a new problem. Drivers, not recognizing the difference between manual and automatic gates, were expecting manual gates to open automatically.
- ✧ This raised another concern. The converse might occur with drivers trying to open automatic gates manually.
- ✧ Such scenarios seem odd until we realize many old-style manual gates in the UK were automated without a change in gate appearance.
- ✧ UK researchers propose eliminating A, 25 and creating a new sign referring only to manually operated gates (sign #5, slide #2).
(RSSB Report, *Signs at Private Level Crossings*, 2015)



A, 25 Gate Style – Across Road



Courtesy of © Trinity Mirror North East, West Dyke Road level crossing, Redcar, UK, 2014.

A, 25 New Gate– Across Road



Courtesy of © EDS (EDSUK.com), West Dyke Road level crossing, Redcar, UK, 2016.

A, 25 Gate Style – Beside Road



Courtesy of © G. Wallace, Bunchrew Level Crossing with Automatic Half Barriers, Scotland, 2013.

A, 26 – With A, 25 Gate Style Beside Road



Courtesy of © G. Wallace, Delny Level Crossing, Scotland, 2014.

A, 26a-b



1a

Convention



1b

Convention

#2 or #3: LX EG recommends adoption



2

Bosnia & Herzegovina,
Croatia, Germany, Luxembourg,
Macedonia, Serbia



3

Iran



4

Botswana, Burundi, Kenya,
Lesotho, Namibia, Rwanda,
South Africa, Swaziland,
Tanzania, Uganda,
Zimbabwe



5

Nigeria



6

Switzerland proposed



7

Philippines



8



9

#8-9: Under study

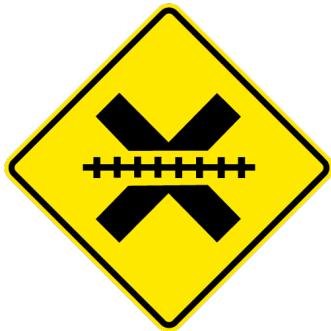
International Road Sign Comprehension Evaluation Project

A, 26a-b Comprehension



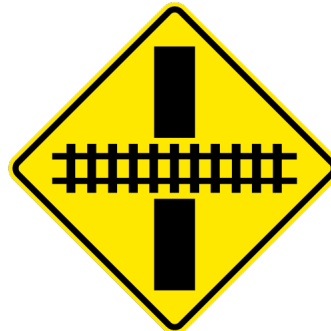
- ✧ **The issues:** As proposed by the LX EG, should a modern train symbol replace the current A, 26a?
- ✧ Should a train symbol be depicted from the side or front?

- ✧ Good comprehension of both steam engine and modern train symbols is expected.
- ✧ A, 26a advantages are side view, high legibility, and compatibility with sign #9 (slide 2), essential if sign #9 is adopted. A drawback is some road users may think “slow train.”
- ✧ A drawback of a modern train symbol is its resemblance to a tram.
- ✧ UK researchers have tested signs (such as #12) stressing the risk of crossing rail tracks. (RSSB Report, *Research into Signs and Signals at Public Road Level Crossings*, 2014)



10

Convention



11

Many countries



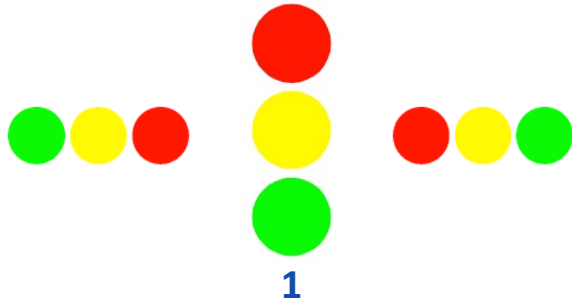
12

UK proposed

#10-12: Tested/Rejected

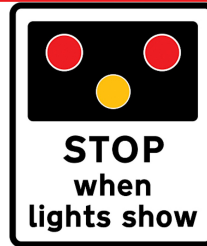
International Road Sign Comprehension Evaluation Project

A, 17a-c

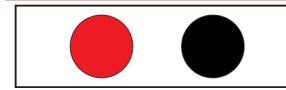


1
Convention

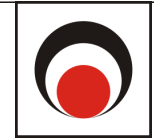
Light signal signs are also for guarded crossings.



