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Rail accident fatalities in the EU

Data from January 2019
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Highlights

In 2017, there were 1 855 significant railway accidents in the EU, with a total of 977 fatalities and 763 persons seriously injured.

There were 437 fewer significant railway accidents in 2017 compared with 2010, a reduction of 19 %.

In 2017, almost two thirds of fatalities from railway accidents in the EU involved unauthorised persons on the tracks (62 %) and around a third occurred at level crossings (31 %).

Number of persons injured in railway accidents in the EU, by category of person, 2010-2017

2010 2011 2012 2013 2014 2015 2016 2017 (persons) 050 100 150 200 250 300 350 400 450

Unauthorised persons Level crossing users Railway passengers Railway employees Others

- 2015: provisional data
- Source: Eurostat (online data code: tran_sf_railvi)

In 2017, 1 855 significant [railway](#) accidents were reported in the [EU-28](#). A total of 977 persons were killed in these accidents, while another 763 persons were seriously injured. At EU level, the number of fatalities in railway accidents decreased gradually from 1 270 in 2010 to 964 in 2016. This level remained relatively stable in 2017, increasing by 13 fatalities (+1.3 %) compared to the previous year.

Suicides occurring on the railways are reported separately. With 2 773 reported cases in 2017, suicides outnumber the victims accounted for by railway accidents.

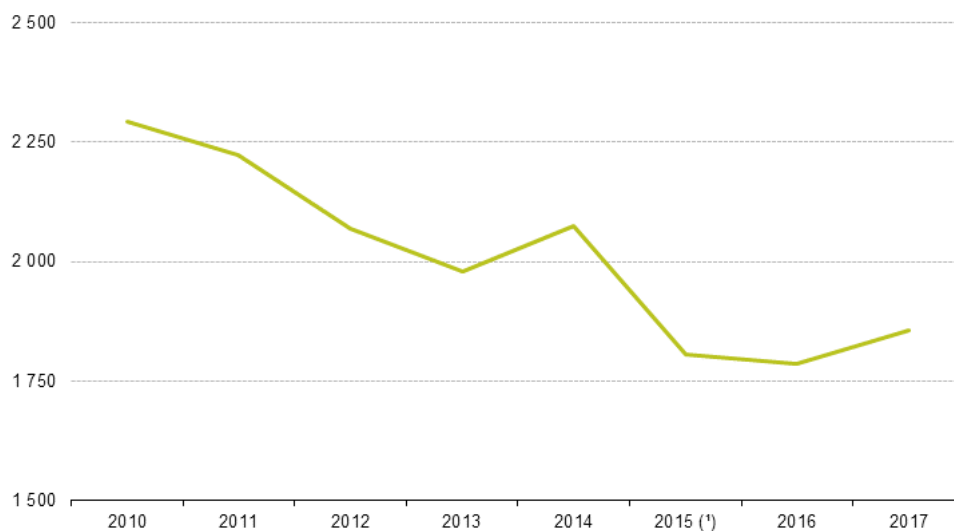
Eurostat publishes data collected by the European Railway Agency (ERA) in [Eurobase](#). This information is also published by ERA.

Slight rise in railway accidents

3.8 % more railway accidents in the EU-28 in 2017 compared to 2016

The number of significant railway accidents fell between 2010 and 2016, with the exception of an increase in 2014. In 2017, the number of accidents increased by 68 accidents compared to 2016, to a total of 1 855 accidents (+3.8 %) (Figure 1). Nevertheless, railway safety has generally improved in the EU, with 437 fewer accidents in 2017 compared to 2010, a reduction of 19.1 %. In 2015, the decrease compared with the previous year was particularly marked (-13.1 %). In 2017, however, the number of significant accidents was slightly above the level of 2015. The increase in accidents from 2016 to 2017 did not concern all accident categories: while the number of [level crossing accidents](#) (+34 accidents), derailments (+29 accidents), collisions (+13 accidents) and [accidents to persons by rolling stock in motion \(excl. suicides\)](#) (+11 accidents) all increased in 2017 compared to 2016, the number of [fires in rolling stock](#) (-15 accidents) and other significant railway accidents (-4 accidents) decreased.

