SWEDISH
TRANSPORT
AGENCY

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RAILWAY SAFETY REPORT

SWEDISH TRANSPORT AGENCY 2012 ANNUAL REPORT PURSUANT TO ARTICLE 18 OF DIRECTIVE 2004/49/EC (JARNVAGSSAKERHETSDIREKTIVET [the Railway Safety Directive])

Revisions

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0.1	06/09/2013	Eva Karlsson	
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1.0	26/09/2013	Eva Linmalm	Staffan Widlert

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Annexes

A.1 SCOPE OF THE REPORT

This report is based on the template provided by the European Railway Agency (ERA) for Member States' railway safety reporting under the Railway Safety Directive[1] (hereinafter referred to as the Safety Directive). The conditions under which the Swedish railway system operates are mainly regulated by the Railway Act[2].

In accordance with the EU Safety Directive (2004/49/EC), all Member States must submit to the European Railway Agency (ERA) an annual report concerning the safety of the national railway system. This year's report, which covers 2012, is the seventh of its kind and primarily follows the guidance provided by ERA for said purpose.

Trams and metros are not included in the report. As certain infrastructure managers and railway undertakings are exempt from submitting safety reports (see section B.2.1), the indicators do not provide a measure for all railways in Sweden.

A.2 Summary in English (optional)

Please contact the Swedish Transport Agency for a summary in English.

B INTRODUCTION

B.1 Background and target audience

This report has been prepared for and as tasked by the ERA. However, it may also be of interest to employees of the Swedish Transport Agency, the Ministry of Enterprise, Energy and Communications, Transport Analysis, other government agencies and research institutes, railway undertakings, infrastructure managers, and other stakeholders in the rail industry. The report may also be of interest to those with a general interest in railways and rail safety.

The report will be published on the Swedish Transport Agency website at www.transportstyrelsen.se and on the ERA website, where reports from other countries are also published, at www.era.europa.eu. ERA also publishes a consolidated report based on the reports that the countries submit.

The Safety Directive stipulates that the national safety authority of each Member State shall submit a report to ERA no later than 30 September each year[3]. The purpose of this report is to describe national safety levels and, pursuant to the Safety Directive, it should contain information on the development of railway safety, important changes in legislation and other regulations concerning railway safety, the development of safety certification and safety authorisations, as well as results of and experience relating to the safety authority's oversight activities.

The Safety Directive stipulates that the operators, i.e. railway undertakings and infrastructure managers, shall submit a safety report to the safety authority by 30 June each year[4]. In

[1] Directive 2004/49/EC

[2] Järnvägslagen (Railway Act) (2004:519)

[3] Directive 2004/49/EC, Chapter IV, Article 18.

[4] Directive 2004/49/EC, Chapter II, Article 9.

accordance with the directive, this report is to contain information on the organisation's corporate safety targets, reporting of information relevant to common safety indicators (CSIs), results of internal safety auditing, and observations on deficiencies and faults in the railway system that could be relevant to railway safety.

Swedish railways are governed by the Railway Act[5]. The government's Railway Ordinance[6] gave the Swedish Transport Agency the right to issue railway regulations. The Swedish Transport Agency's regulations are published in the Agency's Code of Statutes (TSFS).

Report templates and guidance have been prepared by a working party within ERA consisting of representatives from interested Member States' safety authorities (including Sweden). In Sweden, a reference group of representatives from both railway undertakings and infrastructure managers then contributed their opinions on the Swedish Transport Agency's guidance[7], which contains instructions and definitions for the operators' safety reports.

The Safety Directive included in the Second Railway Package has been incorporated in Swedish law since 1 July 2007. Annex 1 to the Safety Directive (which describes the reporting of CSIs) has been amended by Directive 2009/149/EC. Sweden was part of the task force that developed the revised annex. The same task force has also developed a common guidance for the indicators in order to improve reporting consistency.

In order to simplify and reduce the administrative burden on operators who are subject to reporting, the Swedish Transport Agency has collected safety reports together with other accident data collected and reported to Transport Analysis since 2008 (which, in turn, self-publishes the data on official accident statistics and also reports this data to the EU statistical office; Eurostat). However, there are certain differences in definitions which means that the figures vary somewhat because accidents on independent networks are included in the Transport Analysis and Eurostat statistics but excluded from those of ERA; see sections D.2 and J. The reporting operators are invited to submit reports via a form on the Swedish Transport Agency's website, via email, or by traditional mail.

The Swedish Transport Agency is also collaborating with Transport Analysis in its use of transport and track data gathered by the Swedish Transport Administration and thereafter forwarded to Transport Analysis, starting with the 2011 reporting (which covers 2010 data). The undertakings thus need not report this data to both Transport Analysis and the Swedish Transport Administration.

B. 2 Operators

The operators, i.e. railway undertakings and infrastructure managers, are the railway industry's main stakeholders. Those who wish to conduct rail operations in Sweden must apply for a permit to that effect from the Transport Agency. Permits are reviewed in accordance with the terms in the Swedish Railway Act and are granted to railway undertakings and infrastructure managers separately. Therefore, an organisation may have one or more authorisations. For example, an

[5] Järnvägslagen (Railway Act) (2004:519)

[6] Järnvägsförordningen (Railway Ordinance) (2004:526)

[7] Guidance for the application of TSFS 2011:86, Doc. No TSG2012-152.

infrastructure manage may also have authorisation for rail transport services in some cases. In Swedish legislation, infrastructure managers and railway undertakings are defined as follows[8]:

Railway undertakings: those who by virtue of license or specific permit provide traction and conduct rail transport.

Infrastructure manager: entity that manages railway infrastructure and operates installations belonging to that infrastructure.

Under these definitions, Sweden had 473 operators permitted to conduct railway operations in 2012.

Permit holders	**2012**
Railway undertakings	104
Infrastructure manager	369
Total	**473**

Table 1: Number of operators in 2012. The figures do not include transport operators and track owners that operate trams or metros unless they also are the railway undertaking or infrastructure manager

Operators are also called permit-holders and both the terms are used interchangeably.

The railway sector can be divided into two submarkets; a rail market and an infrastructure market.

Railway undertakings act on the rail market, upon which passenger and freight transport is conducted. The largest stakeholder on the rail market originates from the time when all railway operations were in the hands of the state. In Sweden, the conditions for passenger and freight transport were separated in 2008. Passenger transport was still regulated in 2008 and a state-owned company had the exclusive right to operate inter-regional passenger transport. In 2009, the Swedish Parliament approved the 'Competition on the railways' bill (2008/09:176), which entails a gradual opening-up of the market for rail passenger transport. The first step in this process was taken on July 1, 2009 when the market was opened up for weekend and holiday services. On 1 October 2009, the international passenger transport market was opened. Parliament's decision also means that the market was fully open from 1 October 2010. Freight traffic was already open to competition but is still dominated by the company which was formerly a part of the state railway administration.

The infrastructure market is strongly dominated by the state, which means that the dominant player is the infrastructure manager of the national track system. The rail network in Annex A.1 shows the geographical distribution of the state-owned rail network. 369 infrastructure managers had a safety authorisation in 2012. Of these, only 20 or so were major players in terms of the number of track kilometres. The other infrastructure managers typically have smaller track systems for their own use, such as industrial companies with their own track linking them to the national track system in order to transport their own goods.

[8] The Swedish Railway Act (2004:519), Chapter 1, Article 4.

B.2.1 Exempted operators

The Swedish Transport Agency has, in this report and on the basis of the Railway Act (2004:519), exempted railway undertakings and infrastructure managers that only operate on

1. local and regional rail networks that are independent and only intended for passenger or museum transport, or

2. rail networks that are not managed by the state and are only used by infrastructure managers for transporting their own goods.

The Swedish Transport Agency has made use of its ability to grant exemptions from the submission of safety reports; a consequence of this is that the majority of infrastructure managers have not needed to submit safety reports. A large group that is not exempted is comprised of the municipalities and ports permitted to conduct railway operations.

Operations on local and regional rail networks that are independent and only intended for passenger or museum traffic, such as the Saltsjöbana and the Roslagsbana, have been excluded from the report. Operations on rail networks which are not managed by the state and are used only by the infrastructure manager to transport their own goods have also been excluded from the report.

B.3 Summary/general trend analysis

There were 47 accidents that meet the requirements for reporting to the ERA[9] and 33 people either died or were seriously injured due to railway operations. The majority fatalities resulted from level crossing accidents with persons (7) or accidents to persons (7). See further section D.2 on CSIs.

Unlike accident data, the request for deviation data to be included in the safety reports reported by the operators was made only recently, which is clear from the fact that some operators still report all SPADs instead of only those that have to be reported, for example. Whenever the number of deviations has become too high compared with previous years, the Swedish Transport Agency has posed follow-up questions and then obtained corrected figures.

The Swedish Transport Agency has issued safety certificates and safety authorisations and exercised oversight primarily in the form of audits in accordance with the Safety Directive. The Swedish Transport Agency's oversight activities in 2012 resulted in 45 injunctions and 4 bans. Railway undertakings' and infrastructure managers' safety management systems essentially work well. The most common deficiencies uncovered by safety oversight activities concerning infrastructure managers are that measures are still not taken in good time following a track system inspection.

The Swedish Transport Agency has addressed two recommendations from the Swedish Accident Investigation Authority during 2012.

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[9] Accidents in which at least one trackbound vehicle in motion was involved and in which at least one person was killed or seriously injured, or in which damage to stock, tracks, or other installations resulted in costs of at least EUR 150 000. Accidents that cause environmental damage or which significantly delay traffic are also regarded as accidents that must be reported. Suicides are excluded. Events in which the police have not taken a position as to whether the event was an accident or a suicide are included as accidents. See definitions, Annex F.

One area of development in which the Transport Agency is working concerns a project to gain access to hospital data on persons injured in railway and boating accidents. The Swedish Transport Agency already collaborates with the healthcare system on road traffic accidents. Another area under development is an IT system that will facilitate the permit application process. The Swedish Transport Agency has also created intermodal process teams for oversight activities and permit application processing and has a centre of competence for HF/HTO[10]related tasks.

More detailed descriptions of developments regarding accidents, indicators, legislation, issuing permits, and oversight are contained in later chapters.

C ORGANISATION

C.1 The Swedish Transport Agency's organisation

The Swedish Transport Agency has overall responsibility for standardisation, oversight, issuing permits, and record-keeping for the four types of transport: rail, aviation, maritime, and road. The Agency also has a normative role and conducts oversight of the railway system. In this respect, Sweden meets the requirements of the Safety Directive which states that each Member State shall have a safety authority which – independently of infrastructure managers and railway undertakings – is responsible for, inter alia, granting safety certificates and safety authorisations, approval decisions for placing technical subsystems and components into service, and ensuring registration of rolling stock.

The Transport Agency is also a regulatory body under Article 30 of Directive 2001/14/EC[11] but this report concerns the duties of the Agency under the Safety Directive.

The Swedish Transport Agency's mission is specified in the Ordinance[12] with instructions for the Swedish Transport Agency. The government's annual appropriation directions state the terms that are to apply to Swedish Transport Agency operations during the following financial year.

The Swedish Transport Agency is a board authority, which means that it is headed by a board responsible for efficient execution of operations, with good internal governance, and supervised by the government. The Director-General is on the board and is responsible for operating activities.

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[10] Human Factors/Humans, Technology, and Organisation

[11] The Swedish Transport Agency has the task of monitoring whether competition on the railway services market functions effectively and for reporting disparities to the Swedish Competition Authority. As part of its oversight, the Swedish Transport Agency shall, inter alia, monitor whether capacity allocation of rail infrastructure and certain rail-bound services takes place in a competition-neutral and non-discriminatory manner and whether fees for use of the rail infrastructure are competition-neutral and non-discriminatory. The Swedish Transport Agency must consult with the Swedish Competition Authority on competition matters. In addition, the Agency is responsible for settling disputes between railway undertakings and infrastructure managers where the parties disagree on the legality of a decision by the infrastructure manager. The Swedish Transport Agency is also tasked with monitoring compliance of railway undertakings and infrastructure managers with the specific requirements on the financial accounting of such operators.

[12] Ordinance (2008:1300) with instructions for the Swedish Transport Agency.

The Swedish Transport Agency has 15 locations throughout the country and has approximately 1 750 employees. The majority of operations are based in Borlänge, Norrköping, and Örebro. The head office is in Norrköping. The Agency includes the following core units: Office of the Director General, Legal Division of the Director General, and Registry of the Director General. The Agency also includes the following departments: Finance and Administration, IT Strategy, Communications, Human Resources, Driving License Department, Maritime and Aviation, Tax and Fee Department, Road and Rail, and the Transport Registry.

The Road and Rail Department was reorganised on 15 August 2013. The reorganisation is a restructuring of existing operations by the replacement of two old units with the two new units of data collection and system support as well as the replacement of the Office of the Department Director with market, quality, and strategy. The department has eight units: authorisations, vehicles and technology, legal, market, quality and strategy, data collection and system support, support, transport and infrastructure, and carriers. The railway issues that each unit is responsible for are described briefly below. In addition, each unit is responsible for road traffic issues. The transport and infrastructure unit and the carriers unit issue permits and conduct oversight. In order to obtain a permit, the safety management systems of both the infrastructure manager and the railway undertaking are examined. The vehicles and technology unit issues approvals for technical subsystems. In order to obtain subsystem approval before being put into service, the applicant must demonstrate that the subsystem is safe and interoperable. The legal unit supports, inter alia, the development of regulations with their legal skills. Responsibilities of the data collection and system support unit include management of the Swedish Accident Investigation Authority's recommendations and accident statistics and the preparation of this report. The market, quality, and strategy unit has, inter alia, the long-term task monitoring railway sector market development.

The Swedish Transport Agency's Road and Rail Department has approximately 325 employees consisting of 160 men and 165 women, approximately 60 of which work primarily on railway issues. However, this figure is uncertain because the Transport Agency no longer follows-up resources separately per mode of transport. The corresponding distribution throughout the whole of the Transport Agency is 850 men and 900 women. Annex B contains the Transport Agency's organisational chart.

C.2 The Swedish Transport Agency's Road and Rail Department's relationships

This section describes the relationships of the Swedish Transport Agency's Road and Rail Department with other authorities. The focus is on relationships within the railway sector, and though the Swedish Transport Agency is also responsible for road, maritime, and aviation transport, a number of other relationships are not covered in this report.

