

Statistical data on Level Crossings and on their safety in EU countries

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- Safety at level crossings continue to represent a challenge to authorities in the EU
- Interest in Level crossing safety statistics at the EU level from both road (CARE db) and rail side (ERAIL-CSI db)
- UNECE pilot data questionnaire provides a new insight into the safety performance of LCs in the EU.



Problem and problem drivers

Too frequent accidents at level crossing (threat to the competitiveness and efficiency of the rail)

1. Too many LCs, passive LCs, or poorly protected active LCs

Technical solution too expensive / no single market / no common technical requirements

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

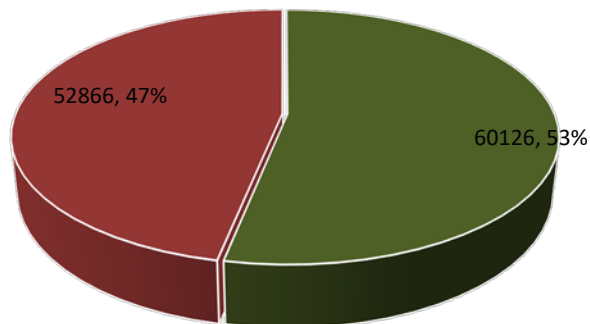
4. Poor safety culture at IM

Lack of awareness of underlying cause, responsibility on road users / Insufficient accident investigation

Level crossings - EUAR countries

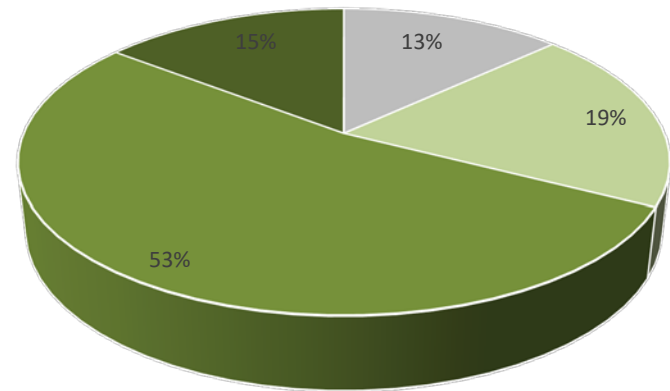
- Active level crossings now outweigh the passive crossings
- User-side protected represent 36% of all LCs

Level crossings (EUAR countries, 2016)



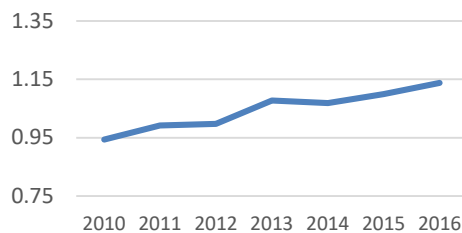
■ Active ■ Passive

Active level crossings (EUAR countries, 2016)