Number of railway accidents in the EU, 2010-2017



(*) Provisional data

Source: Eurostat (online data code: tran_sf_railac)



Figure 1: Number of railway accidents in the EU, 2010-2017

Source: Eurostat ([tran_sf_railac](#))

Accident figures are comparable from 2010 onwards, following the implementation of common definitions across all Member States. Prior to 2010, Belgium, Poland and Slovakia generally reported all railway accidents instead of only significant accidents. As a result, there was a lower number of accidents in several categories from 2010 onwards compared to previous years.

Looking at the detailed 2017 figures on significant railway accidents (Table 1), the largest category at EU level was accidents to persons caused by rolling stock in motion, with 1 080 accidents representing 58 % of the total. Typically, these accidents involve persons on railway tracks (unauthorised persons or trespassers) that are hit by a running train. Accidents at level crossings, including pedestrians, is the other main category, with a total number of 467 accidents in 2017 (25 % of the total). Together, these two categories represented 83 % of the total number of railway accidents in the EU.

Number of railway accidents, by type of accident, 2017

	TOTAL	Collisions	Derailments	Level crossing accidents (incl. pedestrians)	Accidents to persons by rolling stock in motion (excl. suicides)	Fires in rolling stock	Other accidents
EU-28	1 855	114	97	467	1 080	21	76
Belgium	33	1	2	12	17	0	1
Bulgaria	47	1	5	11	29	1	0
Czechia	97	11	2	36	39	2	7
Denmark	12	2	0	2	8	0	0
Germany	346	38	8	73	198	0	29
Estonia	19	4	0	13	2	0	0
Ireland	4	0	1	0	3	0	0
Greece	29	1	3	6	18	0	1
Spain	52	5	10	12	21	1	3
France	151	7	8	41	87	0	8
Croatia	33	1	2	10	18	0	2
Italy	104	2	5	12	75	3	7
Latvia	24	0	1	7	15	1	0
Lithuania	27	0	0	2	25	0	0
Luxembourg	1	1	0	0	0	0	0
Hungary	160	5	10	33	99	8	5
Netherlands	26	2	1	11	7	3	2
Austria	60	7	5	26	22	0	0
Poland	252	10	12	57	172	0	1
Portugal	29	0	3	7	19	0	0
Romania	145	0	1	43	101	0	0
Slovenia	11	1	3	6	1	0	0
Slovakia	65	1	1	14	48	1	0
Finland	17	0	0	7	6	0	4
Sweden	40	2	4	16	11	1	6
United Kingdom	71	12	10	10	39	0	0
Channel Tunnel	0	0	0	0	0	0	0
Norway	16	10	3	2	1	0	0
Switzerland	44	3	3	1	30	0	7
Montenegro	:	:	:	:	:	:	:
North Macedonia	45	0	23	1	4	0	17
Turkey	:	:	:	:	:	:	:

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Source: Eurostat (online data code: tran_sf_railac)



Table 1: Number of railway accidents, by type of accident, 2017

Source: Eurostat ([tran_sf_railac](#))

