Preventing pedestrian trespass in the vicinity of level crossings: Examples of good practice from Europe

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Overview

Problem: illegal crossing between a LC and a proximal station platform
Treatment: Anti-trespass panels + CCTV + Signage (+ Fences)
European pilot tests: level of evidence
Ongoing field studies
Recommendations

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<table>
<thead>
<tr>
<th>Train-person collisions</th>
<th>88% of all railway fatalities</th>
<th>(ERA, 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of life</td>
<td>~3,800 deaths/year in EU</td>
<td></td>
</tr>
<tr>
<td>Severe injury</td>
<td>irreparable damage</td>
<td></td>
</tr>
<tr>
<td>Psychological trauma</td>
<td>stress disorders, anxiety</td>
<td></td>
</tr>
<tr>
<td>Traffic disruption</td>
<td>~2 hrs in EU</td>
<td></td>
</tr>
<tr>
<td>Costs from delays</td>
<td>quality of service</td>
<td></td>
</tr>
</tbody>
</table>

**REduction of Suicides and Trespasses on the RAILway property**

www.restrail.eu

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**Level crossings** – locations where *pedestrians* frequently become trespassers by breaking the safety rules

(Freeman & Rakotonirainy, 2015; Stefanova et al., 2015)
Why? Intentional behaviour (strong motivation!)

Shortcut

Convenience

Time saving

Attractive route

Lobb et al., 2001

RSSB, 2011

Robinson, 2003

Silla & Luoma, 2009
Anti-trespass panels: 3 systems available

- Skewed (metal / wood)
- Equal pyramids (rubber)
- Unequal pyramids (rubber)
Implementation in Europe (with no evaluation)
UK (NetworkRail and local light rail networks)
Portugal (REFER)
The Netherlands (ProRail)
UK (NetworkRail): at platform ends + signage + fences
UK (on light rail network): at LCs + signage + fences
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The Netherlands (ProRail): at LCs + signage + fences
Implementation in Europe (with no evaluation)
UK (NetworkRail and local light rail networks)
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The Netherlands (ProRail)

Implementation with evaluation
Turkey (TCDD – RESTRAIL pilot test: 2014)
Belgium (Infrabel: 2014 – 2015)
Aydin Station
Preventing pedestrian trespass in the vicinity of level crossings

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Results

~90% reduction in trespass behaviour *but*:

- Short term assessment (3 months)
- Not sure which of the measures (and which effect mechanism) contributed more to the overall effect

<table>
<thead>
<tr>
<th>AGE</th>
<th>WOMEN</th>
<th>MEN</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BEFORE</td>
<td>AFTER</td>
<td>DIFF.</td>
</tr>
<tr>
<td>CHILDs≤12</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>12 &lt; YOUNG≤20</td>
<td>24</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>20&lt; ADULT</td>
<td>116</td>
<td>4</td>
<td>112</td>
</tr>
<tr>
<td>TOTAL</td>
<td>144</td>
<td>4</td>
<td>140</td>
</tr>
<tr>
<td>PERCENTAGE</td>
<td>-97%</td>
<td></td>
<td></td>
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</tbody>
</table>
Belgium (Infrabel): Wavre

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Results
~78% reduction in trespass behaviour
A different setting and culture, but comparable with the Turkish study:
  • same configuration
  • same combination of measures
  • same evaluation method

<table>
<thead>
<tr>
<th>Observed frequencies during 3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before installation</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

-78%
France (SNCF)

4 test sites out of 20 proposed (2015-2017)
Similar configurations: LC close to a station platform
Will test both types of rubber panels (equal vs. unequal pyramids)
Combined with signage and CCTV
UIC & IFSTTAR follow the evaluation process
Example #1
Example #2
Identified constraints during risk assessment:

More difficult access of railway staff
More difficult interventions on the infrastructure
Problems if train has to stop outside the platform area
More difficult passenger evacuation on the LC
More difficult interventions of safety services or security agents
More difficult removal of animals from the tracks
Need to monitor and maintain the system
Support in selecting the most appropriate measures

Detailed guidance on measure implementation

Framework for structuring documented resources
PREVENTRAIL ("Building capacity and skills to prevent suicide and trespass on European railways")

Submission under review
39 partners
Thank you for your kind attention!

Contact: havarneanu@uic.org

www.restrail.eu/toolbox