■ Manual ■ User-side warning
■ User-side protection ■ Rail-side protection

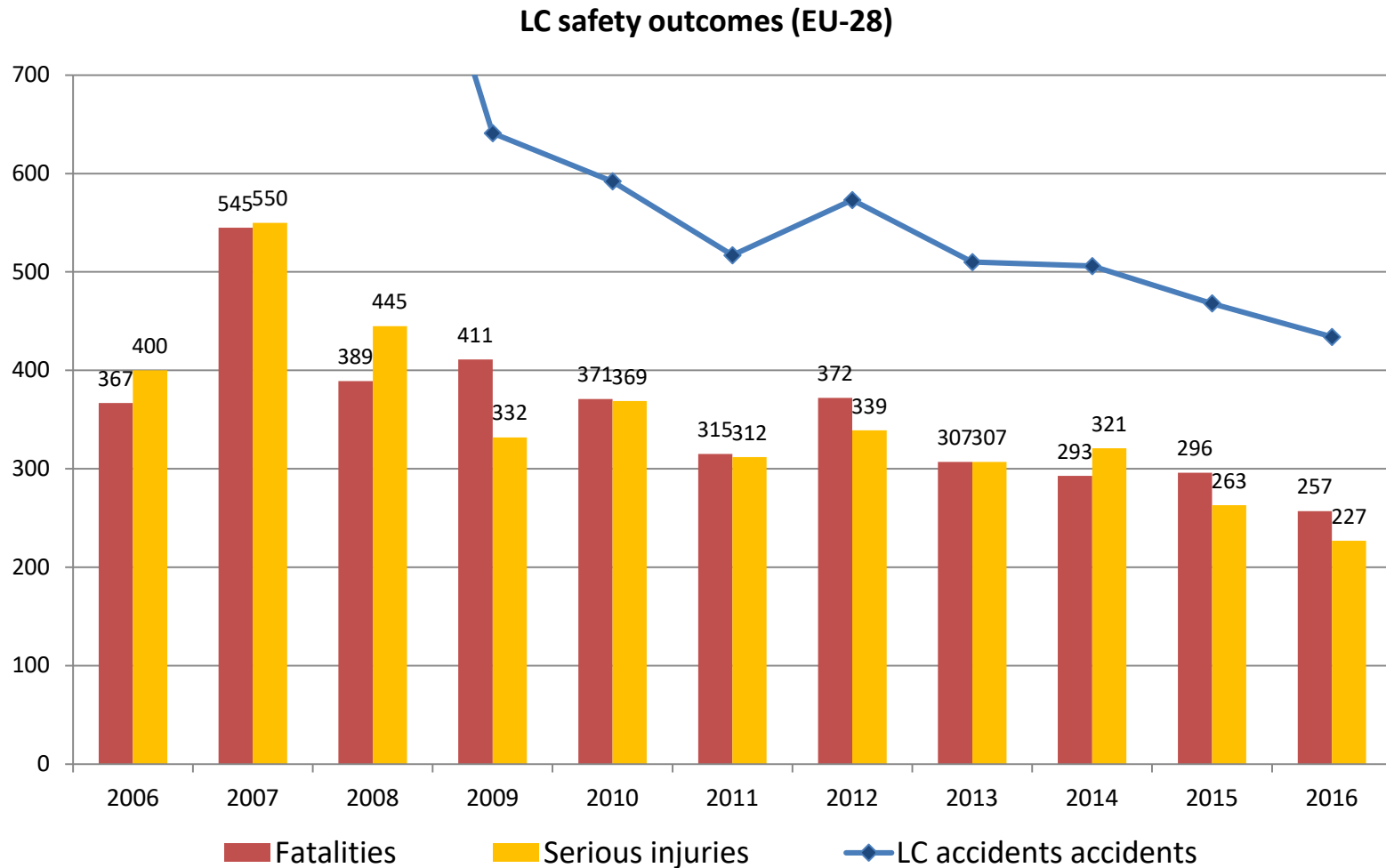
Active to passive ratio (EUAR countries)



Note: EUAR countries = EU-28+CH+NO

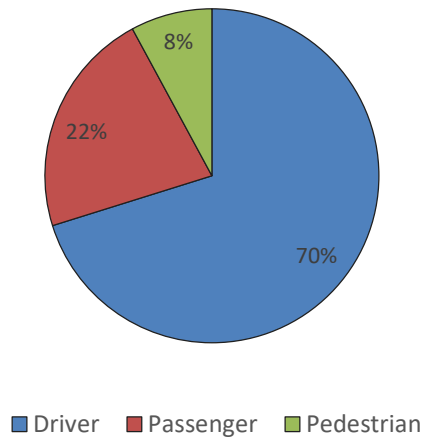
LC safety performance – EU countries

- A decreasing trend, but numbers and economic impact remain high

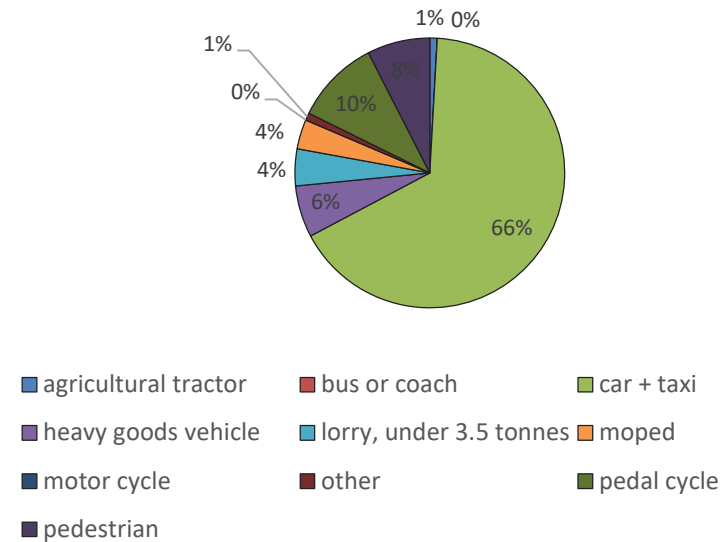


- Further insight provided by CARE statistical data (road safety)
 - No all MS have LC accidents data on the road accidents police reports
 - Several countries provided no data, some others partial data

Fatalities per road user type (2016)