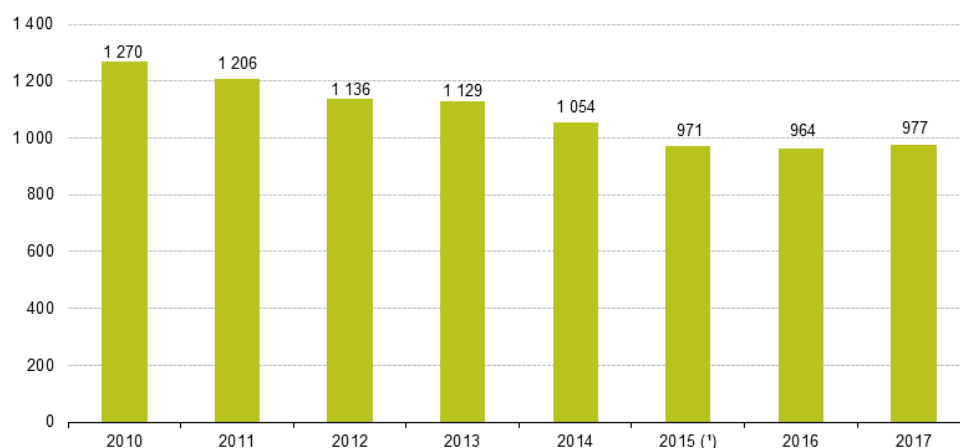
Table 1 also shows that Germany, followed by Poland, registered the highest number of railway accidents among the Member States in 2017; together these two countries recorded close to one third of all significant railway accidents in the EU. With 160 accidents, Hungary accounted for 9 % of the railway accidents in the EU. In contrast, Luxembourg reported only one significant railway accident in 2017 (a collision) and Ireland four accidents (one derailment and three accidents to persons caused by rolling stock in motion).

Persons killed in railway accidents

More than 60 % of the persons killed in railway accidents in 2017 were unauthorised persons on railway premises

Figure 2 shows the number of persons killed in railway accidents in the EU for each reference year from 2010 to 2017. The total number of fatalities gradually declined from 1 270 persons killed in railway accidents in 2010 to 971 persons in 2015. In the years 2016 and 2017, the fatalities remained roughly at the same level as in 2015, falling slightly to 964 persons killed in 2016 but increasing to 977 persons killed in 2017. Over the period from 2010 to 2017, this corresponds to a reduction in the number of persons killed in railway accidents by almost one quarter (-23.1 %).

Persons killed in railway accidents in the EU, 2010-2017



(*) Provisional data

Source: Eurostat (online data code: tran_sf_railvi)

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Figure 2: Persons killed in railway accidents in the EU, 2010-2017

Source: Eurostat ([tran_sf_railvi](#))

Focusing on 2017, fatalities in the category “Unauthorised persons” (Table 2) remained the largest category of victims, with 610 cases in 2017 (62 % of the total number of persons killed in railway accidents). The second largest category was “Level crossing users” with 297 deaths (30 %). Only a fraction of the registered fatalities were railway passengers. In most of the years for which harmonised data are available (2010 onwards), railway passenger fatalities represented only a marginal share (1-3 %) of the persons killed. The exception was 2013, when the 97 railway passengers killed in accidents represented almost 9 % of the total fatalities. This was solely attributable to a railway accident in Santiago de Compostela in July 2013. The 79 fatalities from this accident represented all Spain’s fatalities in the category “Railway passengers” and 81 % of the fatalities in that category in the EU-28 in 2013. In 2017, the share of railway passengers in the total number of fatalities was 1.5 % (15 railway passengers killed).

Number of persons killed in railway accidents, by category of user, 2017

	TOTAL	Railway passengers	Railway employees	Level crossing users	Unauthorised persons	Others
EU-28	977	15	26	297	610	29
Belgium	20	1	3	9	7	0
Bulgaria	16	0	0	5	9	2
Czechia	35	1	0	20	10	4
Denmark	6	0	0	1	5	0
Germany	157	2	10	44	93	8
Estonia	7	0	0	5	2	0
Ireland	2	0	0	0	2	0
Greece	21	1	2	4	14	0
Spain	29	1	1	14	10	3
France	94	1	2	42	46	3
Croatia	20	0	0	7	13	0
Italy	55	2	2	8	43	0
Latvia	16	0	0	7	6	3
Lithuania	17	0	1	2	14	0
Luxembourg	1	0	1	0	0	0
Hungary	101	1	0	20	79	1
Netherlands	12	0	0	6	5	1
Austria	18	0	0	7	10	1
Poland	171	1	1	42	127	0
Portugal	20	0	0	6	13	1
Romania	59	0	2	16	41	0
Slovenia	5	0	0	5	0	0
Slovakia	30	1	1	5	22	1
Finland	10	0	0	9	1	0
Sweden	14	0	0	4	10	0
United Kingdom	41	3	0	9	28	1
<i>Channel Tunnel</i>	0	0	0	0	0	0
Norway	3	0	0	2	1	0
Switzerland	17	0	1	0	16	0
Montenegro	:	:	:	:	:	:
North Macedonia	2	0	0	:	:	2
Turkey	:	:	:	:	:	:

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Source: Eurostat (online data code: tran_sf_railvi)

eurostat 



Table 2: Number of persons killed in railway accidents, by category of user, 2017

Source: Eurostat ([tran_sf_railvi](#))

The overall trends in the data show that railway travel is increasingly safe, with few fatalities among rail passengers. The ERA estimated that for the period 2010-2014, the fatality risk for passengers travelling on trains was 0.14 fatalities per billion train-kilometres at EU level, one third lower than for a bus/coach passenger but at least twice as high as for a commercial aircraft passenger (For further details, see ERA's annual publication on "Railway Safety Performance in the European Union"). However, it should be noted that there are substantial differences between Member States, with the risk for railway passengers in some Member States significantly higher than the EU average.

Causes of railway accident fatalities

Most fatalities from railway accidents occur at level crossings or involve unauthorised persons on the tracks

Table 3 outlines the fatalities from railway accidents according to the type of accident. In 2017, more than two thirds of the fatalities in the EU (68 % of the total) were caused by “Accidents to persons by rolling stock in motion”, typically involving persons that are unauthorised on the railway tracks and are hit by a running train. Together with level-crossing accidents (31 %), these two accident types were responsible for over 98 % of all deaths occurring on railways in the EU in 2017.

The number of persons killed in accidents to persons by rolling stock in motion was particularly high in Poland (129 fatalities) and Germany (113 fatalities), in both countries roughly three quarters of the persons killed in railway accidents in the country. With 81 fatalities, relative to its size also Hungary recorded a high number of persons killed in accidents to persons by rolling stock in motion.

Fewer persons seriously injured in railway accidents

Significant reduction in persons seriously injured in railway accidents since 2010, especially for railway passengers

Over the period 2010-2017, the number of persons seriously injured in railway accidents at EU level fell for all categories of persons (Figure 3). This trend is noticeable despite occasional year-to-year fluctuations. Whereas the average annual decrease in the total number of seriously injured persons averaged 11.4 % per year from 2010 to 2015, in 2016 an increase of 14.1% in the number of injured persons was observed. The high number of injured railway passengers registered in 2010 was due to the severe train collision at Buizingen (Belgium), with 171 persons seriously injured. In 2016, the number of injured passengers registered a significant increase compared to the previous year, before falling again in 2017.

Number of persons killed in railway accidents, by type of accident, 2017

	TOTAL	Collisions	Derailments	Level crossing accidents (incl. pedestrians)	Accidents to persons by rolling stock in motion (excl. suicides)	Fires in rolling stock	Other accidents
EU-28	977	4	6	298	663	0	6
Belgium	20	0	1	9	10	0	0
Bulgaria	16	0	0	5	11	0	0
Czechia	35	0	0	20	15	0	0
Denmark	6	0	0	0	6	0	0
Germany	157	0	0	44	113	0	0
Estonia	7	0	0	5	2	0	0
Ireland	2	0	0	0	2	0	0
Greece	21	1	3	4	13	0	0
Spain	29	0	0	14	15	0	0
France	94	0	0	42	50	0	2
Croatia	20	0	0	7	13	0	0
Italy	55	0	0	8	45	0	2
Latvia	16	0	0	7	9	0	0
Lithuania	17	0	0	2	15	0	0
Luxembourg	1	1	0	0	0	0	0
Hungary	101	0	0	19	81	0	1
Netherlands	12	0	0	6	5	0	1
Austria	18	2	0	7	9	0	0
Poland	171	0	0	42	129	0	0
Portugal	20	0	0	6	14	0	0
Romania	59	0	2	16	41	0	0
Slovenia	5	0	0	5	0	0	0
Slovakia	30	0	0	6	24	0	0
Finland	10	0	0	9	1	0	0
Sweden	14	0	0	6	8	0	0
United Kingdom	41	0	0	9	32	0	0
Channel Tunnel	0	0	0	0	0	0	0
Norway	3	0	0	3	0	0	0
Switzerland	17	1	0	0	16	0	0
Montenegro	.	.	.	.	.	.	.
North Macedonia	2	0	0	0	2	0	0
Turkey

