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Working Party on Rail Transport

Seventy-first session

Geneva, 27-29 November 2017

Item 4 of the provisional agenda

Rail Security

Observatory on Rail Security

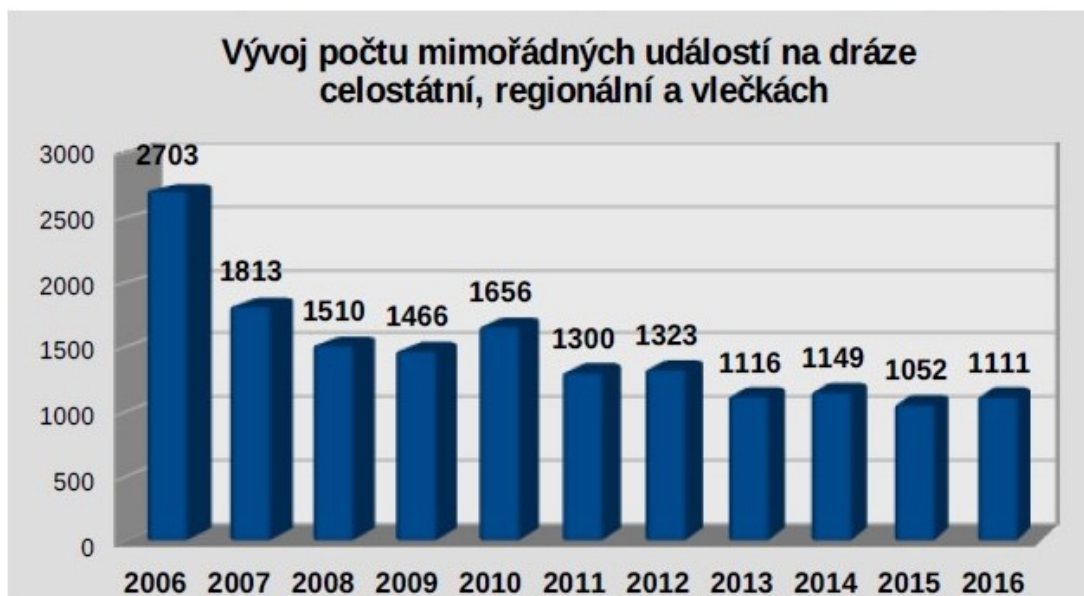
Submitted by the Government of the Czech Republic

Rail Traffic Safety in the Czech Republic

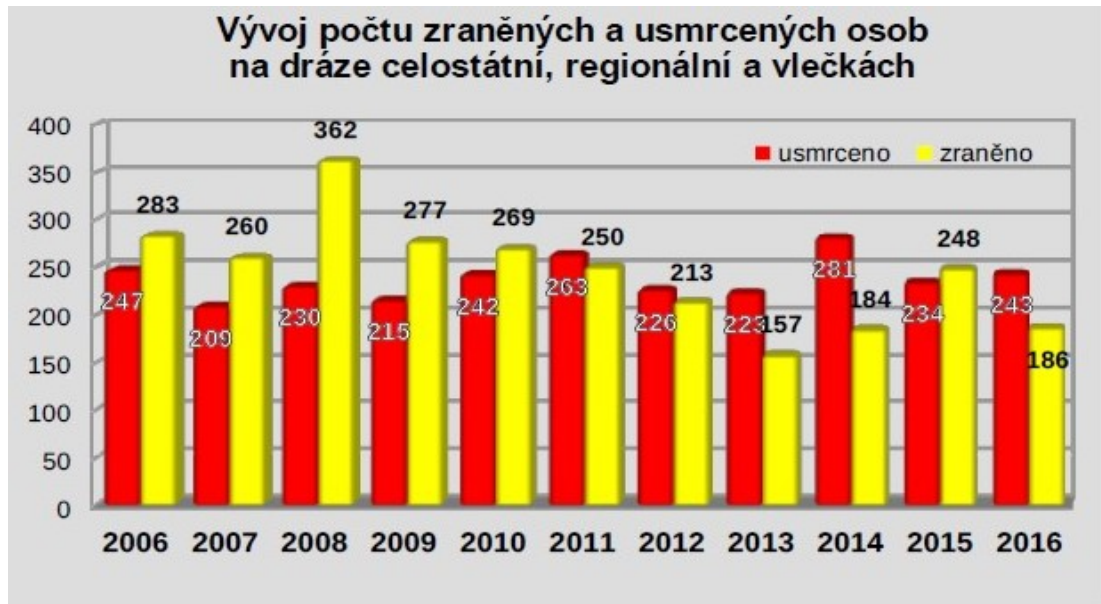
Source: DICR (Rail Inspection), DUCR (Rail Authority), PCR (National Police)