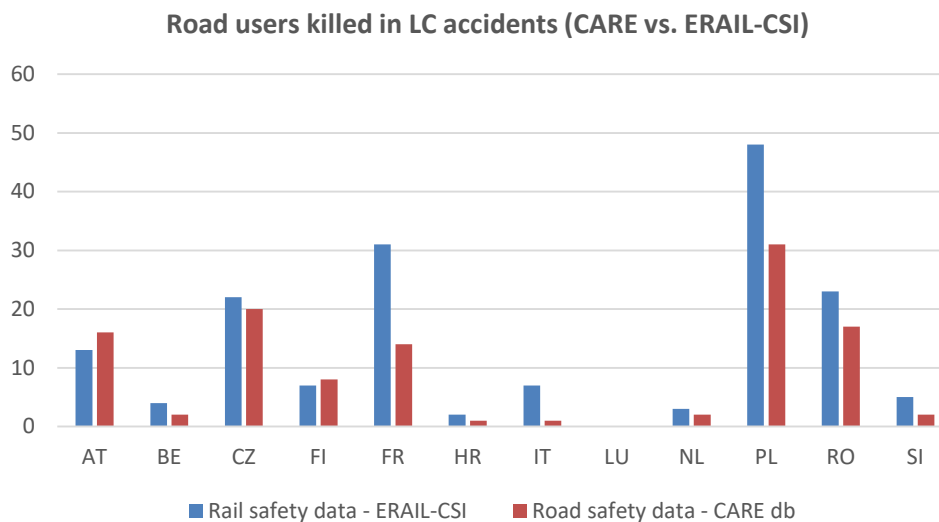
Fatalities at LCs by transport mode (2016)



Sample includes data from 12 countries

- LC safety statistical data possibly underestimated in road safety statistics
 - *Marginal area of interest for road authorities*

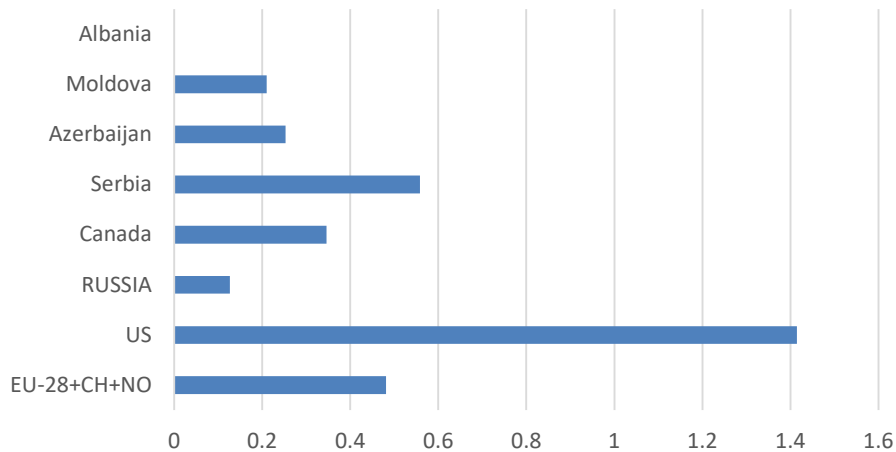
LC users killed (EU in 2016)	Killed on		Ratio
257	- railways	970	26 %
	- roads	26,100	0.985 %



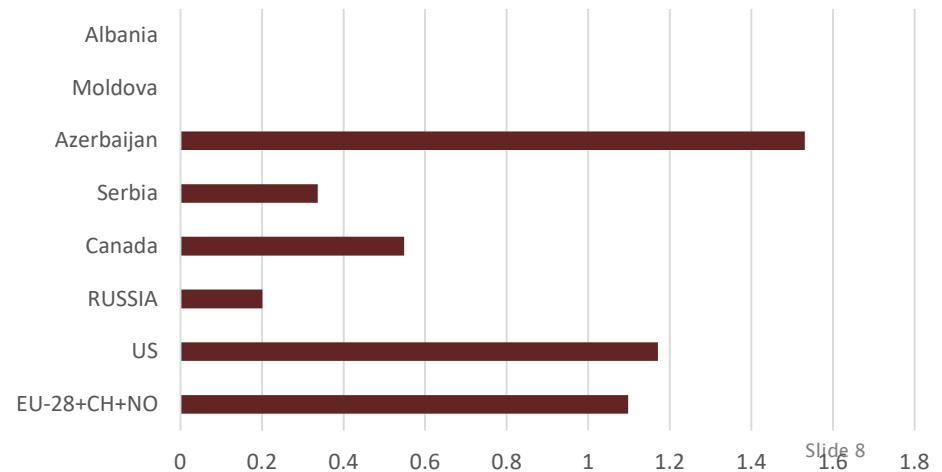
LC infrastructure – UNECE countries

- Density of LCs vary considerably, likely linked to urbanization levels
- Share of active LCs seems to reflect national strategies, partly GDP