The Swedish Transport Agency is not the only authority responsible for regulation of the railway system, there are several other national authorities that are responsible for their respective areas, such as the National Electrical Safety Board, the Swedish National Board of Housing, Building and Planning, and the Swedish Civil Contingencies Agency (the Swedish acronym is MSB) as well as the Swedish Transport Administration, which is both a national authority for and an infrastructure manager of national railway installations. These authorities interact and exercise their official authority over railway system stakeholders within their respective areas of responsibility. Figure 1 provides an example of some of the national authorities that affect the Swedish Transport Agency and other stakeholders in the railway system through their normative tasks on certain safety-related issues, for example.

Swedac [Swedish Board for Accreditation and Conformity Assessment] is a government authority that accredits notified bodies whose task is to certify that technical subsystems conform to the applicable technical specifications for interoperability (TSIs). The Swedish Civil Contingencies Agency (MSB) has an overarching and coordinating responsibility in their efforts to ensure a safer society. The Swedish Transport Agency cooperates with MSB on, inter alia, oversight of dangerous goods transport

The Transport Agency reports accidents and incidents to the Swedish Accident Investigation Authority, which is an independent investigative body under the Safety Directive. The Swedish Accident Investigation Authority submits its recommendations to the Swedish Transport Agency which, acting as a safety authority, is to follow-up and take appropriate action in response to those recommendations. The Agency shall report back to the Swedish Accident Investigation Authority on how the latter's recommendations have been addressed and the measures taken in response to them (see Section D.3).

The Transport Agency also cooperates with Transport Analysis. The Agency submits statistical data to Transport Analysis, which in turn submits accident statistics to Eurostat. Transport Analysis publishes national transport statistics, such as information on transport efforts, to which the Swedish Transport Administration delivers data.

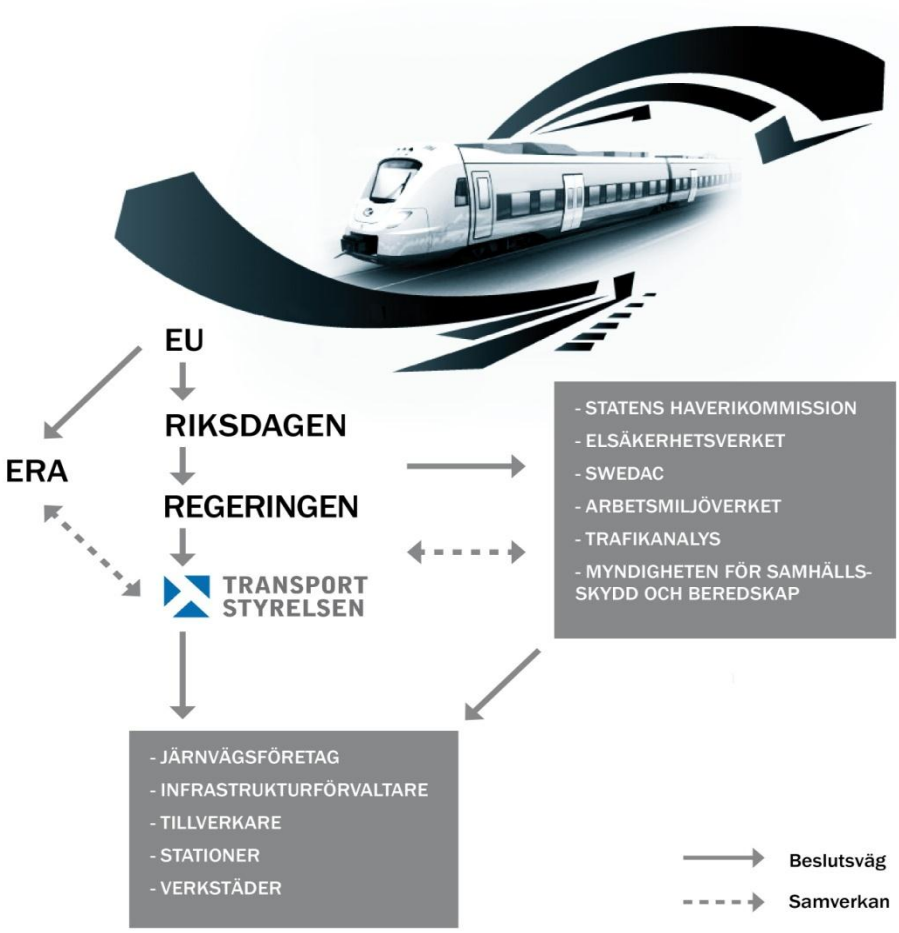


Figure 1: The Swedish Transport Agency's (Road and) Rail Department's national relationships.

ERA – EU RIKSDAGEN REGERINGEN TRANSPORT STYRELSEN	ERA – EU PARLIAMENT GOVERNMENT THE SWEDISH TRANSPORT AGENCY	
- Järnvägsföretag	- Railway undertakings	
- Infrastrukturförvaltare	- Infrastructure managers	
- Tillverkare	- Manufacturer	
- Stationer	- Stations	
- Verkstäder	- Workshops	
- Statens haverikommission	- Swedish Accident Investigation Authority	
- Elsäkerhetsverket	- National Electrical Safety Board	
- Swedac	- Swedish Board for Accreditation and Conformity Assessment	
- Arbetsmiliöverket	- Swedish Work Environment Authority	
- Trafikanalys	- Transport Analysis	
- Myndigheten för Samhällsskydo och beredskap	- Swedish Civil Contingencies Agency (MSB)	
- Beslutsväg	- Decision Path	
- Samverkan	- Cooperation	

Solid arrows in Figure 1 represent decision paths. These are therefore one-way, whereas the two-way broken lines represent cooperation.

Railway undertakings and infrastructure managers are not the only players in the rail sector, there are also manufacturers of technical systems such as vehicles, signal installations, and signal boxes. Manufacturers are not included in the Swedish Transport Agency's area of responsibility. However, the Agency must approve subsystems before they are put into service. Vehicles need maintenance and repairs, which are done by workshops that may be authorised as both railway undertakings and infrastructure managers. Railway undertakings are responsible for adequate maintenance of the vehicles they use. An amending Directive[13] has established rules on the appointment of an entity in charge of maintenance (ECM[14]) for vehicles. The rules were implemented into Swedish law in 2012; see section E.

D TRENDS IN RAILWAY SAFETY

Efforts to maintain a high and uniform level of safety in the rail system involves all stakeholders in the rail system. This section presents a summary of the Swedish Transport Agency's measures to maintain/increase safety in the rail system and the operators' safety objectives and safety improvements.

D.1 Initiatives to maintain/improve safety

D.1.1 The Swedish Transport Agency's safety improvements

Oversight of Swedish railway sector stakeholders is aimed at verifying that the operators have functioning safety management systems and are able to take appropriate action if and when a deviation occurs. Hence, as part of their oversight, the Swedish Transport Agency verifies that the operators' safety management systems are in compliance with the current regulatory framework and that they have the organisation, routines, delegation of responsibility, finances, etc., to ensure that they can continue to meet the requirements of their permits.

The actions/activities for which the Swedish Transport Agency has a mandate to perform include bans with or without fine, injunctions with or without fine, and ultimately the suspension of permits. It is the operators who take the concrete steps to reduce the number of undesired events (accidents, incidents, and other deviations). The Swedish Transport Agency monitors whether the operators take appropriate action.

In 2012, the Swedish Transport Agency came to an agreement on a common oversight process that has been broken down into inspections (including audits) and reviews (including audit 1). The initial and primarily area of focus is the lessons learned process of performed oversight; how we deal with the inspection results. Proposed goals and benchmarks to follow-up on the oversight process have been developed and are now awaiting a decision.

[13] Directive 2008/110/EC of the European Parliament and of the Council of 16 December 2008 amending Directive 2004/49/EC on safety on the Community's railways (Railway Safety Directive).

[14] Entity in Charge of Maintenance (ECM).

In 2012, the Swedish Transport Agency followed-up on, inter alia, required actions from 2011 for the railway sector's work in the track environment. As a result of previous accidents and the Transport Agency's efforts, the Swedish Transport Administration is now reviewing the possibility of changing the competency requirements for subcontractors.

Reference should also be made to section D.3 for steps taken by the Swedish Transport Agency and by operators as a result of recommendations from the Swedish Accident Investigation Authority.

Accident/incident or other deviation that triggered the activity			Safety improvements made
Date	**Location**	**Description of event**	
20/09/2012	Sundsvall	Derailment resulting in fatality, Green Cargo vehicle type Z70. In connection with the Sundsvall accident investigation, Green Cargo decided to remove all Z70 locomotives from service with immediate effect due to suspected crack formations in the wheel axles of this vehicle type.	In light of this, the Swedish Transport Agency audited all undertakings that are holders of related vehicle types. The Transport Agency also informed these parties of the problem and the actions taken by Green Cargo, i.e. to temporarily suspend transport with Z70 locomotives and begin a technical examination of each and every wheel axles.

Table 2: Examples of safety improvements made by the Swedish Transport Agency which were triggered by an accident or incident.

Safety improvement	Description of trigger	Description of the problem area
Inspection of the Swedish Transport Administration regarding the implementation and enforcement of regulatory framework relating to work in the track environment, such as emergency planning and reduced speed past work sites.	Inspection discovered that information and new regulations on this were not being followed within the Transport Administration.	Contractors are exposed to considerable risk during work in the track environment.
Audits of current practices for the management of drawings at a number of the larger operators.	There are indications from the Technical unit that many changes are made to the drawings and our own audits have also found that these drawings may not always be properly taken care of.	Drawings that are out at the installations are inconsistent with those in the archives, which can lead to faulty connections in signal systems, which in turn can lead to accidents.

Table 3: Examples of Swedish Transport Agency safety improvements with triggers other than one specific event.

D.1.2 Operators' safety improvements

The majority, approximately 90%, of the operators have not been involved in any events that led to death or serious injury. In addition to the CSIs, the operators' safety reports include information on safety targets and measures taken to maintain/increase safety. This section reflects an overall description of the operators' safety reports.

182 safety reports have been received. Those who have not submitted a safety report are permit-holders with small infrastructure installations.

D.1.2.1 Safety targets

Operators have reported their safety targets in 120 of the safety reports, i.e. approximately 66%, which is nearly the same as in 2011 (67%). There is vast diversity in the way the targets are formulated. A number of the undertakings, 54 of 120 (approximately 45%), have several safety targets that generally include long-term comprehensive targets combined with detailed and specific targets, such as a maximum number of SPADs per year. Municipalities often have general targets for their operations that are not broken down by the infrastructure they manage and the majority of them do not report any safety targets at all.

The comprehensive targets provided are often expressed in terms of no deaths or serious injuries as a result of the organisation's operations, such as 'Travelling by train should be safe and secure.' The responses in the safety reports also contain examples of quantitative targets such as a reduction in the number of accidents to a certain level. There are also specific targets, such as finding ways to prevent unauthorised track access and measures for the safety of children and young people.

In conclusion, a large percentage of the safety reports (approximately 44%) lack safety targets. The most common justification is that rail operations are such a minor part of the company that they cannot specify safety targets that are solely railway-related.

D.1.1.2 Action plans with safety improvements

Of the safety reports received, 42% of operators indicated that they have made safety improvements in response to an event or incident or as a preventive measure, which is approximately the same as the previous year (41%). Most of the operators have reported more than one safety improvement. The event need not have had serious consequences. Less serious events – such as incidents and events with consequences less severe than other possible outcomes – have also led to the implementation of safety improvements. Several of the operators have implemented safety improvements as preventive measures, such as improved deviation reporting. There is an anticipated increase in the 2012 reporting of responses that focus on internal follow-ups on safety efforts, such as implementation of new safety management systems, more in-depth checks of documents, and follow-ups on deviation reporting.

A word that is frequently used in the survey section on safety measures is *risk.* Actions are taken to reduce risks in the transport system and risk management systems are introduced.

Table 4 shows some examples of safety improvements made by operators, what initiated the improvements, and the actual or expected result. In addition to the examples in Table 4, the operators report that an annual safety inspection – including measures to reduce inspection notes – and skills enhancement of personnel through training and workplace meetings are activities that lay the foundation for a high level of safety in railway operations.

Safety improvement	Reason	Result
Review and update the undertaking's risk management practices including risk analysis templates. Is to be completed in conjunction with completion of the new document management system. Estimated complete by 31/05/2013.	Association with Regulation (EC) 352/2009 has worked but the system needs to be improved and implemented throughout the entire organisation.	The result is an expected increase in the number of risk assessments and analyses as well as contribute to a greater understanding of the link to deviation management.
Information to 'Lokförarna' [train driver union]. The in-service training focuses on how to drive in order to avoid cat. A SPADs.	Most SPADs are cat. A	Cat. A SPADs decreased during the autumn of 2012. We will still have the same objective for our in-service training in 2013. The objective will be assessed taking into account that our traffic volume has increased in 2012
An action plan for alarm protocol and improved deviation management have been implemented	Shortcomings have been discovered in the issuing of alarms	Deviations have decreased

Table 4: Examples of safety improvements in 2012 reported by operators.

The safety report of the state infrastructure manager, the Swedish Transport Administration, described the overall safety target as halving the number of fatalities in the railway system from 110 persons in 2010 to 55 persons by 2020[15]. The Transport Administration's 2012 safety report states that the number of deaths in the railway system is within the calculated rate of decline, but there is a risk that the objective will not be met if the trend in accidents does not subside.

Table 5 shows a selection of measures on which the Swedish Transport Administration has focused in 2012 and which, in some cases, are implemented in 2013.

Safety improvement	Reason	Result
Inventory of the most accident-prone sections and measures to reduce accessibility.	to reduce accidents caused by unauthorised track access and suicide	No discernible effect yet
Cooperation with emergency services that intervene when people are in the vicinity of the track.	There are still many accidents	Interventions take place continuously and persons have been stopped in many cases.
Participation in the EU project RESTRAIL16	to reduce accidents caused by unauthorised track access and suicide	No discernible reduction yet.
Revisions to the Swedish Transport	The accident in Kimstad on	No discernible reduction yet.