2
UK



3
Romania,
Switzerland



4
Hungary



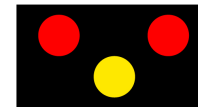
5
Spain



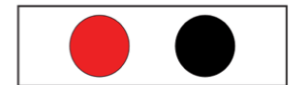
6
Philippines



7
Australia, New Zealand



8



9

#7-9: Under study
International Road Sign Comprehension Evaluation Project

A, 17a-c

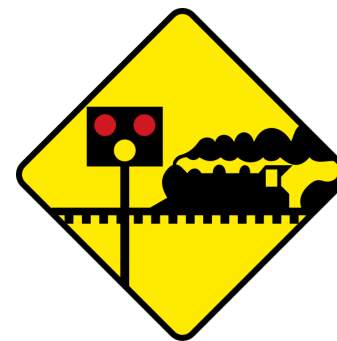
- ✧ **The issues:** Is a warning sign for signalized level crossings needed?
 - ✧ If yes, may A, 17 be used to warn of level crossings controlled by traffic light signals or is a new sign or additional panel needed?
 - ✧ If a new symbol is created, which signal configuration should be chosen?
- ✧ The Convention states that the A, 17a-c symbols should match signal arrangement, which implies that A, 17 is not relevant for level crossing signals.
 - ✧ Because signal arrangements at level crossings vary and do not always conform to Convention provisions, choosing a generic symbol is not simple.
 - ✧ International sign testing (IRSCEP) now underway will supply scientific data on level of comprehension and comprehension response time to facilitate decision-making concerning the level crossing issues.



10



11



12

Ireland

#10-12: Tested/Rejected

International Road Sign Comprehension Evaluation Project

“Smash the Gate” – Ideas for a New Sign

If trapped between closed four-quadrant gates at a level crossing, many drivers do not realize they are supposed to drive through these breakable barriers.



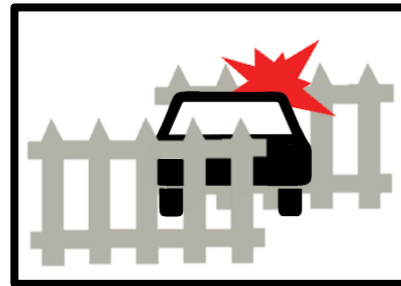
D

Mandatory



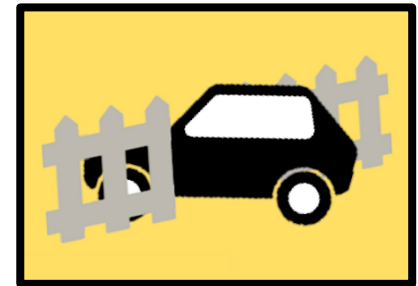
E

Special Regulation 1



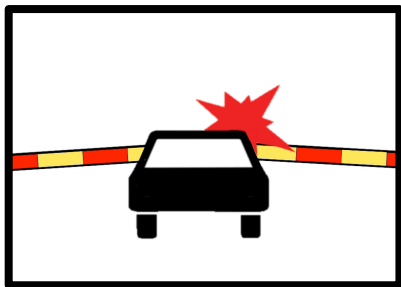
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Special Regulation 2



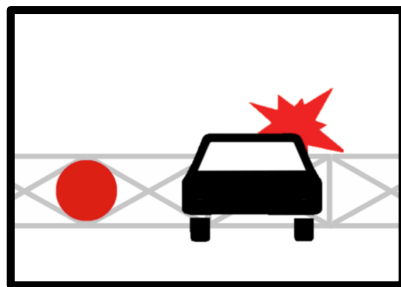
E

Special Regulation 3



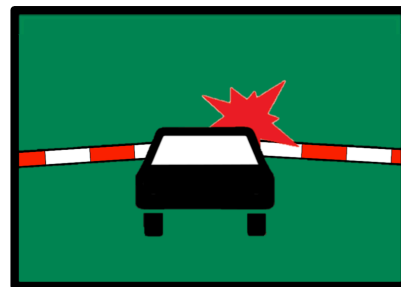
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Special Regulation 4



