Level crossing safety in the EU

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• Road and rail networks are crossing due to historical design of roads/rail, urban areas or farming, cycling and walking paths;
• Level crossings are a serious hazard for rail safety killing more than 200 people/year in the EU. Material damages are also substantial in terms of loss of assets and disruptions to traffic.
Main safety outcomes in the EU

Level crossing accidents and resulting casualties, EU-27
Significant accidents, fatalities and serious injuries

Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL

Main safety outcomes in the Danube Macro Region

- The **Danube Macro Region** includes Austria, Bosnia & Herzegovina, Bulgaria, Croatia, Czechia, Hungary, Moldova, Montenegro, Romania, Serbia, Slovakia, Slovenia and some regions of Germany and Ukraine.
- Over 2018-2020, compared to EU27 the Danube macro-region EU MS accounted for:
  - 41% of accidents, 35% of fatalities, 53% of serious injuries
Level crossing accident rates

Significant accidents at level crossings per million train-km, 2018-2020

Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL

- Over 2018-2020, the Danube macro-region EU MS show high accident rates
Accidents are mostly due to road users' behaviours;
Level crossing types do influence the accident rates:
  - Passive
  - Active
    - Automatic user side warning
    - Automatic user side protection
    - User-side protection and warning, and rail-side protection
    - Manual
Level crossing types in the EU27

- Over 2011-2020, passive LC reduced by 21%
- In 2020 there are still more than 40000 passive LC

Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL
Level crossing types in the Danube macro-region EU MS

- Over 2011-2020, passive LC reduced by 13%
- In 2020 there are still more than 14000 passive LC out of 28000 LC in total
Focus on per country figures

Level crossings per type of protection per country (ERA countries, 2020)

Share among all level crossings

Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL
Focus on per country figures Danube macro-region EU MS

In 2020 the EU MS Danube Region accounted for 29% of all LC in the EU27, however:
- 36% of all passive LC, 56% of all LC with automatic user-side warning and only 8% of LC with also rail-side protection
Focus on per country figures in the Danube macro-region EU MS

Level crossings per type of protection per country (Danube macro-region EU MS*, 2020)

Totals

Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL

*excluding Baden-Württemberg and Bayern
Problem and problem drivers

1. Insufficient protection (road, rail side)
   - Technical solution too expensive / no single market / no common technical requirements / too many decision-makers

2. Insufficient evidence on problems, causes and costs
   - Insufficient statistical data / insufficient independent accident investigation

3. Ineffective risk assessment and management
   - Lack of knowledge, capacity, methods

4. Poor safety culture in the rail sector
   - Lack of awareness of underlying cause, responsibility on road users / insufficient accident investigation

LEGEND:
- PROBLEM
- MEDIATOR
- DRIVERS
- Sub-drivers
Credible plan: target, strategy, actions, measures

Better statistical and in-depth investigation data

Knowledge and capacity building, methods and tools

Raising awareness of genuine underlying causes, just and reporting culture

- Many IMs and governments succeeded in eliminating LCs
- Until all LCs are eliminated, LCs need to be fully protected road/rail side and connected to ETCS or other train protection systems
Making the railway system work better for society.

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