[15] Transport Administration data on the number of fatalities differs from the official statistics due to, inter alia, other bases on which to calculate, such as the inclusion of suicides.

[16] RESTRAIL: Reduction of Suicides and Trespasses on Railway property

Safety improvement	Reason	Result
Administration's rules on health and safety and work in the track.	12/09/2012	
Revision of the rules on heavy equipment on the rails.	The accident in Kimstad on 12/09/2012	
Introduction of new obstacle detector model based on radar technology.	Level crossing accidents continue to occur	The first installation was made in 2013.
Information to level crossing users who are between the barriers in a full barrier crossing that they can drive through the barriers.	Vehicles get stuck between the barriers and a serious level crossing accident occurs.	Plan to equip 1,200 full barrier crossings with signs in 2013.
New safety organisation around rail yards, including new rules for, inter alia, yard protection	Shortcomings pointed out by the Swedish National Audit Office on the risks that arise when persons trespass in the track area as well as shortcomings in dangerous goods handling.	The Transport Administration has conducted emergency exercises in marshalling yards (shunting/switchyards) together with emergency services and other stakeholders. Some locations identified as accident-prone have begun to be fenced off.

Table 5: A selection of the Swedish Transport Administration's safety improvements in 2012.

D.2 Common safety indicators

This section presents observations on the common safety indicators (CSIs). CSIs are presented as an average value based on the values of five years. Because 2013 is the seventh year that information has been collected, the indicators for 2012 are presented as an average based on the values for 2012, 2011, 2010, 2009, and 2008. Some indicators have been added since the system started in 2006, in which cases the years that have available values are reported. The CSIs consist of data on accidents and deviations set against the number of train kilometres or, in certain cases, passenger kilometres. Approximately 140,433 million train kilometres were travelled in 2012 on the state railway network. The Swedish Transport Administration has provided data on track work and track kilometres for this year's report. This may entail train kilometre and track kilometre deviations from other sources. Sources used for the collected information are presented in Chapter J Sources and definitions used.

As certain infrastructure managers and railway undertakings are exempt from submitting safety reports (see section B.2.1), the indicators do not provide a measure for all railways in Sweden. For example, operations on local and regional networks that are independent and intended solely for passenger or museum traffic, such as Saltsjöbanan and Roslagsbanan, are excluded from this report. The figures for the number of deaths and serious injuries are therefore different from the figures provided annually by Sweden to Eurostat and from the figures that are published annually in Transport Analysis's official statistics publication, 'Bantrafikskador[17]' [Rail Traffic Injuries].

[17] See Chapter J for a more detailed account of the differences in accident statistics.

D.2.1 Accidents

There were 47 (54, 69, 46, 46) accidents to be reported in 2012 in accordance with Annex 1 of the Safety Directive[18]. Figures in parentheses refer to 2011, 2010, 2009, and 2008 respectively. The figures include accidents involving railway vehicles in motion resulting in: the death or serious injury of at least one person, costs of more than SEK 1.4 million, or in the complete blockage of traffic for at least six hours.

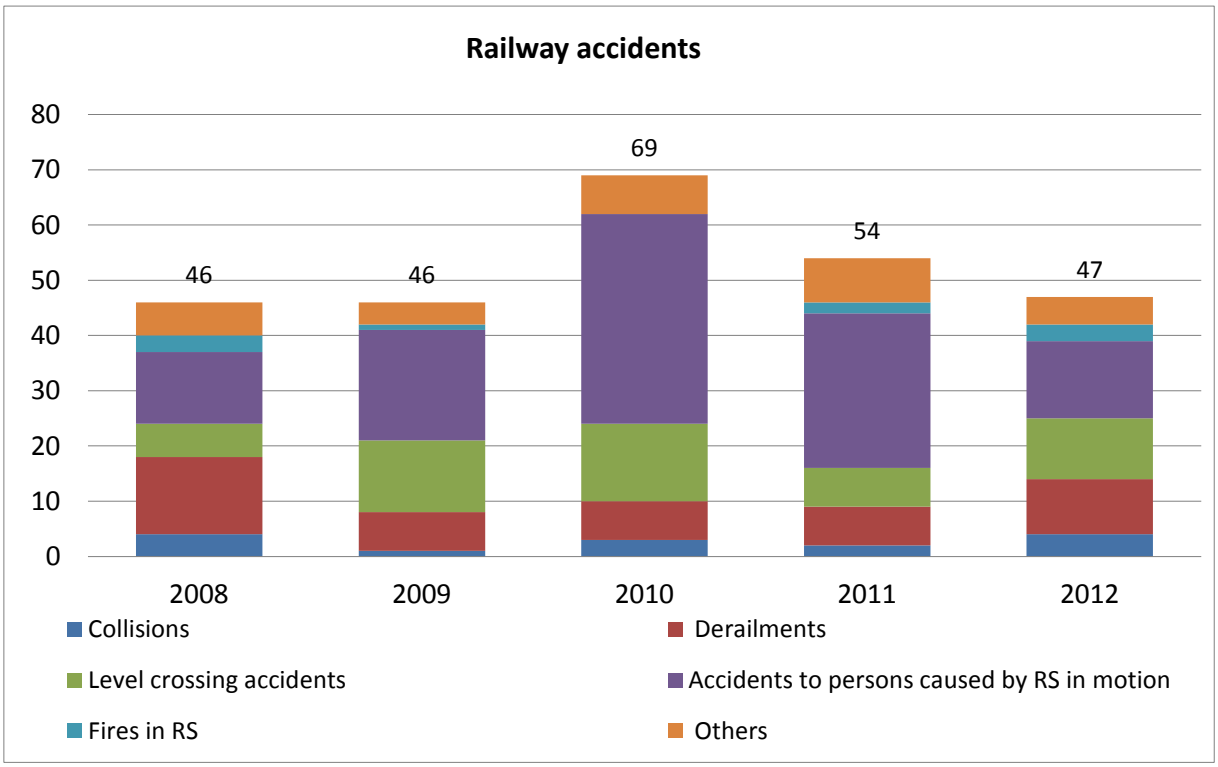


Figure 2: Diagram of number of railway accidents per accident category.

The accidents in Figure 2 are divided into different categories: train collisions, train derailments, level crossing accidents, accidents to persons caused by rolling stock in motion, fires in rolling stock, and other accidents such as derailment during shunting movement.

The accident category for which the most accidents were reported in 2012 is accidents to persons caused by rolling stock in motion 14 (28, 38, 20, 13). As in previous years, the majority of the consequences involving people have occurred as a result of unauthorised track access. Suicides have been excluded from these figures, but it is rarely possible to say with certainty whether or not a death was a case of suicide. Cases on which the police – the competent authority – have not taken a position as to whether an event was an accident or a suicide are included as accidents.

Level crossing accidents increased in 2012 (11) compared to 2011 (7), which can be compared with the years 2010-2008 (14, 13, 6).

[18] Accidents in which at least one trackbound vehicle in motion was involved and in which at least one person was killed or seriously injured, or in which damage to stock, tracks, or other installations resulted in costs of at least one hundred and fifty thousand euro. Accidents that cause environmental damage or which significantly delay traffic are also regarded as accidents that must be reported. Suicides are excluded. Events in which the police have not taken a position as to whether the event was an accident or a suicide are included as accidents. See definitions in Annex F.

Four train collisions (2, 3, 1, 4) and ten derailments (7, 7, 7) reported for 2012 were reported because of damage costs and/or significant traffic disruptions. However, they did not lead to any serious injuries or fatalities. Three fires (2, 0, 1, 3) have been reported for 2012. The fires were reported because they involved extensive stock costs or delays of at least 6 hours, i.e. no persons were seriously injured or killed in the fires.

There were five (8, 7, 4, 6) 'other accidents'. In two cases, persons were seriously injured or died in an 'other accident'. In three cases, the accidents were reported because they led to significant consequences in terms of damage costs and/or major traffic disruptions. In addition to the accidents reported here, there were also 82 (62, 68, 67, 71) suicide attempts which resulted in death or serious injury in 2012.

D.2.2 Killed and seriously injured

This group of indicators includes the number of killed and seriously injured persons. In 2012, there were 15 (24, 42, 19, 13) fatalities and 18 (15, 25, 15, 6) serious injuries. The indicator for the number of fatalities per billion train-km (CST 6) has decreased compared with 2010 and 2011.

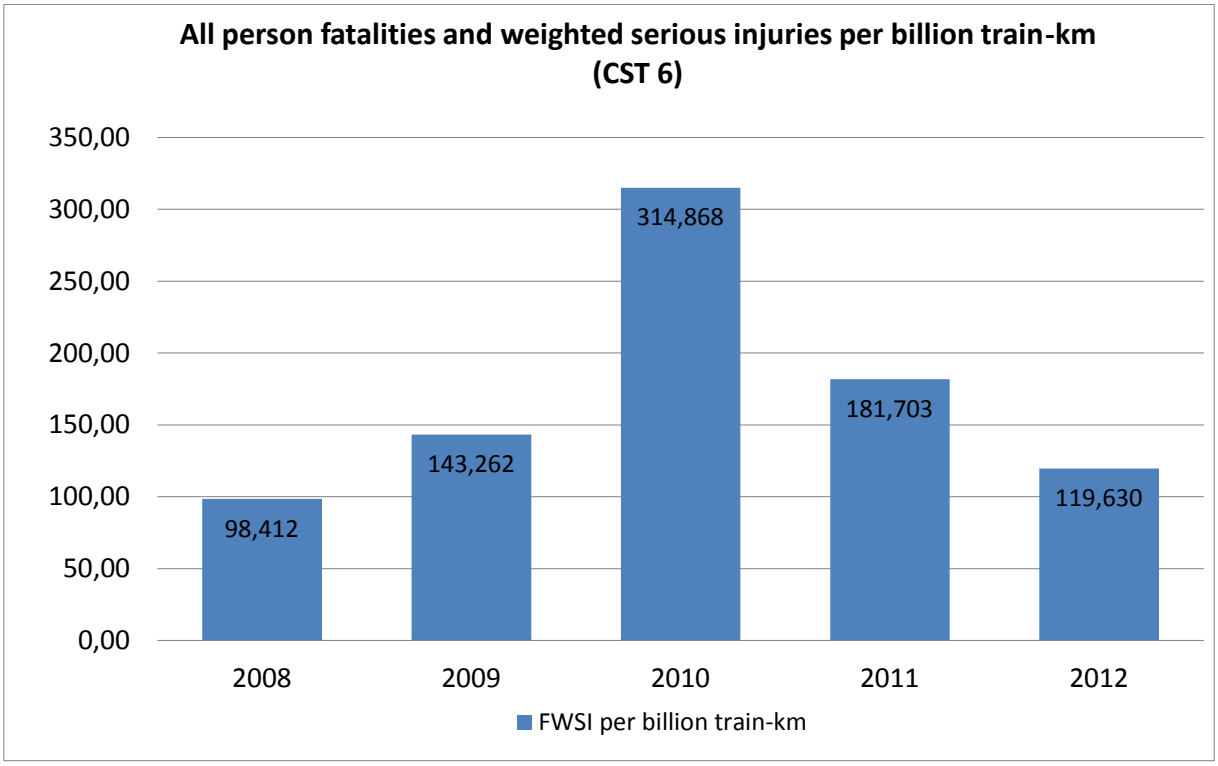


Figure 3: Indicator for number of fatalities and serious injuries per billion train kilometres (CST 6).

The largest accident group with fatalities was accidents to persons in which 7 (17, 34, 13, 9, 14) persons died as a result of unauthorised track access. Two other persons died in accidents to persons. The remaining deceased persons were level crossing users 7 (7, 7, 6, 4) and an employee who died in a separate accident. There were fewer deaths due to railway accidents than in 2011.

One passenger was seriously injured in a derailment and no employees were injured. The majority of those who were seriously injured were level crossing users (10). Six (8, 5, 2, 1, 2) persons were seriously injured when they trespassed on the tracks. The number of seriously injured persons who trespassed on the tracks decreased in 2012 from 2011. There is some uncertainty regarding the number of serious injuries as it is difficult to obtain reliable data on the duration of the persons' hospitalisations. Data on the degree of personal injury is retrieved from the police or the companies concerned. The Swedish Transport Agency is working to develop procedures to gain access to data on hospitalisations and diagnoses from the healthcare system. Hospital data has been available in some cases.

D.2.3 Technical safety of infrastructure

This group of indicators includes, inter alia, the percentage of tracks fitted with ATP/ATC (Automatic Train Protection/Control) or ERTMS and the number of level crossings with various types of level crossing safety installations. The largest infrastructure manager in Sweden is the Swedish Transport Administration. Their 2012 safety report states that they have 9,804 km with ATC out of a total 11,969 km of track. This means that the percentage of tracks with Automatic Train Control (ATC) in use is approximately 82% (81%). The Swedish Transport Administration states in this year's safety report that the preliminary number of train kilometres with ATC in 2012 was approximately 145.4 million. The percentage of train-km run on tracks with ATC in use is approximately 96%. The majority of traffic is therefore on tracks which are extremely safe in technical terms.

The state-owned infrastructure manager, the Swedish Transport Administration, has worked actively for several years on improving the safety of level crossings. One of the measures taken was to replace level crossings without active safety installations with level crossings that do have active safety installations or, alternatively, to remove the level crossings.

Type of level crossing	**Quantity**	
1. Number of level crossings with automatic acoustic and/or visual systems that warn level-crossing users	836	(843)
2. Number of level crossings with automatic barrier systems (whole or half barriers, including gates or similar) that warn/protect level-crossing users	11	(9)
3. Number of level crossings with automatic systems comprising both 1 and 2	2215	(2196)
4. Number of level crossings with both 1 and 2 that are also equipped with obstacle detectors	77	(78)
5. Number of level crossings with manually controlled acoustic and/or visual systems that warn level-crossing users	87	(87)
6. Number of level crossings with manually controlled barrier systems, including gates or similar that warn/protect level-crossing users	16	(2)
7. Number of level crossings with manually controlled systems comprising both 5 and 6	40	(29)
8. Number of passive level crossings	5334	(5486)
Total:	**8,616**	**(8,730)**

Table 6: Number of level crossings by type of safety installation and the total of all received safety reports, i.e. incl. the Swedish Transport Administration. The figures in parentheses refer to 2011.