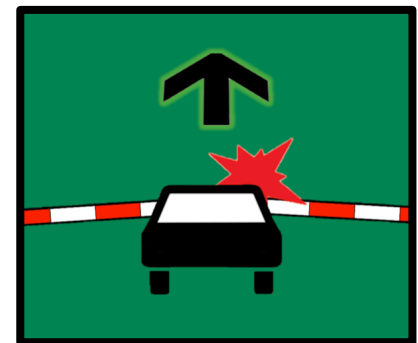
E

Special Regulation 5



G

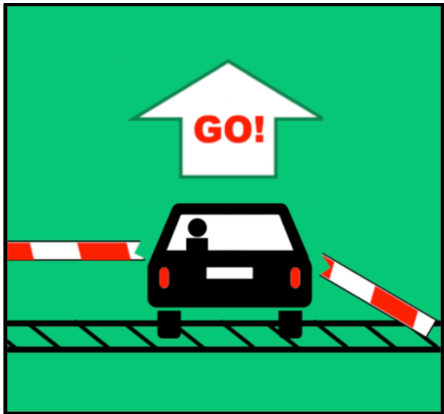
Informative 1



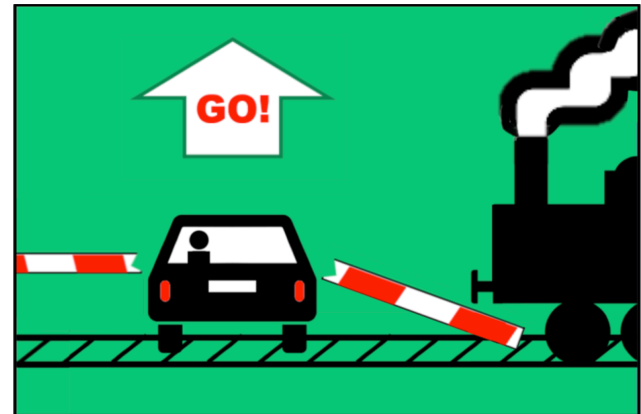
G

Informative 2

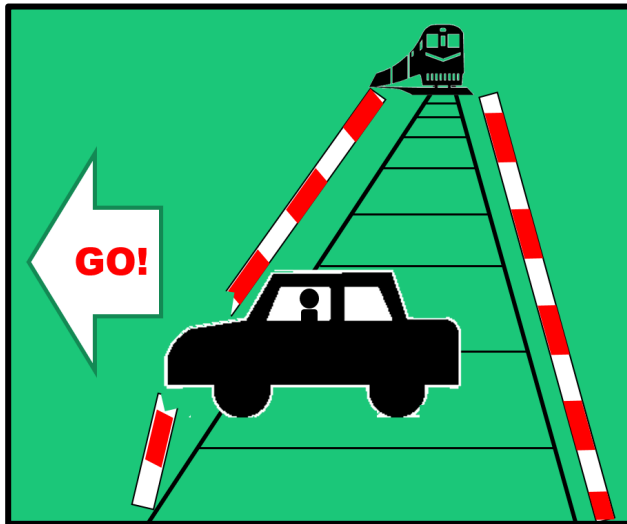
“Smash the Gate” – Ideas for a New Sign



1

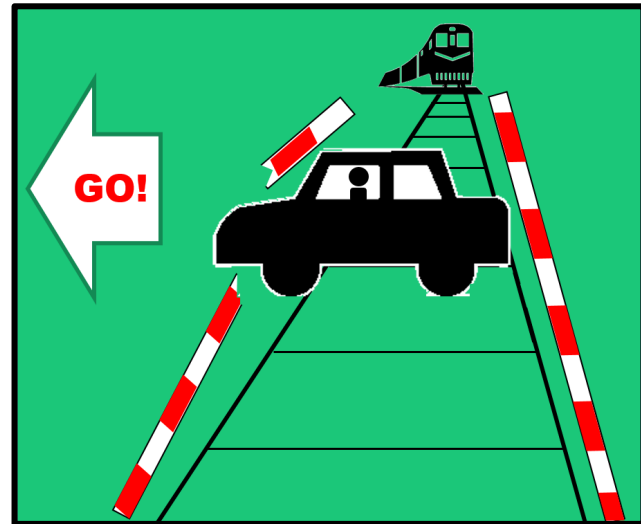


2



3

For left-hand side of road drivers



4

For right-hand side of road drivers

“Smash the Gate” – Idea for a New Sign

- ✧ Crashes initiated by drivers remaining in a trapped vehicle or abandoning it on the tracks have led to loss of life, injury, huge expense, and long time delays. Due to the relatively low cost of gate replacement, the LX EG requested design of a “smash the gate” sign to be installed on the inner side of four-quadrant gates.
- ✧ S. Egger of Austria offered the most logical design as a green informative sign (Convention section G) following ISO format for emergency signage. Green because this color is associated with GO and with SAFETY.
- ✧ Two of the main ergonomic principles of comprehensible sign design are compatibility and familiarity of sign symbol, shape, and color. Egger’s symbol is the only one compatible with ISO’s “Break glass,” a sign of increasing familiarity worldwide for the concept of escaping to safety by breaking an object.



