Rail Statistics at the UIC

focus on safety at level crossing

- Data collection: overview
- Significant accidents in Europe
- Level crossings
- Data dissemination
- UIC safety Report
- Safer LC Project
The International Union of Railways counts 196 members.

>>> 145 are railway companies or associations of railway companies

>>> Other members are administrations, research institutes…
Data collection: Overview

~ 100 railway companies participate to the statistics group

At least one statistics correspondent per company

Governance

Steering committee:

Chairman: Roman Sterba SZDC (CZ)
17 collaborators from 10 railway companies
+ CER (Communauté Européenne du Rail)

Meeting twice a year

Plenary meeting in November open to all our statistics correspondents.
4 online questionnaires

3 languages: English\French\German

Data collection: Overview

- Monthly data: Traffic
- KPIs: Provisional annual data
- Final annual data
- 5-yearly data: Network and Rolling stock

International Railways Statistics data collection tool

User settings ->

Monthly data collection tool ->
KPI annual data collection tool ->
STI annual data collection tool ->
STI Synthesis ->
Five Yearly Tables data collection tool ->

Questionnaire on Level crossings and features: 15 variables
Questionnaire on significant accidents: 9 variables

>>> additional variables are collected by the UIC safety Unit
Data collection: Significant accidents

European Safety Database members
All participants are Infrastructure managers

https://uic.org/safety-database

Total of 25 variables collected from 21 European Infrastructure Managers in 19 countries + additional questionnaires

Contact: Olivier Georger georger@uic.org
Data collection: Level Crossings

### Step 1: data entry

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>Calc</th>
<th>Comment</th>
<th>var_id</th>
<th>Visibility</th>
<th>Indicators financial</th>
<th>Indicators traffic, staff...</th>
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</thead>
<tbody>
<tr>
<td><strong>15 - Level crossings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Active LC</strong></td>
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<td></td>
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<tr>
<td>Automatic LC</td>
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<td></td>
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<tr>
<td>User side warning (Col.3)</td>
<td>60</td>
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<td></td>
<td></td>
<td>1503</td>
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<td>84</td>
<td></td>
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<td></td>
<td></td>
<td>1506</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td>128</td>
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<tr>
<td>Total automatic LC (Col.7</td>
<td>4 Col.3 to Col.6b)</td>
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<td>74</td>
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<td>941</td>
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<td><strong>TOTAL</strong></td>
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<td></td>
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<td>✓</td>
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</tbody>
</table>

**Number of Active and Passive LC**

**Active – Automatic and Manual**

**By type of gauge**
Data Dissemination

http://uic-stats-pp.uic.org/

Log in (To get username and password, please send an email to stat@uic.org)

USERNAME

PASSWORD

LOG IN  CANCEL

Visibility of Data

- Public: 82%
- UIC Members: 17%
- Confidential: 1%

Public version

More than 80% of data are “public”
Data Dissemination

45 variables are available so far

Additional parameters will be made available
## Data Dissemination

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>REGION</th>
<th>COUNTRY</th>
<th>COMPANY</th>
<th>YEAR</th>
<th>VALUE</th>
<th>UNIT</th>
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</thead>
<tbody>
<tr>
<td>INFRA - 1514 : Total Level Crossings</td>
<td>AFRICA</td>
<td>Democratic Republic of the Congo</td>
<td>SNCC</td>
<td>2010</td>
<td>39</td>
<td>No</td>
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<tr>
<td>INFRA - 1514 : Total Level Crossings</td>
<td>AFRICA</td>
<td>Democratic Republic of the Congo</td>
<td>SNCC</td>
<td>2011</td>
<td>39</td>
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<tr>
<td>INFRA - 1514 : Total Level Crossings</td>
<td>AFRICA</td>
<td>Democratic Republic of the Congo</td>
<td>SNCC</td>
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<tr>
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<td>AFRICA</td>
<td>Democratic Republic of the Congo</td>
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<tr>
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<td>Democratic Republic of the Congo</td>
<td>SNCC</td>
<td>2015</td>
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<td>INFRA - 1514 : Total Level Crossings</td>
<td>AFRICA</td>
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<td>SNCC</td>
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<td>Gabon</td>
<td>SETRAG</td>
<td>2010</td>
<td>37</td>
<td>No</td>
</tr>
</tbody>
</table>

### Import with Excel

Import data into Excel using the file `UIC_Variable_1514-2010-2016.csv`.

- **Domain**: Infrastructure
- **Variable**: Total Level Crossings
- **Unit**: No

Contact: stat@uic.org

Download data in `.csv` format.
The number of accidents due to internal causes decreases relatively faster than those induced by external causes.

https://uic.org/safety-database

About 80% of railway accidents are caused by third parties (e.g. trespassing)

Individual hit by train is the main type of accident (~60%), followed by collision with an obstacle (~20%)
Collisions of train with an obstacle

<table>
<thead>
<tr>
<th>Year</th>
<th>Open line</th>
<th>Station</th>
<th>Level crossing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>404</td>
<td>22</td>
<td>39</td>
</tr>
<tr>
<td>2008</td>
<td>383</td>
<td>17</td>
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<tr>
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<td>291</td>
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<td>2012</td>
<td>349</td>
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<td>2013</td>
<td>322</td>
<td>28</td>
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<tr>
<td>2014</td>
<td>289</td>
<td>37</td>
<td>104</td>
</tr>
<tr>
<td>2015</td>
<td>264</td>
<td>36</td>
<td>97</td>
</tr>
<tr>
<td>2016</td>
<td>269</td>
<td>28</td>
<td>63</td>
</tr>
</tbody>
</table>

>> Most of collisions with an obstacle happen at level crossings.

And most of the time make more than one victim.
Safer LC Project

Safer Level Crossing by integrating and optimizing road-rail infrastructure management and design

This project has received funding from the European Union’s Horizon 2020 research and innovation program under grant agreement No 723205

- **Time frame:** 01/05/2017 – 30/04/2020
- **Budget:** 4.9 M€
- **Coordinator:** UIC Security Division
- **Partners:** 17 partners from 10 countries

**Aims**

- Focus on technical solutions and on human processes to improve safety at and around LCs
- Focus on ‘self-explaining’ and ‘forgiving’ infrastructure
- Develop a toolbox which will integrate all the project results and solutions
• D1.1 – Analysis of level crossing safety in Europe and beyond
• D1.2 – Level crossing accidents and factors behind them

Website
www.SAFER-LC.eu

Contact
info@safer-lc.eu

#SAFERLC on social media

https://events.uic.org/safer-lc-mid-term-conference
Other publications

Railway Synopsis
KPIs- Provisional data

Railway Handbook:
Energy Consumption and
CO2 emissions.

In collaboration with the
International Energy Agency - OECD

http://www.uic.org/
Thanks for your attention!

Acknowledgment:
Thanks to Olivier Georger from the UIC Safety Unit and Grigore Havarneanu from the Security Unit for their contribution