Type of level crossing	Quantity	
1. Number of level crossings with automatic acoustic and/or visual systems that warn level-crossing users	690	(710)
2. Number of level crossings with automatic barrier systems (whole or half barriers, including gates or similar) that warn/protect level-crossing users	0	(0)
3. Number of level crossings with automatic systems comprising both 1 and 2	2116	(2112)
4. Number of level crossings with both 1 and 2 that are also equipped with obstacle detectors	77	(78)
5. Number of level crossings with manually controlled acoustic and/or visual systems that warn level-crossing users	17	(17)
6. Number of level crossings with manually controlled barrier systems, including gates or similar that warn/protect level-crossing users	0	(0)
7. Number of level crossings with manually controlled systems comprising both 5 and 6	0	(0)
8. Number of passive level crossings	3260	(3423)
Total:	**6 160**	**(-6 340)**

Table 7: Level crossings on the state-owned infrastructure by type of safety installation. The figures in parentheses refer to 2011.

Tables 6 and 7 differ in that Table 6 includes all level crossing safety installations that operators reported in their safety reports, while Table 7 only covers level crossing safety installations on the state-owned infrastructure. The data differ only in that the smaller infrastructure managers in Table 6 have both manual and automatic installations with barriers or gates, which is not the case with the state infrastructure manager.

The state-owned infrastructure has 6,160 (6,340) level crossings. The 2011 data in Table 7 has been updated to reflect the data in the Swedish Transport Administration's 2012 safety report.

In some isolated cases, infrastructure managers stated that they have level crossings but did not specify what type of protection they have, thus the total number of level crossings in Table 6 may be slightly higher than 8,616 (8,730). Overall, it can be confirmed that the number of level crossings is decreasing.

D.2.4 Deviations

This indicator combines all reported deviations relating to broken rails, track geometry faults (track buckles), broken axles and wheels, unauthorised SPADs (signals passed at danger), and wrong-side signalling failures. Reported deviations for 2012 totalled 956 (429, 477, 723, 594), which is a significant increase from 2011.

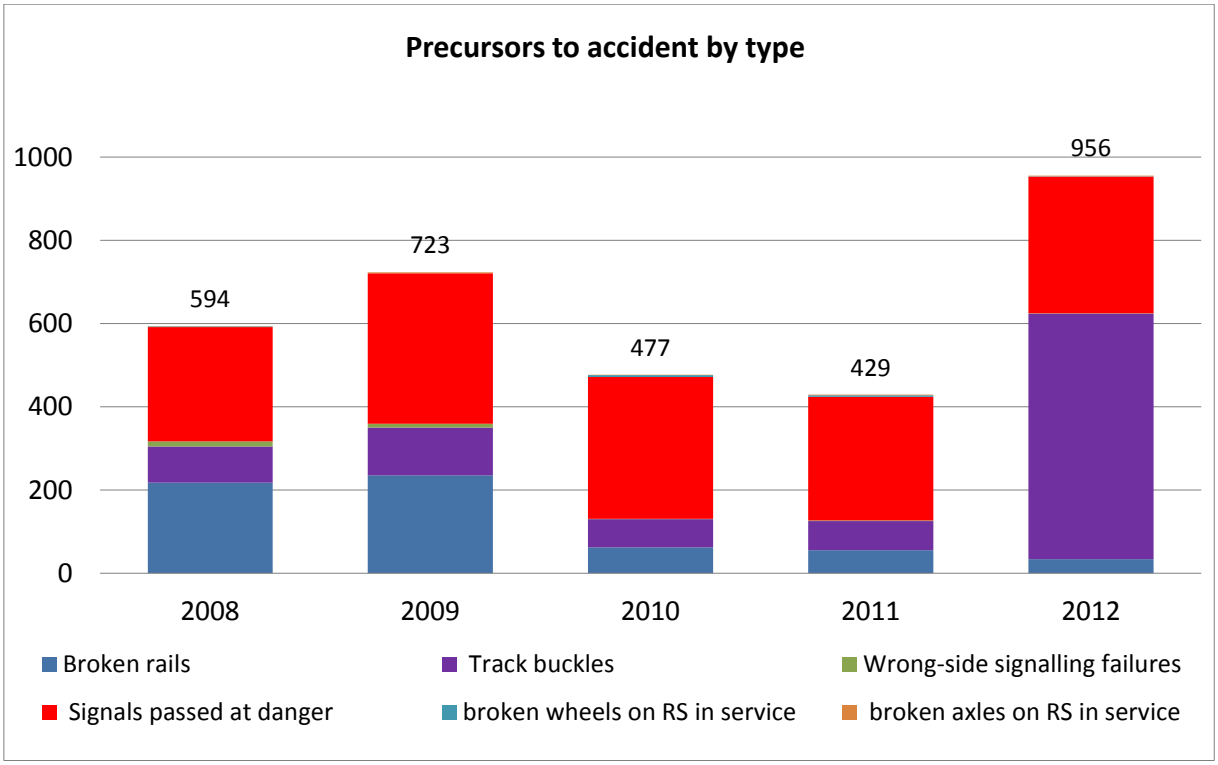


Figure 8: Number of deviations per year.

Track geometry faults (track buckles) show a sharp increase in 2012 with 590 (70, 68, 115, 87) cases, which is due to the fact that the Swedish Transport Administration has changed the follow-up procedure. The number of deviations is based on reported values in received safety reports.

Broken rails: 34 (55, 62, 235, 218)

Track geometry faults: 590 (70, 68, 115, 87)

Wong-side signalling failures: 1 (2, 1, 9, 12)

Signal Passed at Danger: 328 (297, 341, 362, 275)

Broken wheels: 1 (4, 4, 0, 1)

Broken axles: 2 (1, 1, 2, 1)

D.2.5 Costs and working hours lost as a consequence of accidents

This indicator is an attempt to measure the total costs incurred in the railway system as a consequence of accidents. The costs are expressed in euro[19].

[19] For calculating costs in euro, an exchange rate of EUR 1 = SEK 8.7053 (Swedish Central Bank mean exchange rate for 2012) has been used for 2012 where reporting railway undertakings and infrastructure managers quote their costs in SEK.

ERA has developed new methods for reporting costs. The new methods are based on societal costs instead of the costs to railway undertakings and infrastructure managers. However, two types of costs are still based on the costs incurred by railway undertakings and infrastructure managers.

1. Experience has shown that railway undertakings and infrastructure managers bear the environmental costs of restoring a damaged area to the condition it was in before a railway accident.

   Operators report that they have had EUR 28,718 in environmental costs in 2012. There were no reported environmental costs in either 2011 or 2010. The main reasons for the low or lacking cost reporting are that the operators either had no such costs or that they are not aware of any.

2. The cost of providing new rolling stock or infrastructure with the same function and technical parameters as those that cannot be repaired and the cost to restore the rolling stock or infrastructure to the condition they were in before the accident.

   Undertakings' costs reported for 2012 are approximately EUR 22,248 (EUR 19 million in 2011, EUR 8 million in 2010, and EUR 16 million in 2009). Undertakings have indicated that there is considerable uncertainty in these data.

The following costs are to be based on societal costs:

- Costs of fatalities in railway accidents in 2012 are estimated at approximately EUR 38 million (approximately EUR 59 million in 2011, EUR 98 million in 2010, and EUR 46 million in 2009) and the costs of serious injuries are estimated at approximately EUR 8.5 million (approximately EUR 7 million in 2011, EUR 11 million in 2010, and EUR 7 million in 2009).

- Costs of delays due to accidents: approximately EUR 22.7 million in 2012 (approximately EUR 24 million in 2011 and EUR 72,000 in 2010).

The information on costs for fatalities and serious injuries is based on calculated values for deaths and serious injuries from a socio-economic perspective, produced by SIKA (the Swedish Institute for Transport and Communications Analysis) in PM 2008:3 Socio-economic principles and calculation values for the transport sector: ASEK 4. The costs are then multiplied by the number of fatalities and serious injuries.

The calculation of costs incurred from delays due to accidents is reported this year for the third time. The calculated value is obtained from the ERA's CSI data form. The data on the number of delay minutes also contain delay minutes resulting from incidents and, in addition to the state-owned infrastructure, also includes a few reported delays of freight traffic on sidings.

2012 saw 193,221 delay minutes for passenger trains and 224,460 delay minutes for freight trains, of which the state infrastructure manager reported 222,735 delay minutes for freight trains. The delay minutes had increased from 2011. For 2011, there were 120,742 delay minutes reported for passenger trains and 151,430 for freight trains (these figures were reported by the state infrastructure manager alone).

D.2.6 Safety management

Operators are to report system audits that are planned, 230 (202, 214, 221, 177), and performed, 204 (179, 187, 164, 156), which means that approximately 89% (89%, 87%, 74%, 88%) of the planned audits have been conducted.

72 (65, 56) of 182 (152, 126) operators indicated that they planned and performed at least one system audit in 2012. A few operators (7) indicated that they planned to, but did not, perform a system audit.

Subcontractors and various elements of the safety management system are examples of audit areas. Some examples of more general shortcomings that were found include non-compliance with regulatory requirements, deficiencies in skills management, and safety management deficiencies. Planned and completed maintenance inspections, which are reported as safety improvements, are also reported by the operators under this point in the survey.

D.3 Result of safety recommendations

The Swedish Transport Agency is the recipient of the rail traffic safety recommendations that are provided by the independent investigative authority; the Swedish Accident Investigation Authority (SHK). During 2012, the Swedish Transport Agency addressed two safety recommendations made in the following investigation reports:

Swedish Accident Investigation Authority (SHK) Report	Recommendation	Swedish Transport Agency response
RJ 2012:01 Near-collision at Nyhem interlocking area, 9 June 2011	RJ 2012:01 R1	23 November 2012
RJ 2012:03 Accident between train 505 and a backhoe loader on rails at Kimstad interlocking area, 12 September 2010	RJ 2012:03 R1	12 December 2012

Table 8: Summary of Swedish Accident Investigation Authority recommendations to which the Swedish Transport Agency replied during 2011.

The SHK safety recommendations are found below, in italics, which are then followed by the Swedish Transport Agency response to the investigation authority on the handling of said recommendation.

RJ 2012:01 Near-collision, 9 June 2011, at Nyhem interlocking area.
Response submitted on 23 November 2012.

Recommendation RJ 2012:01 R1

- *The Swedish Transport Agency is recommended to conduct an inspection of the Swedish Transport Administration to examine how the Administration's safety management system has ensured that safety-sensitive work is carried out correctly and by personnel who have the right skills (see sections 2.2.2 and 3.2.2) (RJ 2012:01 R2).*

Swedish Transport Agency response
Documents BVF 602 and BVF 626, which are referenced in Chapter 2.2.2 of the report, are the bases for the Swedish Transport Administration's safety authorisation. Any amendments made to

these documents which affect the safety authorisation are to be sent to the Swedish Transport Agency for review. The Swedish Transport Agency has an annual commission on the administration of the Swedish Transport Administration's safety authorisation, TSJ 2012-44, in which issues regarding document amendments are handled.

The Swedish Transport Agency has conducted inspections of the Swedish Transport Administration regarding how the Administration ensures that safety-sensitive work is carried out correctly (TSJ 2010-1150 and TSJ 2010-1860). In the inspections, the Swedish Transport Administration has stated that a number of steps have been taken. In addition, the Swedish Transport Agency ordered the Swedish Transport Administration to, inter alia, conduct unannounced workplace inspections of engaged contractors. However, it should be pointed out that the Swedish Transport Agency conducts inspections under the Railway Act (2004:519) and regulations pursuant thereto. Whether a particular official/employee performs safety-related tasks is subject to the criteria in BV-FS 2000:3 and BV-FS 2000:4. A prerequisite for issues regarding the authorisations of an official/employee to be the subject to an inspection is that they must meet the criteria of the aforementioned regulations.

The conclusion drawn from the above inspections was that shortcomings did not lie in the regulatory framework as such, but rather in compliance with these provisions during certain track work. The compliance shortcomings are primarily deemed to consist of the fact that the work was carried out without the proper form of protection and that safety and protection planning was not performed correctly. Through meetings and contacts between the Swedish Transport Agency and the Swedish Transport Administration it came to light that the latter, through its own investigations, had also reached the same conclusions and even taken action on them.

The issue is also discussed at the annual corporate meetings that the Swedish Transport Agency holds with the Swedish Transport Administration.

In addition to the above and based on a project from a joint Director General meeting in May 2011, pilot studies were carried out at both the Swedish Transport Administration and the Swedish Transport Agency regarding competency requirements for safety in operations and maintenance and new construction of roads and railways. Representatives from the Transport Administration's and Transport Agency's respective studies had coordination meetings throughout the entire process. One of the conclusions of the Swedish Transport Agency's final report is that shortcomings in safety awareness and the attitude toward the risks of the work appear to be more common causes of accidents than a direct lack of knowledge.

In addition to the SHK analysis and recommendations, the Swedish Transport Agency is concerned about the conditions that were allowed to prevail in the contract take-over. Time was too short to hire competent personnel and procure material. The personnel met unclear boundaries between different contracts, such as who should control check completed work. In 2013, the Swedish Transport Agency intends to conduct oversight of drafting agreements for contracts and of contract take-overs.

RJ 2012:03 Accident between train 505 and a backhoe loader on rails at Kimstad interlocking area, Östergötland County, 12 September 2010
Response submitted on 17 December 2012.

Recommendation RJ 2012:03 R1

- *The Swedish Transport Agency was recommended to review the Swedish Transport Administration's management of audits, deviations, and risks with a view to ensure a*

level of quality such that shortcomings in project management and planning are detected and addressed (see sections 2.2.3 and 3.2.2)

Swedish Transport Agency response

The Swedish Transport Administration's management processes for audits, deviations, and risks were reviewed in the authorisation process that was conducted prior to the granting of a safety authorisation to the Swedish Transport Administration as infrastructure manager upon its formation 1 April 2010. The processes were reviewed by studying the submitted documentation. The review did not find any deviations in the documentation/processes. However, the Swedish Transport Agency has since seen indications that there are shortcomings in compliance with the Swedish Transport Administration's governing documents regarding the above processes and has therefore decided to conduct an audit/inspection in 2013 of the Swedish Transport Administration's deviation management. The Transport Agency also considers this audit/inspection to meet SHK's recommendation.

