Recovery of the Railways Safety Indicators


Scope

The UIC Safety Database has been recording every significant accident since 2006, and now includes data from 32 European, Asian, and Middle Eastern members. Six new infrastructure managers (IMs) also joined the Safety Database in 2021/2022: LTG (Lithuania), NRIC (Bulgaria), EUSKOTREN (Spain), FGC (Spain), OSE (Greece) and INFRAKOS (Kosovo).

The impact of the COVID-19 pandemic on traffic in 2020 and 2021

Rail traffic was profoundly disrupted by the COVID-19 pandemic from March 2020 onwards. Following government measures (lockdowns, curfews, work from home, travel restrictions), freight and passenger transport fell by over 20% in comparison to January 2020. Traffic levels from the beginning of the year only resumed from July onwards, although this remained lower than in 2019. Averaged over the course of the year, the drop in traffic was 10%. Traffic picked up in 2021 but still did not reach 2019 levels. 2016 was the only year that the levels exceeded.

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A significant accident: any accident involving at least one rail vehicle in motion, resulting in at least one killed or seriously injured person, or in significant damage to stock, track, other installations or environment, or extensive disruptions to traffic.

Accidents in workshops, warehouses and depots are excluded.
The impact of the COVID-19 pandemic on significant accidents in 2020 and 2021

The number of accidents per train-km decreased every year between 2016 and 2019. However, the pandemic ended this trend. The indicator showed a slight rise in 2020 and again in 2021 but remained well below the values for 2016-2018.

A continued decrease in the fatality indicator

Since 2016 there has been a continuous decrease in casualties per train-km, with this being the trend well before 2016. This decrease was not halted by the pandemic in 2020 and 2021. The 2021 fatality indicator was the lowest it has ever been since the UIC database on significant accidents was created in 2006.
The UIC Safety Index

The UIC Safety Index goes beyond merely providing statistics on accident rates, each accident is moderated according to cause, type, frequency and victim category. This makes it possible to gain a more detailed understanding of general safety levels, independent of fortunately rare high-impact events. The lower the index, the better safety is understood.

The steady improvement of this indicator between 2016 and 2019 was clearly halted by the COVID-19 pandemic. In 2020, the indicator returned to levels exceeding those in 2018. On the other hand, the index recorded improvement in 2021 but did not return to 2019 lows. This shows that railways systems are extremely resilient when it comes to safety.

Members of UIC’s Safety Database in 2022
ADIF (Spain), BANE NOR SF (Norway), CFL (Luxembourg), CFR-SA (Romania), CIE (Ireland), DB AG (Germany), EUSKOTREN (Spain), FGC (Spain), FS RFI (Italy), FTIA (Finland), HŽ (Croatia), Network Rail (UK), Infrabel (Belgium), INFRAKOS (Kosovo), IP (Portugal), KRRI (South Korea), LTG (Lithuania), MÁV (Hungary), NRIC (Bulgaria), ÖBB (Austria), OSE (Greece), PKP (Poland), ProRail (Netherlands), RAI (Iran), SNCF Réseau (France), SAR (Saudi Arabia), SBB CFF FFS (Switzerland), SŽ (Slovenia), SŽ (Czech Republic), TCDD (Turkey), Trafikverket (Sweden), ŽSR (Slovakia).

NB: the above graphs are based on data provided by the 29 members present since at least 2016.

Definitions

Train-km: unit of measurement representing the movement of a train over one kilometre. The total train-km is the basic measurement for rail traffic.

Significant accident: any accident involving at least one rail vehicle in motion, resulting in at least one killed or seriously injured person, or in significant damage to stock, track, other installations or environment, or extensive disruptions to traffic. Accidents in workshops, warehouses and depots are excluded.

Victims: fatalities and serious injuries.

Person killed: any person killed immediately or dying within 30 days as a result of an injury accident, excluding suicides.

Person seriously injured: any person injured who was hospitalized for more than 24 hours as a result of an accident, excluding attempted suicides.

Indicators: absolute numbers divided by the total number of train-km.

Access to the document

The UIC 2022 report on safety can be downloaded from: http://safetydb.uic.org

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