Issues of the Railway Noise in the Czech Republic

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Operability Section of Railway Infrastructure Administration

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SŽDC Railway Network

- **Owner:** state
- **Operator:** SŽDC
  - operability
  - maintenance
  - modernization
  - development
  - ...

<table>
<thead>
<tr>
<th>National-wide rail system - TEN-T</th>
<th>2596 km</th>
</tr>
</thead>
<tbody>
<tr>
<td>National-wide rail system - other lines</td>
<td>2282 km</td>
</tr>
<tr>
<td>Regional rail system</td>
<td>4553 km</td>
</tr>
<tr>
<td>Ridings</td>
<td>32 km</td>
</tr>
<tr>
<td>Total length of rail lines</td>
<td>9463 km</td>
</tr>
</tbody>
</table>

Issues of the Railway Noise in the Czech Republic
Average Daily Intensity of Freight Trains

Issues of the Railway Noise in the Czech Republic
Strategic Noise Mapping 2017 – 3rd Phase

Percentage of people exposed to noise from the major railways including agglomerations over the total population of the country (10,5 mil.)

Distribution of population exposed to railway noise

Issues of the Railway Noise in the Czech Republic
### Noise National Legislation – Pass-by Noise

#### Outside Limits [dB]

<table>
<thead>
<tr>
<th></th>
<th>Day (6 – 22)</th>
<th>Night (22 – 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dwellings</td>
<td>60 (up to 70)</td>
<td>55 (up to 65)</td>
</tr>
<tr>
<td>schools, social facilities</td>
<td>60 (up to 70)</td>
<td>-</td>
</tr>
<tr>
<td>hospitals, spa areas</td>
<td>55 (up to 65)</td>
<td>50 (up to 60)</td>
</tr>
</tbody>
</table>

#### Inside Limits [dB]

<table>
<thead>
<tr>
<th></th>
<th>Day (6 – 22)</th>
<th>Night (22 – 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dwellings</td>
<td>40 (45)</td>
<td>30 (35)</td>
</tr>
<tr>
<td>schools, social facilities</td>
<td>45</td>
<td>-</td>
</tr>
<tr>
<td>hospital rooms / surgery</td>
<td>40 / 35</td>
<td>25 / -</td>
</tr>
</tbody>
</table>

- Noise mitigation is required also for the existing network.
- No cost-benefit or cost-effectiveness analysis required.
- Penalties for exceeded noise reception limit on rail. infrastr. manager.
Commonly Used Noise Mitigation Measure

**construction**
- fastening system

**maintenance**
- rail grinding, reprofiling

**ordinary noise barriers**...........242 810 m
- heigh 1,5–4 m

**low height noise barriers**............776 m
- concrete block (BRENS - Czech)
- aluminum segments (SOUNDIM - Finnish)

**rail dampers (absorbers)**........6 785 m
- Intertech (Czech)
- Styl2000 (Czech)
- SilentTrack (CORUS)

**noise insulated windows**
- effective ventilation must be included

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**Installation of noise barriers [km]**

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Issues of the Railway Noise in the Czech Republic
Low Height Noise Barriers

LOW HEIGHT NOISE BARRIER ALONGSIDE DOUBLE TRACK?
EU’s Policy

**TSI NOI, TSI WAG**
- call for proposals (limit cca EUR 8 mil.) – closed 04/2018
- now 20–30 % silent wagons among Czech freight operators

**NDTAC (EU 2015/429)**
- bonus for (only) retrofitted wagons from 1. 1. 2020
- ca EUR 0,004 / axle / km

**END (2002/49/EC)**
- implementation CNOSSOS: starting
- *data of rail roughness, brake type, wheel measure are not available or collected yet*
Thank you for your kind attention

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