(.) Not available

Source: Eurostat (online data code: tran_sf_railvi)

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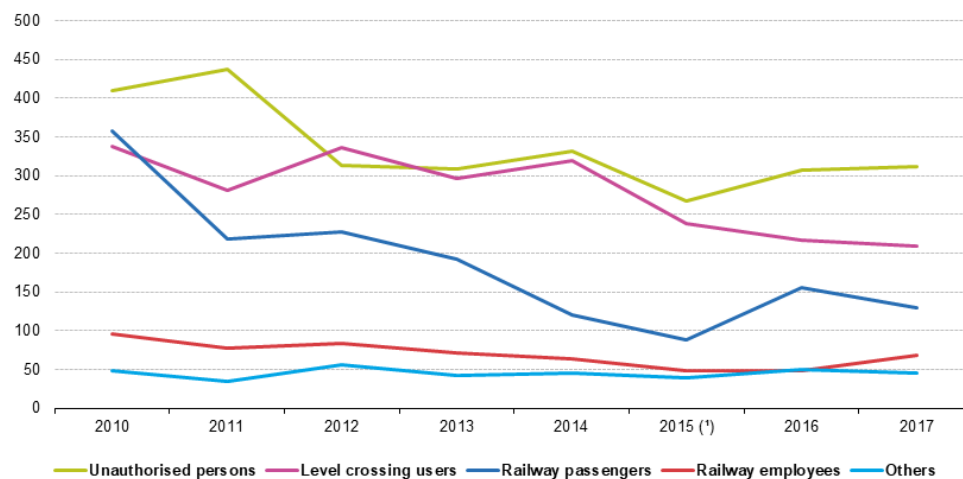


Table 3: Number of persons killed in railway accidents, by type of accident, 2017

Source: Eurostat ([tran_sf_railvi](#))

Focusing on the year 2017, Table 3 illustrates that the pattern of the various accident categories is directly reflected in the number of persons injured in the different types of accidents. Most persons seriously injured were counted in accidents involving rolling stock in motion (442 injured persons, or 58 % of the total) followed by level crossing accidents (219 persons, or 29 %).

Number of injured persons in railway accidents in the EU, by category of person, 2010-2017



(*) Provisional data

Source: Eurostat (online data code: tran_sf_railvi)

eurostat 



Figure 3: Number of injured persons in railway accidents in the EU, by category of person, 2010-2017

Source: Eurostat ([tran_sf_railvi](#))

Far fewer persons were injured in the other types of accidents. Train collisions seriously injured 75 persons in 2017, roughly the same as the previous year. In 15 Member States, no persons were seriously injured in train collisions in 2017. Overall in the EU, there were only 12 persons seriously injured in derailments in 2017, with six persons in Greece, three persons in Belgium, two persons in Spain and one person in Germany. Germany (88 persons seriously injured), Romania (56 persons) and Poland (45 persons) recorded the highest numbers of persons injured in accidents to persons by rolling stock in motion. It should be noted that the comparison of seriously injured persons between countries may be slightly biased due to differences in reporting regimes.