Rail traffic accidents and incidents

Number of accidents and incidents (2003-2016)



Number of fatalities and injuries (2003-2016)



Fatalities

Injuries

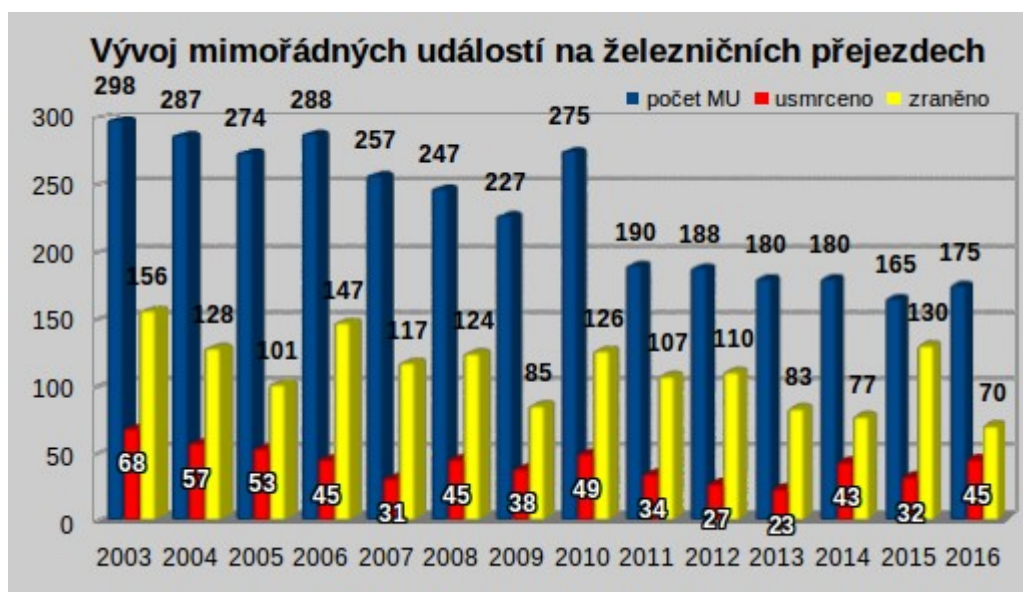
Number of accidents and incidents by category of incident and region (2016)

Rail-Rail Rail-Obstacle Derailment Fire Unauthorised Rail-Person Level X Others Total
Σ fatal inj. movement