The Swedish Transport Agency launched in December 2011 a 'brevtillsyn' [an inspection of all relevant paperwork] of the Transport Administration and requested, inter alia, access to the Administration's governing procedures for operations in order to detect trends in safety-related traffic events in general, as well as the Administration's governing procedures for the communication of measures decided upon and governing procedures for following-up that these decisions have been addressed and executed. The decision to end the oversight was made in April 2012 after documents submitted by the Swedish Transport Administration stated that they were reviewing and changing road safety deviation management. The change is scheduled for completion and approval by 1 March 2013 at the latest.

E IMPORTANT LEGISLATION AND REGULATORY FRAMEWORK CHANGES

Commission Decision 2011/291/EU of 26 April 2011 concerning a technical specification for interoperability relating to the rolling stock sub-system – 'Locomotives and passenger rolling stock' of the trans-European conventional rail system was transposed into Swedish law through *the Swedish Transport Agency regulations (TSFS 2011:106) on technical specification for interoperability of the subsystem 'Rolling stock – Locomotives and passenger rolling stock' in the conventional rail system.* The regulation entered into force on 1 February 2012.

Commission Decision of 4 April 2011 concerning the technical specifications of interoperability relating to the subsystem 'rolling stock – noise' of the trans-European conventional rail system was transposed into Swedish law through *the Swedish Transport Agency regulations (TSFS 2011:105) on technical specification for interoperability of the subsystem 'Rolling stock – noise' in the conventional rail system.* The regulation entered into force on 1 October 2012.

Commission Decision of 20 December 2007 concerning the technical specification of interoperability relating to safety in railway tunnels in the trans-European conventional and high-speed rail system as amended by Article 8 of Commission Decision 2011/291/EU was transposed into Swedish law through *the Swedish Transport Agency regulations (TSFS 2011:107) on technical specification for interoperability relating to safety in railway tunnels.* The regulation entered into force on 1 February 2012.

The Swedish Transport Agency's regulations on fees in the railway sector (TSFS 2011:79). These regulations contain provisions on fees for the Swedish Transport Agency's operations in the

railway sector. The regulation entered into force 1 January 2012, was amended May 31 through *regulations on amending Swedish Transport Agency regulations (TSFS 2011:79) on fees in the railway sector (TSFS 2012:32),* and was superseded 1 January 2013 by *the Swedish Transport Agency's regulations on fees in the railway sector (TSFS 2012:98).*

The Swedish Transport Agency's regulations on inspections, performance testing, and vehicle maintenance (TSFS 2012:33). These regulations are an adaptation of existing rules in Commission Regulation (EU) No 445/2011. The rules have been adapted so that operators who use railway vehicles with a certified entity in charge of maintenance are not subject to certain rules. The Swedish Railway Inspectorate's regulations (BV-FS 2000:1) on inspections, performance testing, and vehicle maintenance were superseded by TSFS 2012:33 on 31 May 2012.

The Swedish Transport Agency's regulations (TSFS 2012:14) on exceptions from the Swedish Rail Agency traffic regulations (JvSFS 2008:7) for test runs. This regulation amendment was prompted partly by the need to update the rules to better meet the railway industry's needs and partly by the fact that the provisions contained references that had become increasingly inaccurate over time.

The Swedish Transport Agency's regulations (TSFS 2012:66) on amending the Swedish Rail Agency traffic regulations (JvSFS 2008:7). This regulation amendment was prompted by the fact that the Swedish Rail Agency traffic regulations (JvSFS 2008:7) contained rules that were no longer relevant and thresholds that did not match those in contracts[20] for international rail traffic.

F DEVELOPMENT OF SAFETY CERTIFICATES AND SAFETY AUTHORISATION

The requirement for safety certificates and safety authorisation in accordance with Directive 2004/49/EC (Railway Safety Directive) has been implemented through amendments to the Swedish Railways Act, which entered into force on 1 July 2007. The requirements can now be found in Chapter 3, Article 3, and Chapter 3, Article 7, respectively of the Railway Act (2004:519).

During 2010 and 2011, the Swedish Transport Agency simplified the renewal procedures for safety certificates and safety authorisations in accordance with Article 10(5) and Article 11(2) of Directive 2004/49/EC.

F.1 National legislation

1.1. The starting date for issuing safety certificates in accordance with Article 10 of Directive 2004/49/EC was 1 July 2007.

1.2. The starting date for issuing safety authorisations in accordance with Article 11 of Directive 2004/49/EC was 1 July 2007.

[20] *General Contract of Use for Wagons* (GCU)

1.3 National safety rules are available electronically on the Swedish Transport Agency's website, in the rulebook on trackbound traffic that can be purchased on the Transport Agency's website, and in the Swedish Code of Statutes (SFS).

F.2 Numerical data

The Railway Safety Directive was implemented in Sweden on 1/7/2007. Annex E presents relevant numerical data.

F.3 Procedural aspects

F.3.1 Queries, Part A safety certificates

3.1.1. Reasons for updating/amending Part A safety certificates (e.g. change to type of service, extent of traffic, size of company).

3.1.2. Main reasons for the average processing time for Part A safety certificate applications exceeding the four months specified in Article 12(1) of the Safety Directive (restricted to the authorisations referred to in Annex E. Average processing time calculated from the date when all the required information was received by the authority).

3.1.3. Overview of the requests from other National Safety Authorities to verify/access information relating to a Part A safety certificate of a railway undertakings that has been authorised in the home country, but is applying for a Part B certificate in another Member State.

3.1.4. Summarise problems with the reciprocal acceptance of Part A safety certificate validity throughout the EC.

3.1.5. Does the NSA charge a fee for issuing a Part A safety certificate?

3.1.6. Summarise the problems encountered with the use of harmonised rules for Part A safety certificates.

3.1.7. Summarise the common problems/difficulties for the NSA in preparing a permit application for a Part A safety certificate.

3.1.8. Summarise the problems mentioned by railway undertakings when applying for a Part A safety certificate.

3.1.9. Is there a feedback or query procedure that allows railway undertakings to express their opinion on application procedures/practices or to file complaints?

Replies
3.1.1 Changed competence in management, increased traffic, changed size of company, expansion into dangerous goods transport.

3.1.2 There was no overrun.

3.1.3 - 3.1.4 Hector Rail revised its Part A and Part B safety certificates in Sweden, which was reported to Denmark where they are authorised for Part B safety certificates

3.1.5. Yes, the fees are differential depending on the railway undertaking category. The fee is between SEK 13,000 and 72,600.

3.1.6 -3.1.8 The problem has been getting railway undertakings to understand the difference in what is included in Part A and Part B. When undertakings apply for both Part A and Part B, the documents are often mixed, i.e. elements belonging in Part A or Part B are found in the same document. It would be clearer to have separate documents for Parts A and B. One challenge is to get all undertakings to understand the purpose of having a functioning safety management system; it is not just about having the right documents. Some requirements are seen as bureaucratic by small undertakings.

3.1.9 No specific structure for complaints or views on this has been introduced. There is regular communication – by letter and by telephone – between the Agency and the applicant during the application process to allow the applicant the opportunity to express opinions and ask questions. For larger railway undertakings, there are regular corporate meetings. Finally, there is always the possibility to lodge complaints about the Agency's decisions. The Transport Agency is developing an IT system that will facilitate the permit application process; estimated completion is March 2013.

F.3.2 Queries, Part B safety certificates

3.2.1. Reasons for updating/amending Part B safety authorisations (e.g. change to type of service, extent of traffic, type of vehicles, category of personnel, significant changes to operating procedures, etc.).

3.2.2. Main reasons for the average processing time for Part B safety certificate applications exceeding the four months specified in Article 12(1) of the Safety Directive (restricted to the authorisations referred to in Annex E. Average processing time calculated from the date when all the required information was received by the authority).

3.2.3. Does the NSA charge a fee for issuing a Part B safety certificate?
(Yes, No, Level of fee).

3.2.4. Summarise the problems encountered with the use of harmonised rules for Part B safety certificates.

3.2.5. Summarise the common problems/difficulties for the NSA in preparing a permit application for a Part B safety certificate.

3.2.6. Summarise the problems mentioned by railway undertakings when applying for a Part B safety certificate.

3.2.7. Is there a feedback or query procedure that allows railway undertakings to express their opinion on application procedures/practices or to file complaints?

Replies
3.2.1 See 3.1.1

3.2.2 There was no overrun.

3.2.3 Yes, the fees are differential depending on the railway undertaking category. The fee is between SEK 31,400 and 148,000.

3.2.4. Different interpretations of what the regulations mean in different EU States.

3.2.5 Incomplete applications from applicants, leading to extensive dialogue with the applicant before the application is ready for final assessment.

3.2.6 See 3.2.4

3.2.7 See comments in 3.1.9.

3.3 Queries, safety authorisations

3.3.1 Reasons for updating/amending safety authorisations.
(Reasons may refer to individual applications, e.g. new track systems, new signalling systems, significant changes to operating procedures).

3.3.2. Main reasons for the average processing time for safety authorisation applications exceeding the four months specified in Article 12(1) of the Safety Directive (restricted to the authorisations referred to in Annex E. Average processing time calculated from the date when all the required information was received by the authority).

3.3.3 Summarise the regular (recurring) problems/difficulties in application procedures for safety authorisations.

3.3.4. Summarise the problems mentioned by infrastructure managers when applying for a safety authorisation.

3.3.5. Is there a feedback or query procedure that allows infrastructure managers to express their opinion on application procedures/practices or to file complaints?

3.3.6. Does the NSA charge a fee for issuing safety authorisations?
(Yes, No, Level of fee)

Replies
3.3.1 Changed corporate identity number, change in competence within management team, or significantly altered organisation.

3.3.2 There was no overrun.

3.3.3 Updates to the traffic safety instructions due to the introduction of the Swedish Transport Agency's regulations on said instructions, inspection notes remedied in a timely manner, problems in verifying training for those that have their own inspectors and – primarily with the smaller infrastructure managers – insufficient railway knowledge (primarily) of traffic safety instructions.

3.3.4 Nothing in particular other than that the smaller infrastructure managers consider it too bureaucratic and that the requirements are too far-reaching.

3.3.5 All decisions can be appealed. For the larger infrastructure managers, there are frequent corporate meetings. We are also happy to hold meetings to explain the requirements during the application period.

3.3.6 Yes. The fee is differential depending on track length, and whether it is a main track or siding. The range is SEK 17,500 to 2,000,000.

G SAFETY OVERSIGHT

Rail sector oversight consists of safety oversight, which covers railways, trams, and metros. The oversight is aimed at the operators' safety management systems and how they function in operational service so that they themselves can detect any deficiencies.

The selection of that which is to be subject to oversight is risk-based. The oversight performed is intended to maintain and improve the current situation. The following two criteria serve as guidance in performing oversight activities:

- activities where an accident could have major consequences and the probability of such an accident occurring is not negligible.
- activities with a high probability of an accident occurring, the consequences of which would not be acceptable.

Furthermore, the ambition is that the planning of oversight activities should be provisional. Planning is re-evaluated every quarter on the basis of events that have occurred. The planning also allows for the quick launch of new oversight if an event indicates the need for such. The oversight has thus become both risk and event based to enable a quick reaction to changes in the rail system. Both internal procedures and checklists have been prepared for oversight activities.

All audits are carried out by the Swedish Transport Agency's own personnel. Approximately five AWU (annual work units) are spent on safety oversight. Oversight cost approximately five million six hundred thousand Swedish kroner (approximately EUR 643,000) in 2012.

The Swedish Transport Agency is mapping out how road, railway, maritime, and aviation oversight is performed, which may lead to new methods. One of the first results of the project was a common basic training programme.

Number of inspections carried out by the Swedish Transport Agency

		Part A safety certificates issued	Part B safety certificates issued	Safety authorisations issued	Other activities (specify)
3. Number of inspections of RU/IM during 2011	**Planned**	0	6 (dangerous goods inspections)	0	0
	Unplanned (unannounced to RU/IM)	0	0	0	0
	Completed	0	6 (dangerous goods inspections)	0	0

Table 9: Number of inspections planned, unplanned, and carried out in 2011.

A comparison between the number of inspections carried out and the number of inspections planned reveals that six were carried out and six were planned (see Table 9). That is a performance rate of 100%. Most of the Transport Agency's oversight consists of audits.

The Transport Agency performs four types of audits:

- Audit 1 comprises a written check of part of the safety management system (SMS)
- Audit 2 comprises interviews with management and verification with operational personnel focussing on one or more parts of the SMS
- Audit 3 comprises interviews with management and verification with operational personnel focussing on the whole SMS.
- FM is a corporate meeting for exchanging information based on changes to and effects of the SMS

Number of audits carried out by the Swedish Transport Agency

		Part A safety certificates issued	Part B safety certificates issued	Safety authorisations issued	Other activities (specify)
4. Number of audits of RU/IM during 2012	**Planned**	55	55	83	0
	Completed	61	61	93	0

Table 10: Number of audits planned and carried out in 2012.

The audits performed on part A safety certificates were simultaneously performed on part B safety certificates. Most audits performed on issued safety authorisations were planned in advance, but some were performed after an accident or incident or after the Transport Agency had in some other way obtained information that a deficiency may exist. In some cases, a planned audit coincided with the infrastructure manager having to renew its authorisation and was therefore handled as part of the authorisation renewal process.

Most audits performed on issued safety authorisations were planned in advance, but some were performed after an accident or incident or after the Transport Agency had in some other way obtained information that a deficiency may exist. In some cases, a planned audit coincided with the infrastructure manager having to renew its authorisation and was therefore handled as part of the authorisation renewal process.

		Quantity
RESULTS	Bans	3
	Injunctions	45
	Prosecutions	0

Table 11: Summary of results from oversight activities in 2012.

As can be seen in Table 11, oversight activities performed in 2012 resulted in three bans and forty-five injunctions, injunctions being the most typical result of oversight activities. Railway undertakings' and infrastructure managers' safety management systems essentially work well.

In 2012, as well, considerable efforts were made to check operators' procedures for working in the track environment because the number of incidents is still high.