ISO 7010 E008



Egger

(color and shape of original modified slightly to conform more with ISO example)

Convention Gates – 6 Basic Styles



OR



OR



OR



OR



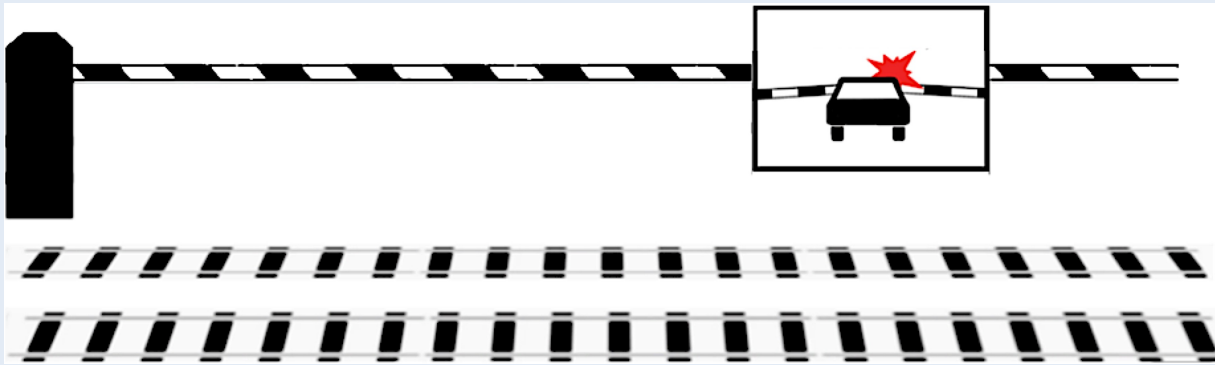
} For gate arms



} For fence-style gates (design may vary, but not colors)

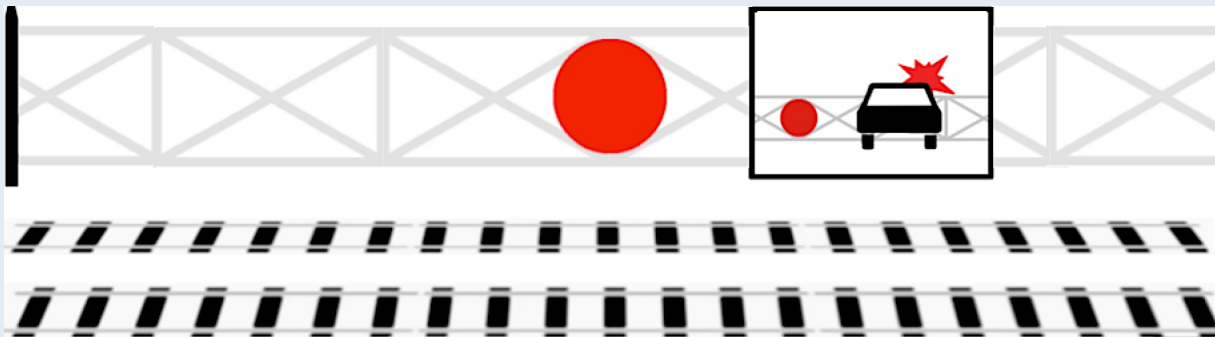
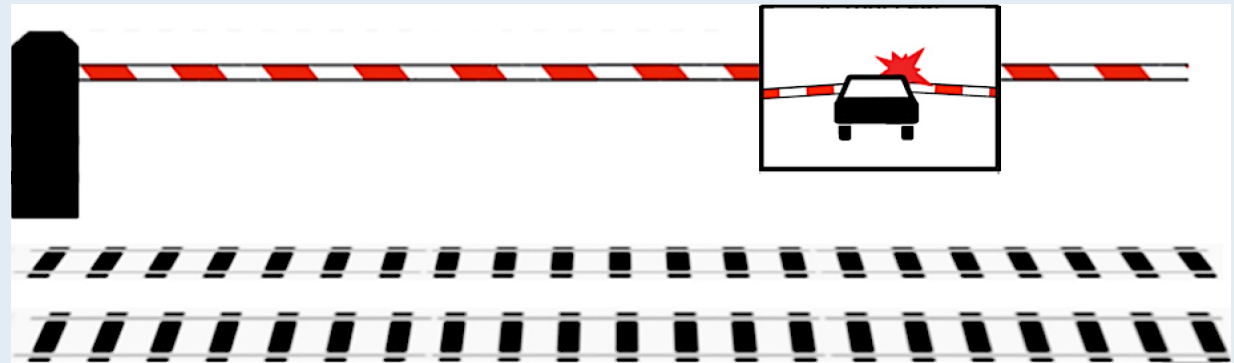
In practice, gates include styles and colors not in the Convention. For visual compatibility (to promote quicker comprehension), each “crash gate” sign would depict the gate it is placed on. However, due to the many styles in existence, a generic design is the most practical.