Number of persons injured in railway accidents, by type of accident, 2017

	TOTAL	Collisions	Derailments	Level crossing accidents (incl. pedestrians)	Accidents to persons by rolling stock in motion (excl. suicides)	Fires in rolling stock	Other accidents
EU-28	763	75	12	219	442	0	15
Belgium	19	1	3	3	12	0	0
Bulgaria	28	0	0	9	19	0	0
Czechia	58	4	0	28	26	0	0
Denmark	3	0	0	0	3	0	0
Germany	165	40	1	34	88	0	2
Estonia	4	0	0	4	0	0	0
Ireland	1	0	0	0	1	0	0
Greece	15	0	6	2	6	0	1
Spain	16	5	2	1	7	0	1
France	58	0	0	16	40	0	2
Croatia	11	0	0	5	6	0	0
Italy	37	2	0	4	31	0	0
Latvia	8	0	0	2	6	0	0
Lithuania	10	0	0	1	9	0	0
Luxembourg	1	1	0	0	0	0	0
Hungary	40	0	0	14	24	0	2
Netherlands	6	0	0	2	3	0	1
Austria	38	6	0	19	13	0	0
Poland	87	13	0	29	45	0	0
Portugal	5	0	0	0	5	0	0
Romania	75	0	0	19	56	0	0
Slovenia	3	0	0	2	1	0	0
Slovakia	39	2	0	13	24	0	0
Finland	11	0	0	5	5	0	1
Sweden	12	1	0	6	4	0	1
United Kingdom	9	0	0	1	8	0	0
Channel Tunnel	2	0	0	0	0	0	2
Norway	0	0	0	0	0	0	0
Switzerland	17	0	0	0	17	0	0
Montenegro	.	.	.	.	.	.	.
North Macedonia	3	0	0	0	1	2	0
Turkey

(.) Not available

Source: Eurostat (online data code: tran_sf_railvi)

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Table 4: Number of persons injured in railway accidents, by type of accident, 2017

Source: Eurostat ([tran_sf_railvi](#))

Suicides on railways

Suicides occurring on the railways by far outnumber the number of persons killed and seriously injured in accidents

Suicides occurring on the railways are reported separately from the persons killed or injured in railway accidents. For the EU as a whole, the number of such suicides remained at between 2 700 and 3 000 each year in the period 2010-2017. The highest number was recorded in 2012 with 2 982 suicides on railway premises. In the following years, the numbers fluctuated, changing by between -5.5 % to +3.8 % year-on-year. In 2017, 2 773 suicides were reported, 3.4 % fewer than in the previous year. The number of suicides on railway premises is significant in most of the Member States. With 771 recorded

suicides in 2017, Germany alone accounted for over one quarter (28 %) of these suicides recorded in the EU. There were also significant number of such suicides in France (297 recorded cases), the United Kingdom (245 recorded cases), the Netherlands (215 recorded cases) and Czechia (203 recorded cases).

Suicides on railway premises, 2010-2017

	2010	2011	2012	2013	2014	2015	2016	2017
EU-28	2 756	2 890	2 982	2 819	2 895	2 765	2 870	2 773
Belgium	84	98	102	94	97	92	104	88
Bulgaria	18	27	33	17	29	22	15	23
Czechia	198	235	224	207	279	205	203	203
Denmark	20	20	32	23	21	27	16	24
Germany	899	853	872	834	781	806	798	771
Estonia	0	0	5	1	5	7	1	5
Ireland	6	6	5	3	5	2	5	7
Greece	2	4	1	5	4	7	4	3
Spain	124	128	138	118	139	108	115	126
France	328	332	356	291	298	302	314	297
Croatia	19	28	24	15	28	30	27	21
Italy	109	140	124	134	143	127	165	176
Latvia	13	10	7	3	6	11	9	7
Lithuania	4	5	13	8	6	4	10	3
Luxembourg	3	7	5	4	6	3	3	2
Hungary	121	155	148	79	79	57	76	82
Netherlands	201	215	202	220	192	223	221	215
Austria	90	87	80	99	92	95	99	73
Poland	44	28	80	71	71	88	116	112
Portugal	51	42	58	47	44	39	32	52
Romania	23	76	57	66	80	42	48	48
Slovenia	15	25	16	13	18	16	26	15
Slovakia	48	40	38	55	44	64	61	69
Finland	44	64	32	55	64	48	60	56
Sweden	68	62	82	90	77	86	69	50
United Kingdom	224	203	248	267	287	254	273	245
Channel Tunnel	0	0	0	0	0	0	0	0
Norway	7	11	8	10	15	7	12	18
Switzerland	126	103	140	140	151	145	140	140
Montenegro	:	:	:	:	:	:	:	:
North Macedonia	:	:	:	:	:	:	:	:
Turkey	:	:	:	:	:	:	:	:

(:) Not available

Source: Eurostat (online data code: tran_sf_railsu)

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Table 5: Suicides on railway premises, 2010-2017

Source: Eurostat ([tran_sf_railsu](#))

It is not easy to address measures aimed at preventing suicides from occurring on the railways. Barriers are often built at hotspots and railway station personnel are given training to tackle attempted suicides.

Source data for tables and graphs

-  [Rail accident fatalities in the EU \(January 2019\)](#)

Data sources

The sources used for the statistics in this publication are data reported to the European Union Agency for Railways (ERA). Railway safety data have been collected by ERA since 2006 through the Common Safety Indicators (CSIs). These were introduced by Annex I of the Railway Safety Directive (Directive 2004/49/EC). Member States have a legal obligation to submit their CSI data to the ERA. ERA publishes an overview of safety-related CSIs as soon as data have been consolidated. The CSIs data are reported via and available through the [ERAIL system](#). The full set of CSI data is made available in the annually published Railway Safety Performance Report. Accident figures are reliable from 2010 onwards, following the strict application of standard definitions. In the past, Belgium, Poland and Slovakia typically reported all railway accidents instead of significant accidents only. This meant a lower count in several categories of accidents since 2010.

Eurostat has signed an agreement with ERA to disseminate these railway safety data through Eurobase. The data disseminated by Eurostat constitute a subset of the data available at ERA.

Railway accident data were also collected through Annex H providing for statistical returns on railway traffic and transport (Regulation (EC) No 91/2003). This Regulation has been recast and replaced by Regulation (EC) No 2018/643. The data collection through Annex H was phased out and replaced with the data collected by ERA. However, Montenegro, the Former Yugoslav Republic of Macedonia and Turkey continue to provide data according to Annex H of Regulation (EC) No 91/2003, as they do not have an agreement with ERA.

The railway accident data collected by ERA data are located in the “Horizontal multi-modal information (tran)” section under “Transport safety (tran_sf)” in Eurobase. Historic data based on Annex H can be found in the section “Railway transport - Accidents (rail_ac)”.

Some differences may occasionally exist between these data, as ERA handles its own compilation procedures and quality checks. Also, whereas data reported to ERA are provided by the national safety authorities, data reported to Eurostat under the framework of Regulation (EC) No 91/2003 were reported by the national statistical institutes. The NSIs might have depended on data from the same national safety authorities, but not necessarily.

Context

National rail networks have different technical specifications for infrastructure – gauge widths, electrification standards and safety and signalling systems – which make it more difficult and costly to run a train from one country to another. EU policies exist to overcome such differences. Creating an integrated European railway area thus requires better technical compatibility – 'interoperability' – of infrastructure, rolling stock, signalling and other subsystems of the rail system. Procedures for authorising the use of rolling stock across the EU's [rail network](#) also need to be simplified.

The European Union Agency for Railways (ERA) helps promoting interoperability and develop uniform technical standards, a process in which cooperation between EU countries and rail stakeholders is essential.

ERA, based in Lille/Valenciennes (France), is helping to build an integrated European railway area by improving rail safety and interoperability. Set up in 2006, it develops shared technical specifications and approaches to safety, working closely with stakeholders from the rail sector and national authorities, the EU institutions and other interested parties. Featuring a dedicated safety unit, the Agency also monitors and reports on rail safety in the EU.