The audits of railway undertakings have often resulted in a greater number of deviations that stem from an inability of the undertakings to manage their own safety management and internal follow-up. The Swedish Transport Agency has activities in progress to correct the problem. One such activity is an inspection specifically targeted at internal system audits.

The most common deficiencies uncovered by oversight activities concerning infrastructure managers are that measures are not taken in good time following an inspection of the track system. Another common deficiency is that the traffic safety instructions of undertakings are not updated.

H REPORTING ON THE IMPLEMENTATION OF COMMON SAFETY METHODS FOR RISK EVALUATION

Reporting on the implementation of common safety methods for significant technical changes that affect vehicles or structural subsystems, under Article 15(1) of Directive 2008/57/EC or in accordance with a TSI, was optional through 19 July 2010. The Swedish Transport Agency's accountability for organisational and operational changes applies from 1 July 2012.

2011 was the first year for which the Swedish Transport Agency reported on how the common method for risk evaluation had been applied to technological changes. For this reason, the Swedish Transport Agency posed questions to operators based on ERA's guidance and template for the safety report. In conclusion, it can be stated that after reporting in 2011, Commission Regulation (EC) No 352/2009 on a common safety method for risk evaluation is known, but it has still only been applied in a few cases.

Forty operators state in the 2012 safety reporting that they made minor changes, most of which were of an organisational nature, such as a new CEO or organisation. Other changes that are not considered safety-sensitive include new software in technical equipment, for example.

A small number of operators (23) report that they made significant changes for which the common method of risk evaluation and assessment was used. The changes were technical, operational, and/or organisational. Subcontractors were involved in the risk evaluation/ assessment in nine cases. Operators engaged assessment bodies in two cases.

Few of the operators have experience using the common method of risk evaluation. The main opinion conveyed is that the application of a methodical risk evaluation is positive and that it provides a good basis for the management of safety efforts. The negative opinion conveyed is that the method is extensive and that a similar method is already used for risk analysis.

I CONCLUSIONS AND PRIORITIES

The follow-up of accidents in 2012 shows that no passengers died as a result of rail operations. However, 7 level crossing users, 5 unauthorised persons, 2 other persons, and 1 employee died.

The Swedish Transport Agency's 2011 safety report followed-up on the number of killed and seriously injured persons that resulted from unauthorised track access because this number increased in 2010. The purpose of the follow-up was to identify reasons for the increase and it found that it could be largely attributed to difficulties in determining whether an event was an accident or a suicide. The total number of killed and seriously injured persons in 2012, including suicides, was 115 persons, which is more than in the preceding year (101).

The Swedish Transport Agency's oversight has prioritised follow-ups on the operators' safety management systems and to check that they are capable of taking the appropriate actions when a deviation occurs.

An area of development in which the Swedish Transport Agency began in 2011, and continued in 2012, concerns a project to gain access to hospital data on persons injured in railway and boating accidents. Data is collected through existing interfaces that the Transport Agency uses to follow-up on injuries from road traffic accidents. The National (Swedish) Board of Forensic Medicine is another data source. Their reports are important for quality assurance of data in cases of death for, inter alia, the determination of suicide and establishment of information such as age and gender as well as comprehensive event descriptions. Broader data collection for follow-ups of injuries and deaths should mean an increase in the quality of the accident information.

In 2013, the Swedish Transport Agency collaborated with the Swedish Transport Administration to publish joint preliminary accident statistics for all four modes of transport, rail, aviation, maritime, and road. This took place partly at the turn of 2012/2013 and partly in early July 2013 for the first six months of the year.

J SOURCES/DEFINITIONS USED

Sources

The indicators in this report are based on information that railway undertakings and infrastructure managers have provided in their safety reports. With regard to deaths, serious injuries, and suicides, the classification has been made by the police.

Data on Swedish Transport Agency operations in 2012 were acquired from unit managers of the Transport Agency's Road and Rail Department's various units and from the internal registers.

The category of unauthorised track access includes events not yet classifiable as suicides or accidents. The former SIKA's (Swedish Institute for Transport and Communications Analysis; now Transport Analysis) PM 2008:3 Socio-economic principles and calculation values for the transport sector: ASEK 4 *2005:16* has been used as the source for calculated values for lives; see below for further details.

The Swedish Central Bank's mean annual exchange rate has been used for conversion to the euro and was downloaded from: http://www.riksbank.se/sv/Rantor-och-valutakurser/Arsgenomsnitt-valutakurser/?y=2012&m=12&s=Comma

Information on track and traffic data has been obtained from Transport Analysis. The Swedish Transport Administration has provided information on the expansion of Automatic Train Control (ATC, ERTMS).

Definitions

The definitions below are mostly taken from the Swedish Transport Agency's guidance on the Swedish Rail Agency's regulations (TSFS 2011:86) on rail accident and safety reporting. The guidance is also available on the Swedish Transport Agency's website at www.transportstyrelsen.se. The guidance will be updated as the Swedish Transport Agency adopts new regulations on accidents and safety reporting based on Commission Directive 2009/149/EC.

Accidents included in the report:

- are related to railway vehicles in motion;
- are unwanted or unintended, i.e. vandalism and sabotage are excluded;

Comment: suicides are presented separately.

- have not occurred in workshops, warehouses, or depots (e.g. engine sheds);

And have led to one or more of the following consequences:

- at least one person has died within 30 days;
- at least one person has been so seriously injured as to require hospital treatment for more than 24 hours;

National definition: as regards serious injury, in years prior to 2008 the national definition of 14 days' sick leave was used. Even after 2008, there is some uncertainty in the data because precise details on hospitalisation duration are not always held by the police authorities.

- railway vehicles, rail infrastructure, the environment, or property not being transported by the railway vehicle suffers such damage that the costs are at least EUR 150,000 (approximately SEK 1.4 million);

- rail traffic on the line in question was completely blocked for at least six hours.

If an accident leads to a secondary accident, e.g. a collision that leads to a fire, the accident is reported according to the category of the primary accident. In the example, this means that even if the secondary accident of a fire had the greater impact, the accident should still be reported as a collision.

(Directive 2004/49/EC and Regulation 1192/2003/EC)

Differences from the accident statistics supplied to Eurostat

As certain infrastructure managers and railway undertakings are exempt from supplying safety reports (see Section B.2.1), the indicators do not provide a measure for all railways in Sweden. For example, accidents on local and regional networks that are independent and intended solely for passenger or museum traffic, such as Saltsjöbanan and Roslagsbanan, are excluded from this report. The figures for the number of deaths and serious injuries are therefore different from the figures provided annually by Sweden to Eurostat and from the figures that are published annually in Transport Analysis's official statistics publication, 'Bantrafikskador' [Rail Traffic Injuries].

Definitions relating to accident categories

Train
One or more locomotives or multiple units, with or without carriages connected, running according to timetable under a given number designation. A light engine, i.e. a locomotive travelling on its own, is considered to be a train.

Train collision, including impact with objects within the clearance gauge
Train collisions are divided into two subgroups when the indicators are reported: train collision and train impact.

Train collision refers to any type of collision between a train and another railway vehicle, e.g. between a train and

- the front of another train

- the rear of another train

- part of another train that is within the clearance gauge

- a vehicle in a shunting movement

Train impact refers to collisions between a train and

- a solid object
- an object that is temporarily present within the clearance gauge (except objects dropped by a road user at a level crossing)

Comments:
A train collision leading to derailment is reported as a train collision. The 'impact' category also includes impacts with animals if this leads to a significant accident. A collision only between vehicles which are not run as trains is reported under the 'other' category. Impact with an object which has been dropped by a road user on a level crossing is reported as a 'level-crossing accident'.

Train derailment
An accident involving at least one wheel leaving the rail.

Comments:
An event in which the train returns to the rail is also reported if it leads to an accident with the consequences stated above. Derailments involving movements other than train movements are reported as 'other' if they cause an accident with the consequences stated above.

Fire in rolling stock
Accidents involving fires or explosions occurring inside a moving railway vehicle (including the cargo). Fires or explosions that occur when a train is stopped at an intermediate passenger interchange or during shunting at an intermediate passenger interchange are also to be reported. Fires are deemed to be fires in passenger trains from the time a train is stationary at the platform and ready to receive passengers until the train reaches its final destination and all passengers have left the train.

Comments: Fire also includes smoke production with a clearly defined source. Neither arson fires nor fires occurring during siding or shunting at railway yards are included.

Accident to person caused by rolling stock in motion
Accidents where one or more individuals are hit by a railway vehicle or by an object which is attached to or which falls from a railway vehicle. This includes accidents involving individuals falling from a moving railway vehicle as well as accidents involving individuals falling inside a railway vehicle or being hit by a loose object inside a railway vehicle.

Suicide accident
An intentional self-destructive act resulting in death or serious injury; the Swedish Transport Agency verifies the details with the police authority.

Level-crossing accident
An accident occurring at a level crossing involving at least one railway vehicle and one or several road vehicles, pedestrians, or cyclists. A collision with an object which has fallen from a road vehicle or been dropped on a level crossing by a road user is reported as a level-crossing accident.

Comments:
A collision with an object on a level crossing which has not fallen from a road vehicle or been dropped by a road user is reported as an impact and not as a level-crossing accident.

Other accident
All accidents related to railway vehicles in motion but which cannot be classified as a train collision, train derailment, level-crossing accident, accident to person, suicide, or fire.

Comments:
The main types of accident in this category should be:

- *Collisions and derailments with movements other than trains*
- *Discharge of dangerous goods during transport*
- *Loose objects not transported on or fixed to the train and which shoot away from it, e.g. ballast, ice, etc.*

Definitions for death and serious injury

Passenger
A person travelling on a train and who is not part of the train crew. When accidents are reported, persons boarding or alighting from a moving train are also included in the 'passengers' category.

Comments:
A person crossing the tracks at a station where this is not allowed is classified as 'unauthorised', whereas in all other cases, this person is classified as 'other'. Individuals on the platform waiting for a train, for example, are classified as 'other'.

Employee
A person who has employment associated with the railway and who is on duty when an accident occurs. This includes train crew and employees working on railway vehicles or railway infrastructure.

Road user on level crossing
A person using a level crossing to cross railway tracks either on/in a vehicle or on foot.

Unauthorised person on railway premises
A person who, without permission, is on railway premises where this is not allowed.

Other person
A person who is not classified as a passenger, railway staff, road user on a level crossing, or unauthorised person.

Definitions for deviations

If a deviation results in an accident that must be reported then the deviation is also reported as an accident. If a SPAD leads to a collision, for example, this should be reported as one SPAD and one collision.

Unauthorised signal passed at danger (SPAD)
Event where a part or all of the train has, without permission, passed the reserved route's end of movement.

Comments:
Examples of SPADs:

- *Unauthorised passing of main signal showing 'stop'*
- *Unauthorised passing of end of movement for a route as indicated by cab information*
- *Unauthorised passing of an S-board or steadily held stop signal (flag or equivalent)*

Events involving vehicles starting to roll uncontrolled and passing a stop signal are not included in this indicator, nor are SPADs resulting from a signal changing to 'stop' too late for the driver to have time to stop.

Broken wheel
A wheel fracture creating a risk of derailment or causing a derailment.

Broken axle
An axle fracture creating a risk of derailment or causing a derailment.

Broken rail
A rail split into two or more parts, or a rail from which metal has come loose with a resulting gap of more than 50 mm in length and more than 10 mm in depth in the rail running surface.

Track geometry fault
All faults related to track geometry requiring immediate shut-down or reduction of speed in order to maintain safety.

Signalling failure leading to less certain signalling information than required
All faults of the signalling system (both railway infrastructure and vehicles) leading to less restrictive signalling information than required.

Comments:
This indicator refers to technical faults leading to signalling information allowing a higher speed than required or not showing a 'stop' signal when so required. The indicator also includes faults concerning the display in the driver's cab.

Definitions for the financial consequences of accidents
In terms of the CSIs that affect the financial consequences of accidents, the total costs for the railway undertaking or infrastructure manager are reported for all accidents, i.e. including accidents not reported in the safety reports.

The information on costs for fatalities and serious injuries is based on calculated values for deaths and serious injuries from a socio-economic perspective, produced by SIKA in PM 2008:3 Socio-economic principles and calculation values for the transport sector: ASEK 4 *2005:16.* The calculated values, which are given in 2006 values, are then multiplied by the number of fatalities and serious injuries. The Swedish Central Bank's annual mean exchange rate for 2011 (9.0035) has been used.

The data on costs of environmental damage and the costs of replacement or repair of railway infrastructure and rolling stock is based on the reporting operator's experience with actual costs. The reporting operators have stated that this information is uncertain. The Swedish Central Bank's annual mean exchange rate for 2011 (9.0035) has been used.

Costs of delays due to accidents have been reported for 2010 for the state-owned infrastructure. The figure also includes accidents caused by incidents as the Swedish Transport Administration has not had the opportunity to differentiate them. Data on delay minutes, the value of time for travellers, and the breakdown of working/leisure travellers are taken from the Swedish Transport Administration. The Transport Administration has reported the values directly in euros.

Compensation for damage to the environment
The sum that, based on the operator's experience, must be or was paid to restore a damaged area to its condition prior to a railway accident. This indicator concerns accidents involving the release of pollutants, transported substances such as dangerous goods, as well as other environmentally hazardous substances such as fuel, for example.

Costs for replacement or repair of railway infrastructure or rolling stock
The costs for acquiring new railway infrastructure or rolling stock with the same functionality and technical performance as equipment that cannot be repaired, and the costs for restoring damaged railway infrastructure or rolling stock to the same level as before an accident. The costs are estimated by operators on the basis of their experience and include any costs for renting rolling stock during the period in which a vehicle is unavailable as a result of an accident.

Definitions relating to traffic data and the technical safety of the infrastructure

Train
One or more locomotives or multiple units, with or without carriages connected, running according to timetable under a given number designation. A light engine, i.e. a locomotive travelling on its own, is considered to be a train.

Train kilometre
Unit of measure representing the movement of a train over one kilometre. The distance used is the distance actually travelled, if available, otherwise the standard network distance between the origin and destination should be used. Only the distance travelled on Swedish territory should be taken into account.

Train kilometre on track with an automatic train protection/control system in service
Unit of measure representing the movement of a train over one kilometre of track equipped with an automatic train protection system in service. An automatic train protection system is a technical system that monitors adherence to signalling information and speed restrictions by means of speed monitoring and automatic emergency stop at stop signals. The infrastructure manager should specify which such systems are in service. Examples of automatic train protection/control systems are ATC and ERTMS.

