The Effect of Different Countermeasures on Railway Trespassing

Anne Silla, VTT IWW
The effect of different countermeasures on railway trespassing

Anne Silla
Introduction

- Trespasser = person who is on the railway without a good cause

- According to the law forbidden
  - Penalty for breaking the law is a fine
Introduction

• 68% of the fatalities (suicides excluded)
• Similar share in the European Union
Introduction

- Prevention of trespassing is challenging
  - Nearly all the people are possible trespassers
  - Railway lines are full of places for trespassing
- Trespassing seems to concentrate in urban areas
- Problematic especially in cities which are divided into two parts by the railway lines
Introduction

• Trespassing tends to be specific to a location
  ➢ Solutions should be tailored to specific locations and factors
  ➢ Potential countermeasures should vary depending on the nature of the trespassers

• Countermeasures that have been used to deter trespass
  – Limitation of pedestrian access
  – Public education, reward or punishment
  – Technical solutions
Aims of the study

• Investigate what kind of effect three different countermeasures have on
  – Frequency of trespassing
  – Characteristics of trespassing behaviour
Objectives

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Landscaping

Building a fence

Prohibitive sign
Method

- Research location
  - The city of Lappeenranta
- Countermeasures
  - Three countermeasures were chosen
  - Each of them was tested at one site
- Measurements
  - Trespassers were counted with cameras equipped with motion detectors
Results (Trespasser counts, May 2006)

- 19 days of measurements

<table>
<thead>
<tr>
<th>Location</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of trespasses</td>
<td>197</td>
<td>519</td>
<td>1,238</td>
<td>1,954</td>
</tr>
<tr>
<td>Daily number of trespasses</td>
<td>18</td>
<td>34</td>
<td>70</td>
<td>122</td>
</tr>
<tr>
<td>Percentage</td>
<td>10%</td>
<td>27%</td>
<td>63%</td>
<td>100%</td>
</tr>
</tbody>
</table>

- On average 40 daily trespasses happen by location
Results (Trespasser counts, May 2007)

- 21 days of measurements

<table>
<thead>
<tr>
<th>Location</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of trespasses</td>
<td>18</td>
<td>31</td>
<td>866</td>
<td>915</td>
</tr>
<tr>
<td>Daily number of trespasses</td>
<td>1</td>
<td>2</td>
<td>48</td>
<td>54</td>
</tr>
<tr>
<td>Percentage</td>
<td>2%</td>
<td>3%</td>
<td>95%</td>
<td>100%</td>
</tr>
</tbody>
</table>

- On average 18 daily trespasses happen by location
Results

- Approx. 122 persons were trespassing every day (before)
- Approx. 54 persons were trespassing every day (after)
- The number of trespassers decreased at every site
- All the countermeasures built had a statistically significant effect on the amount of trespassing
Results

- Classification of trespassers by location both in the before and after phase:

  - Number of trespassers carrying nothing increased in all the sites
Results

• Number of trespasses by age group and location in the before and after phase:

- Majority of trespassers were adults
Results

• Group size of trespassers by location both in the before and after phase:

- Share of people trespassing alone decreased
Results

• Gender
  – In both phases the males were the biggest group trespassing (before 63.4%, after 74.6%)

• Direction of trespass
  – Number of trespassers to both directions stayed fairly steady
Discussion

• No surprising changes to the profile of trespassers
  – Majority made alone by adults and males
  – Amount of trespassers carrying nothing increased in all the sites

  ➢ Physical countermeasures have an effect on the characteristics of trespassers

• Implemented measures turned out to be effective for reducing the number of trespassings

• Not possible to draw conclusions which one is the most effective
Thank you for your attention!

Contact information

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