LCs per line-km

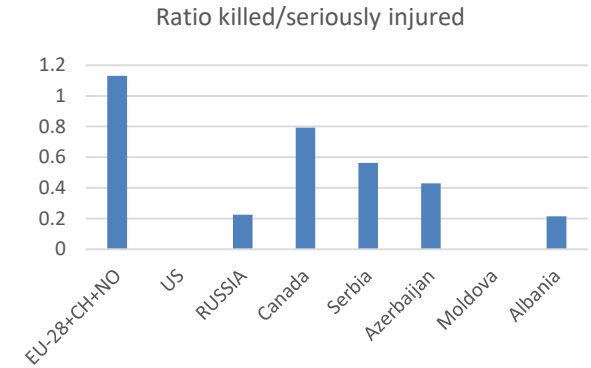


Ratio Active to Passive LCs

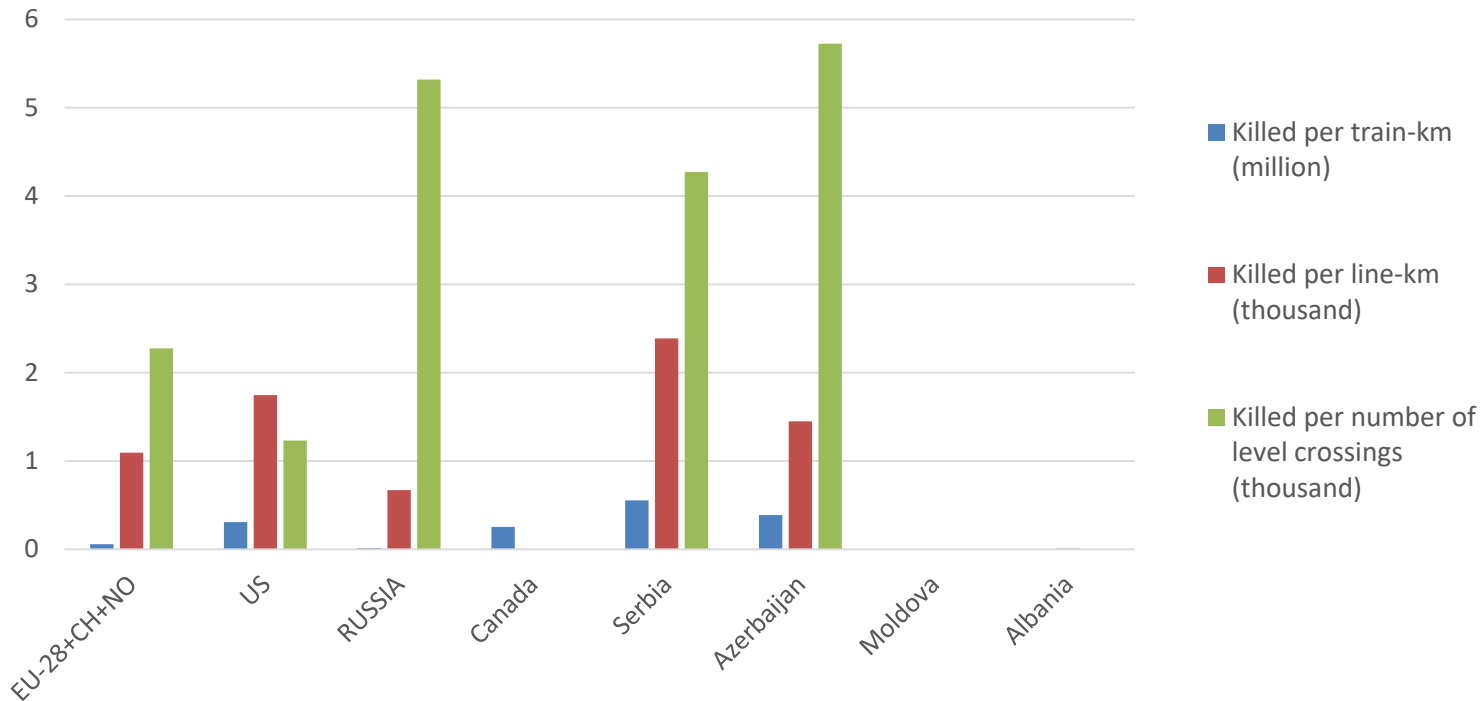


Safety performance – UNECE countries

- Safety performance using different normalizers
- Only fatalities are available and comparable
 - Likely under-reporting of injuries



Normalised fatalities at LCs



- International comparison of LC infrastructure and LC safety performance allows to identify countries with working strategies and good practices
- Poor availability of data broke down to accident type and road user represent certain limitation to determining an effective strategy
- Common mismatch between road and rail data may call for a transversal approach with a unique database filled by road and rail authorities in concert





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