“Smash the Gate” – New Sign in Situ



These designs are for two-way roads.

All views are from driver's perspective inside closed gates for right-hand side of the road driving.



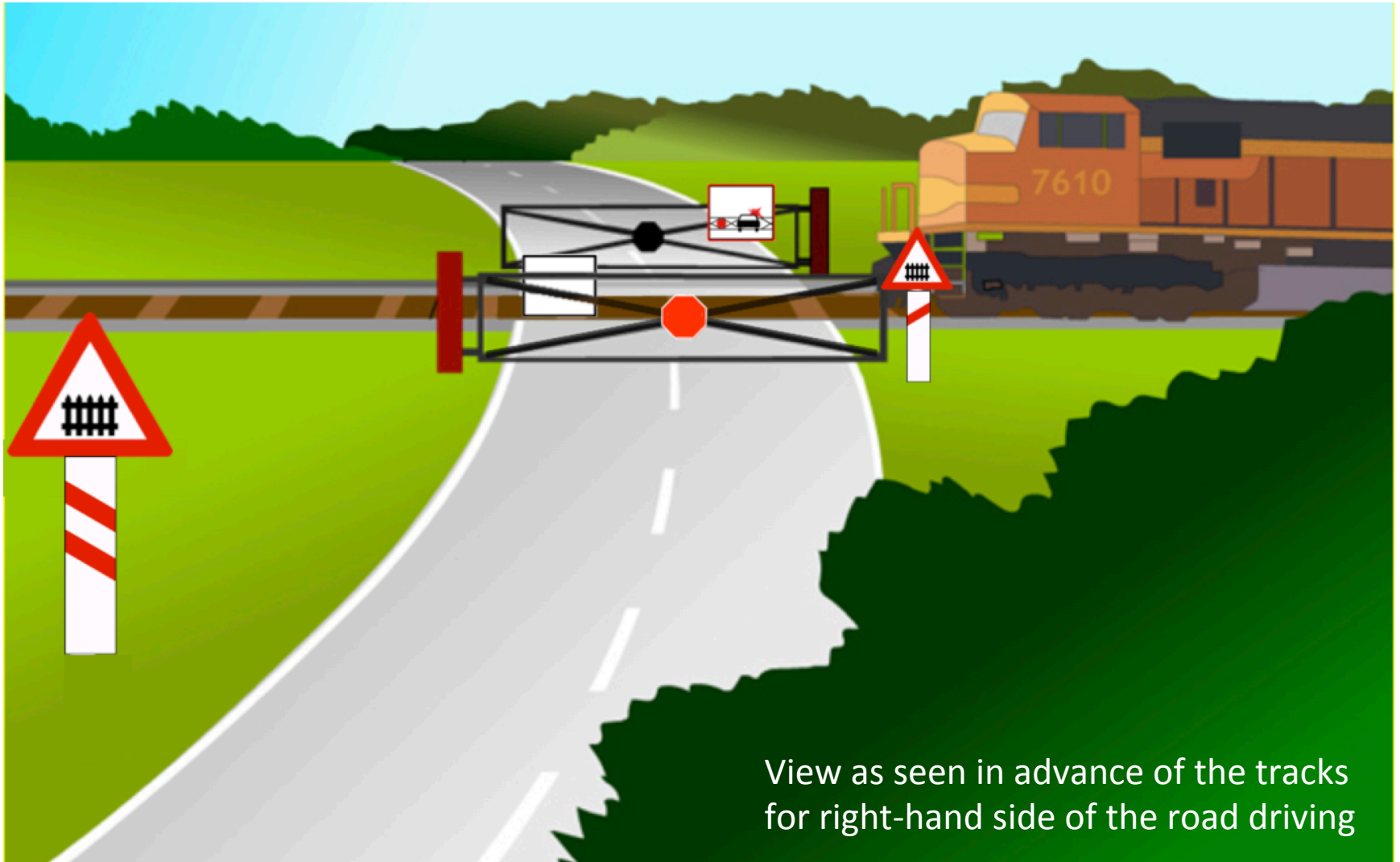
← Gate design may be manual or automatic.