Passenger kilometre
Unit of measure representing the transport of one passenger by rail over a distance of one kilometre. Only the distance travelled on Swedish territory should be taken into account.

Track kilometres
The length of the track being operated on. Double-track or multi-track lines are calculated separately. A 100 km line with double-tracks is therefore 200 track kilometres.

Track kilometres equipped with an automatic train protection/control system in service
The length of track being operated on with an automatic train protection/control system in service. An automatic train protection system is a technical system that monitors adherence to signalling information and speed restrictions by means of speed monitoring and automatic emergency stop at stop signals.

Level crossings
A crossing on the same level between a road[21] and a railway, designated by the infrastructure manager, and available to users of public or private roads.

Comments: Platform crossings are not considered level crossings, nor are crossings used only by employees.

Definitions related to safety management

Certain elements of the operator's safety management system[22] and the outcome of certain activities related to the safety management system must be described. The elements to be described are safety targets, action plans, and system audits. Operators must also report any deficiencies and faults discovered in relation to the safety of railway operations and infrastructure management in general.

Safety targets
Indicate the long-term safety targets for operations and the safety targets for the year to which the reporting relates. The targets must be indicated in the documentation of the safety management system. Whether or not the targets are met must also be indicated. If the targets have not been met, or only partially met, the identified or suspected reason for this must be indicated. Measures that are planned or have been carried out in order to achieve the targets that have not been met, or only partially met, must also be indicated.

Action plans
Describe the action plans with safety improvements that were developed and the reason for deciding on said improvements as well as the results.

Describe the reason for developing the safety improvements in the action plans. If, for example, an event has occurred that has led to the safety improvements, describe the event or events on a general level, e.g. the type of accident, incident, major fault or major deficiency, the circumstances surrounding the event(s), and the consequence(s) that could have occurred and which prompted the safety improvement(s).

System audits
A system audit is a systematic inspection to determine whether safety-sensitive activities and the

[21] Public or private road or street, including foot paths and cycle paths.

[22] Rules on safety management systems are stipulated in the Swedish Rail Agency regulations (JvSFS 2007:1) on safety management systems and other safety provisions for railway undertakings and in the Swedish Rail Agency regulations (JvSFS 2007:2) on safety management systems and other safety provisions for infrastructure managers.

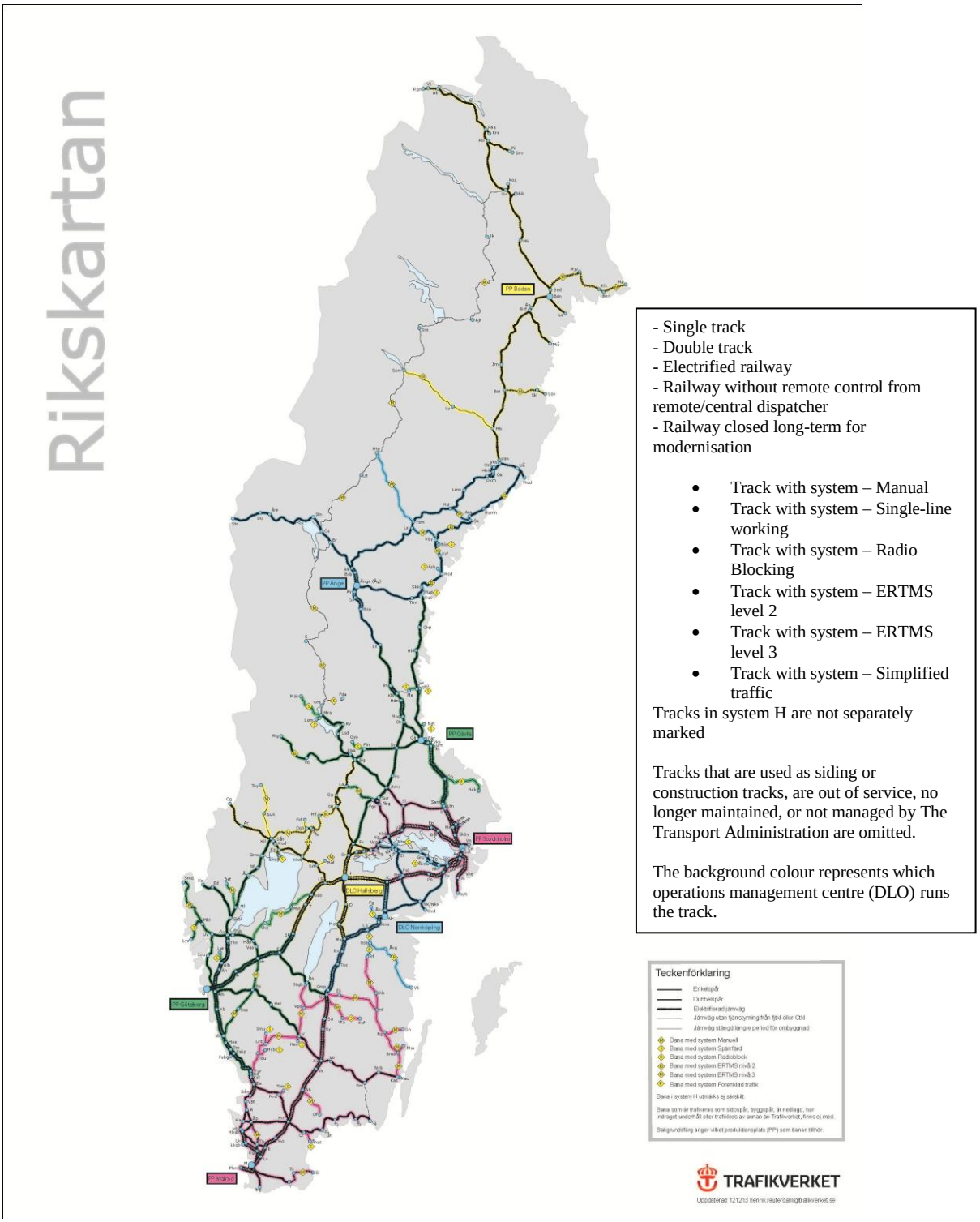
associated results correspond to that which was planned and whether the activities were carried out in an effective manner and are appropriate to achieving targets (JvSFS 2007:1 and JvSFS 2007:2).

The following must be reported:

- The total number of system audits planned for the year to which the report relates.
- The total number of system audits carried out during the year to which the report relates.
- Description of the results of the system audits carried out during the year to which the report relates.

ANNEXES

Annex A.1: The state-owned rail network



Source: The Swedish Transport Administration website: http://www.trafikverket.se/Foretag/Trafikera-och-transportera/Trafikera-jarnvag/

Annex A.2: List of active infrastructure managers at the turn of 2011/2012

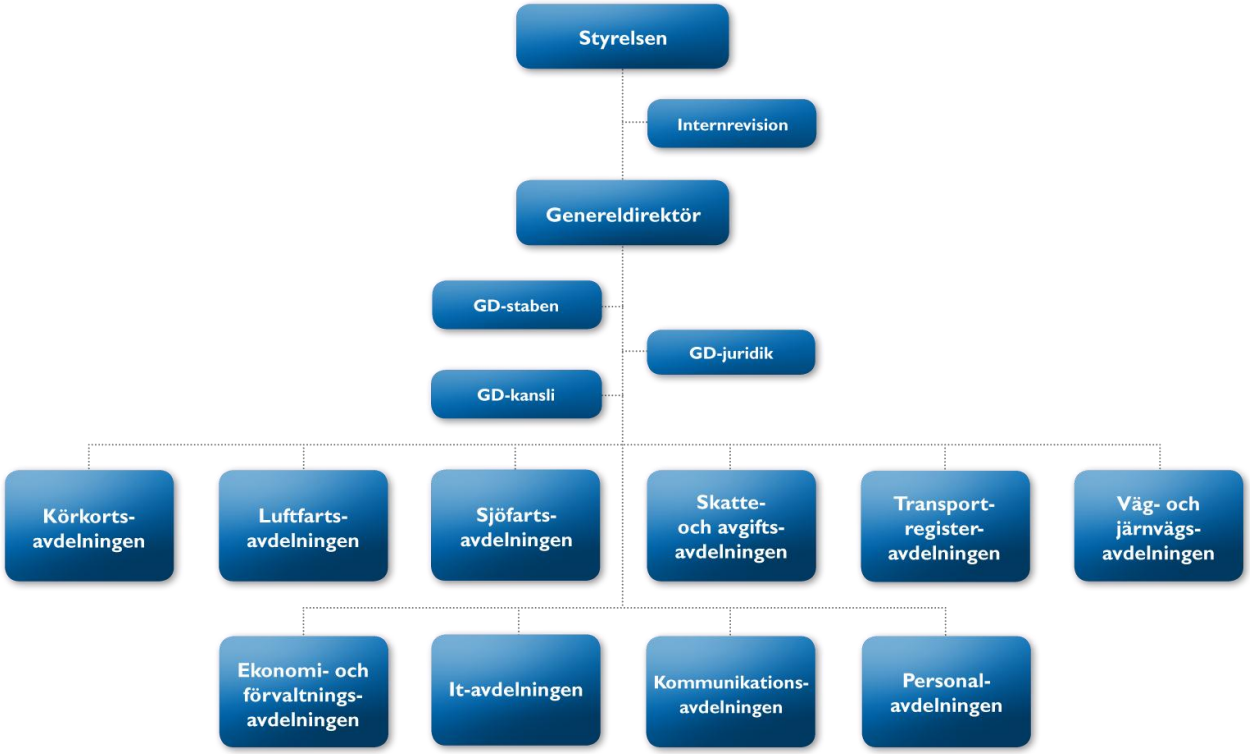
As so many railway undertakings and infrastructure managers are involved, the complete list is not attached to this report. However, such a list can be prepared upon request.

Many of the infrastructure managers in the table below are exempted from reporting as they only operate on rail networks that are not managed by the state and are used only by the infrastructure manager for the transportation of its own goods.

Permit holders	**2012**
Railway undertakings	104
Infrastructure managers	369
Total	**473**

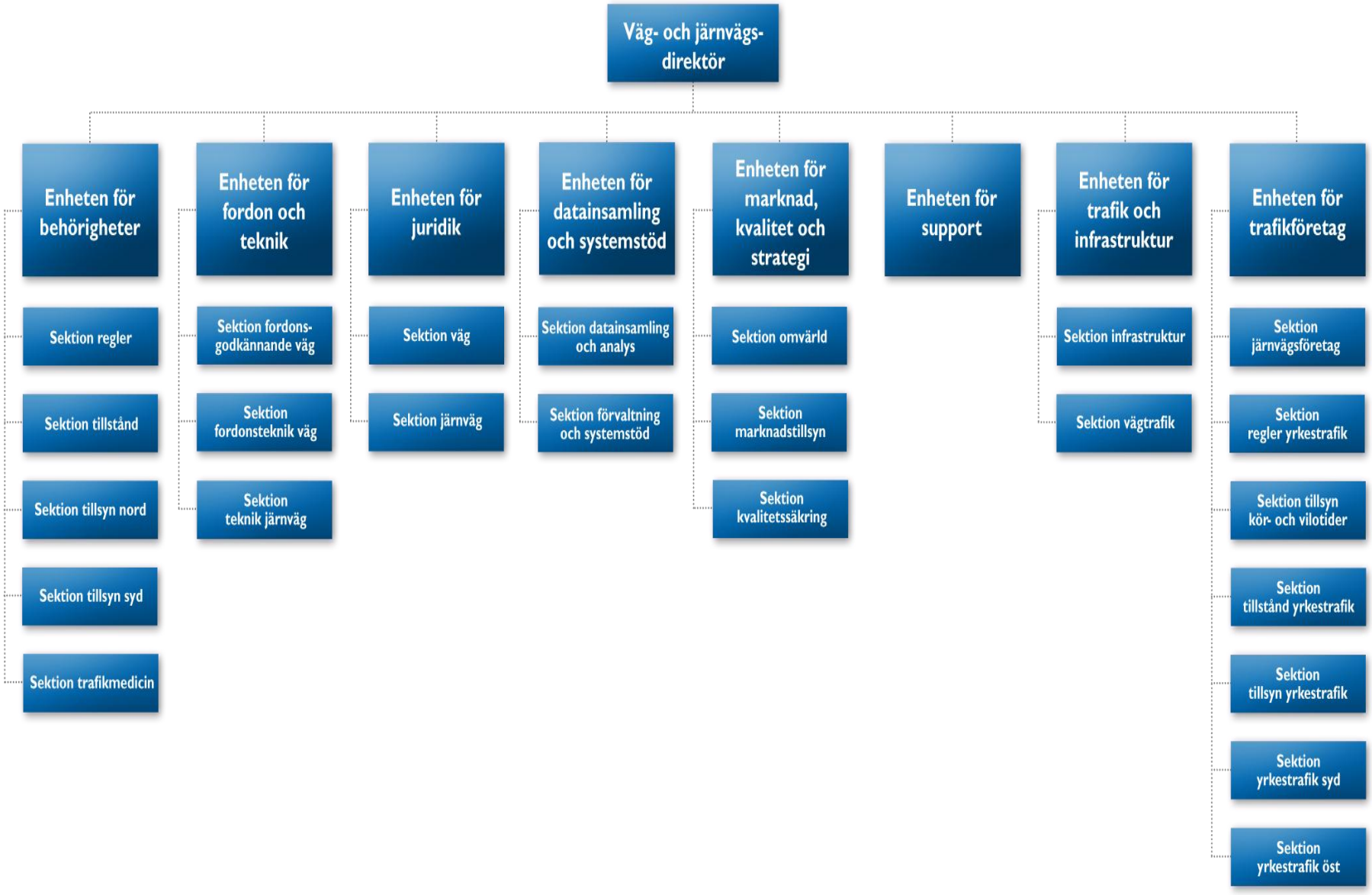
Table 1: Data on number of operators in 2012. The figures do not include transport operators and track owners that operate trams or metros unless they also are the railway undertaking or infrastructure manager.