| Kraj | Počet mimořádných událostí na dráze celostátní, regionální a vlečkách | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---|----------|-----------|-----------------------|----------|----------|---------------|----------|----------|-----------|----------|----------|------------------|----------|----------|----------------|------------|-----------|-------------------------|-----------|-----------|------------|----------|-----------|------------------|------------|------------|
| | Srážky DV s DV | | | Srážky DV s překážkou | | | Vykolejení DV | | | Požáry DV | | | Nedovolená jízda | | | Střet s osobou | | | Střetnutí na přejezdech | | | Ostatní MU | | | Celkem MU (kraj) | | |
| | MU | Smrt | Zranění | MU | Smrt | Zranění | MU | Smrt | Zranění | MU | Smrt | Zranění | MU | Smrt | Zranění | MU | Smrt | Zranění | MU | Smrt | Zranění | MU | Smrt | Zranění | MU | Smrt | Zranění |
| Jihočeský | 2 | 0 | 1 | 21 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 1 | 6 | 0 | 0 | 10 | 8 | 2 | 17 | 6 | 4 | 8 | 0 | 2 | 74 | 14 | 10 |
| Jihomoravský | 4 | 0 | 1 | 5 | 0 | 1 | 10 | 0 | 0 | 6 | 0 | 0 | 16 | 0 | 0 | 37 | 30 | 7 | 8 | 3 | 12 | 16 | 0 | 4 | 102 | 33 | 25 |
| Karlovarský | 3 | 0 | 5 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 3 | 1 | 6 | 2 | 4 | 3 | 1 | 0 | 28 | 6 | 11 |
| Královéhradecký | 2 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 2 | 0 | 0 | 5 | 0 | 0 | 10 | 8 | 2 | 13 | 6 | 6 | 2 | 0 | 0 | 48 | 14 | 8 |
| Liberecký | 0 | 0 | 0 | 11 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 11 | 8 | 3 | 7 | 1 | 2 | 3 | 0 | 0 | 39 | 9 | 5 |
| Moravskoslezský | 9 | 0 | 0 | 16 | 0 | 0 | 21 | 0 | 0 | 8 | 0 | 0 | 14 | 0 | 0 | 28 | 17 | 11 | 10 | 1 | 2 | 35 | 0 | 2 | 141 | 18 | 15 |
| Olomoucký | 1 | 0 | 0 | 6 | 0 | 0 | 9 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 14 | 12 | 2 | 13 | 1 | 2 | 18 | 2 | 1 | 67 | 15 | 5 |
| Pardubický | 2 | 0 | 0 | 5 | 0 | 0 | 14 | 0 | 0 | 2 | 0 | 0 | 8 | 0 | 0 | 13 | 9 | 4 | 4 | 4 | 1 | 15 | 0 | 0 | 63 | 13 | 5 |
| Plzeňský | 2 | 0 | 0 | 10 | 0 | 3 | 7 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 10 | 9 | 1 | 13 | 2 | 4 | 14 | 0 | 3 | 62 | 11 | 11 |
| Praha | 3 | 0 | 0 | 6 | 0 | 1 | 8 | 0 | 0 | 1 | 0 | 0 | 13 | 0 | 0 | 23 | 17 | 6 | 6 | 1 | 2 | 13 | 0 | 1 | 73 | 18 | 10 |
| Středočeský | 9 | 0 | 3 | 17 | 0 | 0 | 28 | 0 | 0 | 11 | 0 | 0 | 16 | 0 | 0 | 47 | 32 | 16 | 41 | 8 | 23 | 44 | 1 | 5 | 213 | 41 | 47 |
| Ústecký | 3 | 0 | 0 | 13 | 0 | 1 | 20 | 0 | 1 | 6 | 0 | 0 | 13 | 0 | 0 | 26 | 24 | 2 | 14 | 4 | 1 | 18 | 0 | 1 | 113 | 28 | 6 |
| Vysočina | 1 | 0 | 9 | 3 | 0 | 0 | 7 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 10 | 6 | 4 | 8 | 4 | 3 | 6 | 0 | 1 | 37 | 10 | 18 |
| Zlínský | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 7 | 0 | 0 | 15 | 10 | 6 | 16 | 3 | 2 | 2 | 0 | 2 | 51 | 13 | 10 |
| Celkem MU (druh) | 41 | 0 | 19 | 133 | 0 | 7 | 142 | 0 | 1 | 52 | 0 | 2 | 112 | 0 | 0 | 258 | 193 | 67 | 176 | 46 | 68 | 197 | 4 | 22 | 1111 | 243 | 186 |

Same indicators available also for Main lines – Regional - Sidings

Accidents at level crossings (2003-2016)



Number of accidents

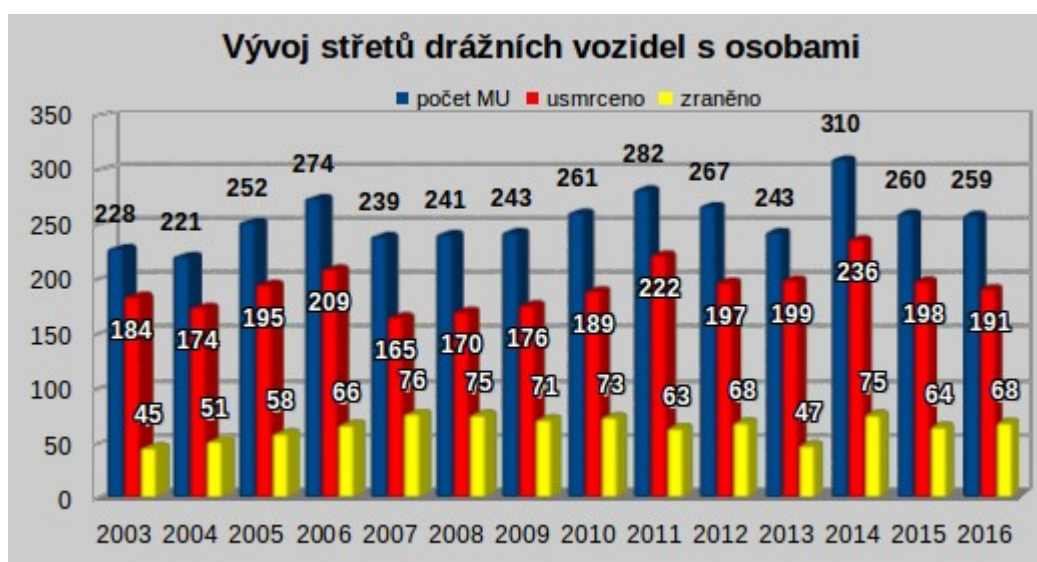
Fatalities

Injuries

Number of accidents by type of protection of level crossing (2016)

| | <i>St. Andrews Cross</i> | <i>Red signal without barriers</i> | <i>Red signal with barriers</i> | <i>Total</i> |
|-------------------------|--------------------------|------------------------------------|---------------------------------|--------------|
| <i>Nr. of crossings</i> | 3 938 | 2 356 | 1 310 | 7 961 |
| accidents | 58 | 74 | 29 | 161 |
| fatalities | 5 | 24 | 15 | 44 |
| injuries | 21 | 32 | 13 | 66 |