“Smash the Gate” – USA-Style Sign

- ✧ In the USA, the thinking is that an inscribed sign is more comprehensible than a symbolic sign.
- ✧ A real concern also exists about how some drivers may react after learning that fiberglass gates break easily when struck by a motor vehicle. Will knowledge of gate breakability lead more drivers to risk racing across the tracks as gates are closing?
- ✧ Prevention is best. Deterring drivers from being trapped on tracks must be sought through engineering solutions, stricter laws, and enforcement of such laws.



“Smash the Gate” – New Sign in Situ



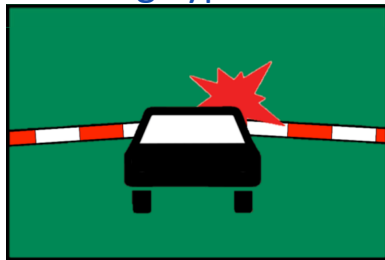
View as seen in advance of the tracks
for right-hand side of the road driving

“Smash the Gate” – Enhancing Comprehension

- ✧ The Convention permits inscriptions to increase comprehensibility. Because open swing gates stay at ground level, their sign wording must be chosen carefully.

Sign location shown on open gates: blue arrows for nearside right-hand side of road drivers, orange for oncoming traffic.

For lifting-type barriers:

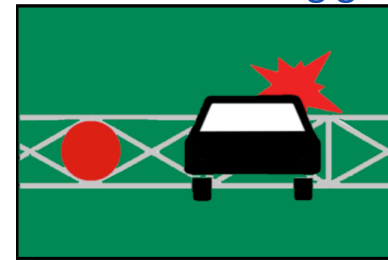


**Rikkoa Portin Nyt!
Break Gate Now!**

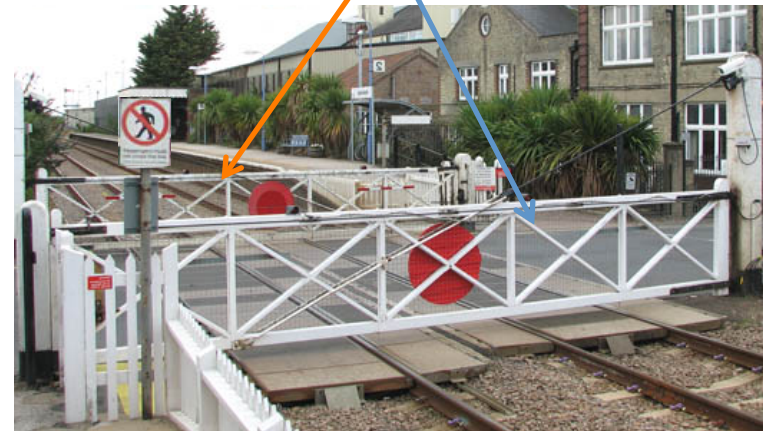


Courtesy of © Glen (sabre-roads.org.uk), Blackgrange level crossing, UK, 2010.
Photo cropped.

For automatic swing gates:

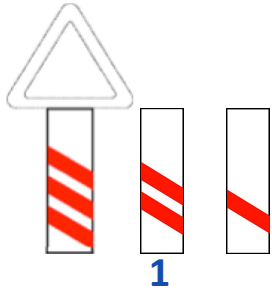


**Bryde Gate at Undslippe!
Smash Gate to Escape!**



Courtesy of © J. Slater (geograph.org.uk), Medge Hall level crossing, UK, 2015.
Photo cropped and reversed.

A, 29a-c



1
Convention
low stripes



2
Poland
center stripes



3
Finland
high stripes

As seen in this example, A, 29 markers are usually installed at or near ground level in most countries.

Consequently, low stripes are often obscured by vegetation, debris, and snow or desert sand.

The Convention markers should therefore depict higher stripes.

Because the Convention addresses sign placement, also to be considered is advising or requiring higher installation for permanent signage.



© Alamy (Thrualems, YAYMediaAS, EKCBBHF). Germany. 2014.