Accidents – collisions with persons (2003-2016)



Number of accidents

Fatalities

Injuries

Share of suicides (estimated by DICR) ca 30-40 %; National Police registers annually 130-150 suicides “jumping under moving object” (i.e. rail or road vehicle in motion)

Other major reasons of accidents: trespassing – crossing of track against red signal or barriers, crossing of rail track/shortcut at prohibited places, shortcut along track; rare cases of falling out of unlocked & unsecured coach doors

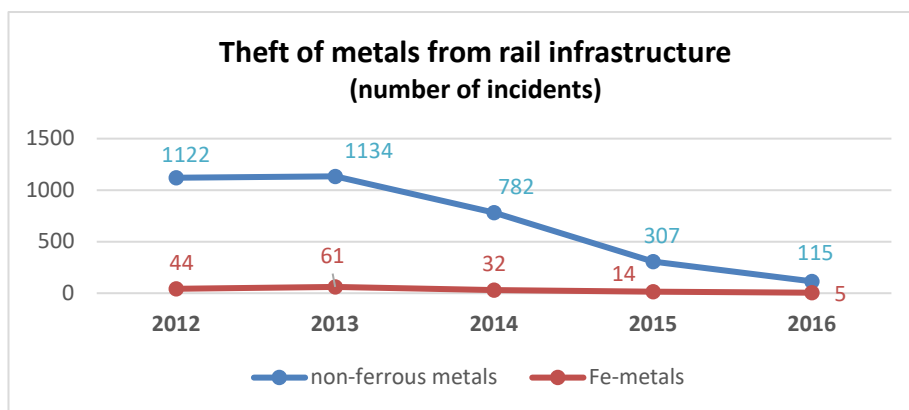
Security on railways

Source: SŽDC (Infrastructure Manager), ČD Cargo (national rail freight operator)

Criminal offences

Theft of cables, wires, transformers and other signalling equipment, rails and other copper and metal objects

Used to be very serious problem > *countermeasure*: Significant decrease after legislative change (Regulation 27/2015) – metal scrap is not bought up for cash



Similar problem existed in road management – theft of road signs, manhole covers, crash barriers

Theft of belongings of rail passengers

Problem on some long-distance night trains > *countermeasure*: police and security guards on board

Theft and damage of load on freight trains

Used to be serious problem at border stations > *countermeasure*: almost diminished with abolishing of borders (accession to the EU)

Still problem at big terminals and shunting stations > *countermeasure*: security agency patrols, better technical protection of sites (CCTV, lightning, fencing, etc.)

Vandalism

Still lasting serious problem – graffiti on rolling stock, station buildings and properties, damage on properties and furnishing at stations > *countermeasure*: no efficient measures implemented so far

Concentration of homeless and other asocial persons at stations, pickpocketing

Quite common problem throughout the country > *countermeasure*: police and security guards inside and in vicinity of stations, CCTV, night closure of public spaces

Research Projects and Activities [CDV Transport Research Centre]

| <i>Acronym</i> | <i>Contract</i> | <i>Description</i> |
|-------------------|--|--|
| KOMON | TACR 2011-13 | Continual monitoring of railway sleeper subgrade capacity |
| SMART RAIL | FP7 2013-20 | Cost-effective improvement of rail transport infrastructure |
| DIAKOL | TACR 2011-15 | Operational diagnostics of the qualitative indicators of railway tracks by measuring its spatial deformation |
| OSUZI | TACR 2016 | Railway Infrastructure Maintenance System Optimisation |
| AMELIA | TACR 2014-17 | Trespassing railway property - research of situation and proposal of measures for prevention and mitigation of consequence |
| ARIANA | TACR 2011-13 | The research of drivers' motivation for traffic rules' breaking in proximity of level crossings, and survey of further possibilities of automatic camera systems for prevention and repression |
| RÜTTLEX | ÖBB Infrastruktur and BMVIT Austria, 2014-2016 | Rumble Strips at Level Crossings |