Annex B.1: Organisation chart of the Swedish Transport Agency as of 1 January 2012



	translation		*translation*
		Körkorts avdelningen	Driving Licence Department
Styrelse	Board	Luftfartsavdelningen	Civil Aviation Department
Internrevision	Internal Audit	Sjöfartsavdelningen	Maritime Department
		Skatte och avgifts avdelningen	Tax and Fee Department
Generaldirektör	Director General	Transportregisteravdelningen	Transport Registry Department
GD-staben	Office of the DG	Väg- och järnvägsavedelningen	Road and Rail Department
GD-juridik	Legal Division of the DG	Ekonomi- och förvaltningsavedelningen	Finance and Administration Department
GD-kansli	Registry of the DG	IT-avdelningen	IT Strategy Department
		Kommunikations-avdelningen	Communications Department
		Personal-avdelningen	Human Resources Department

Annex B.2: Organisation chart of the Swedish Transport Agency's Road and Rail Department as of 15 August 2013



Director General

Authorisations Unit	Vehicles & Technology Unit	Legal Unit	Data Collection and System Support Unit	Market, Quality, and Strategy Unit	Support Unit	Traffic & Infrastructure Unit	Traffic Companies Unit
Section: Rules	Section: Vehicle Approvals – Road	Section: Road	Section: Data Collection and Analysis	Section: Foreign Markets		Section: Infrastructure	Section: Railway Undertakings
Section: Permits	Section: Vehicle Technology – Road	Section: Railway	Section: Administration and System Support	Section: Market Oversight		Section: Road Traffic	Section: Commercial Traffic
Section: Oversight – North	Section: Technology – Railway			Section: Quality Assurance			Section: Oversight – Driving and Rest Periods
Section: Oversight – South							Section: Permits – Commercial Traffic
Section: Traffic Medicine							Section: Oversight – Commercial Traffic
							Section: Commercial Traffic – South
							Section: Commercial Traffic – East

Annex C: Statistical data, common safety indicators assigned to accidents.

See the Excel file '2012 CSI data form'. The data have also been uploaded to the European Railway Agency database.

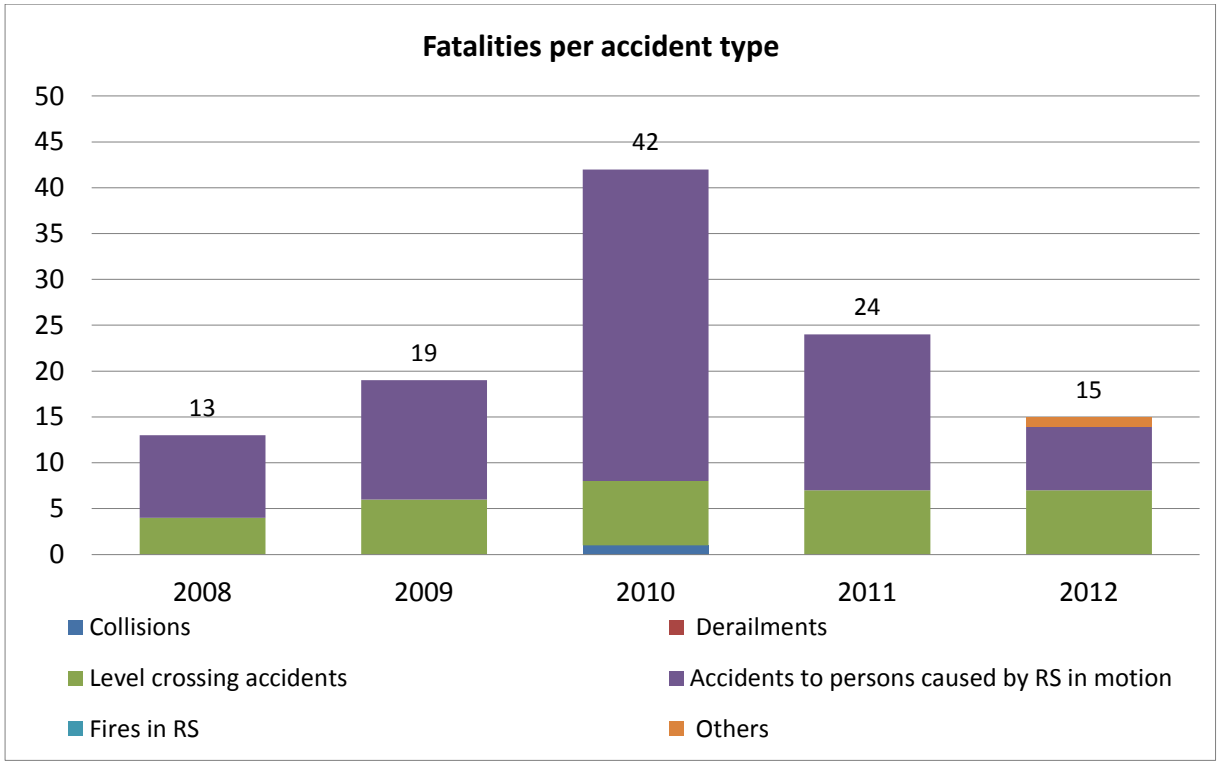


Figure C.1: *Fatalities per accident type.*

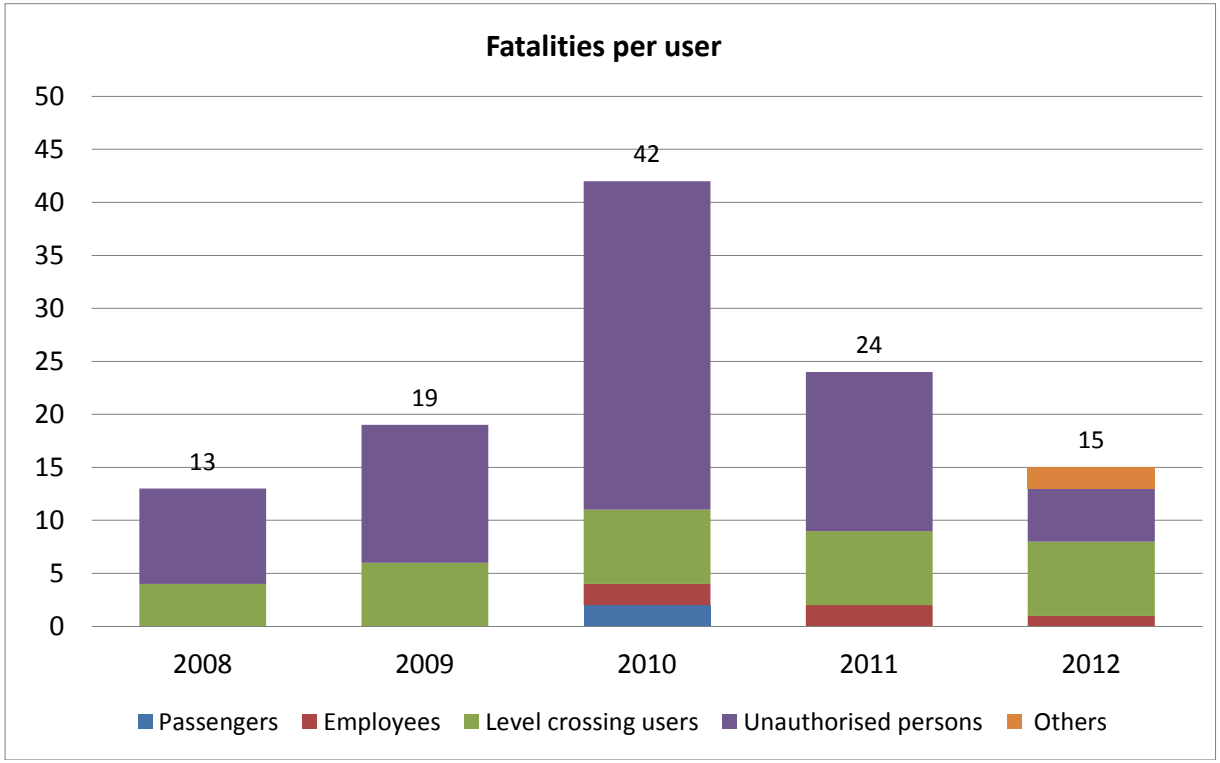


Figure C.2: Fatalities per user category.

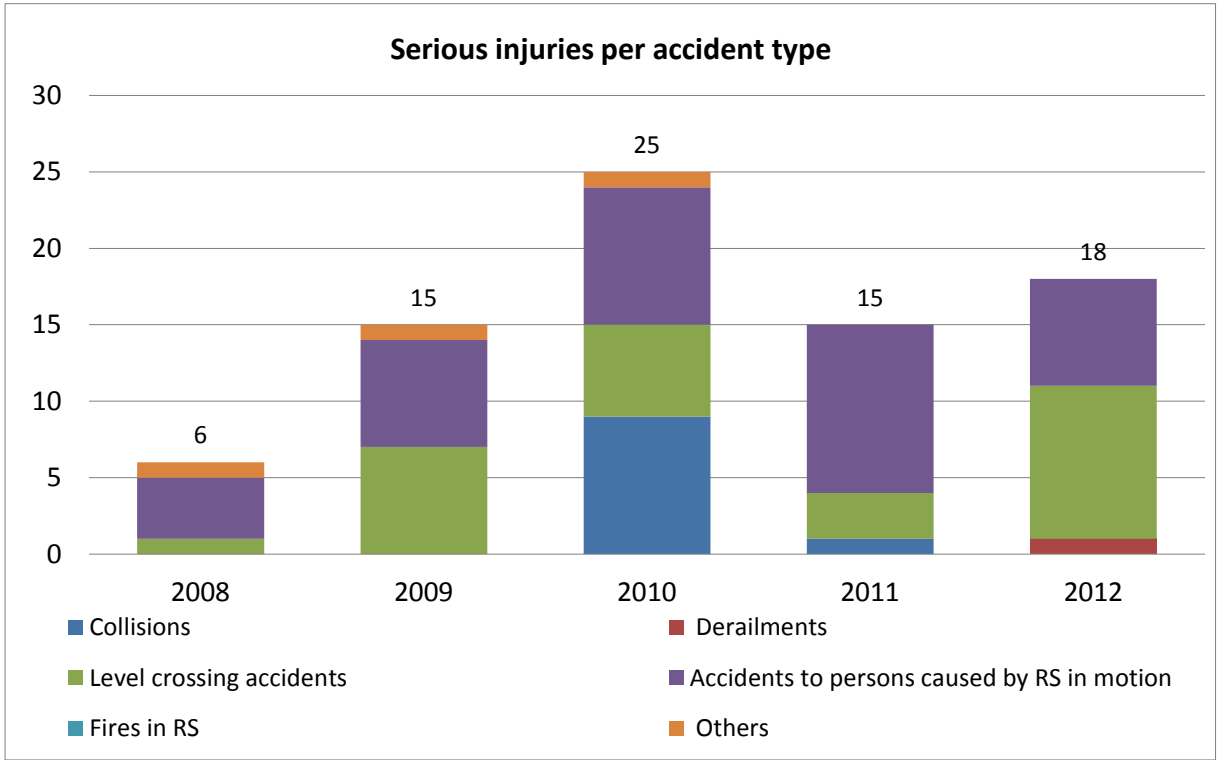


Figure C.3: Serious injuries per accident type.

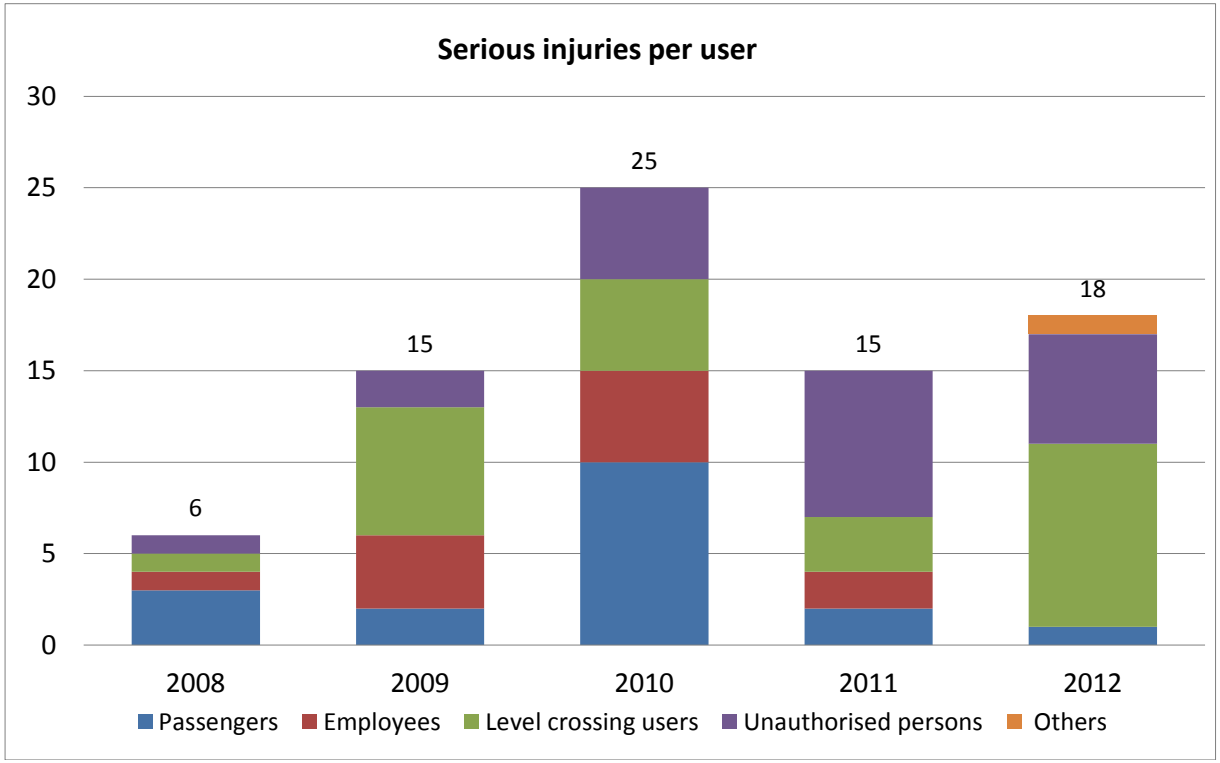


Figure C.4: Serious injuries per user category.

Annex D: List of all important changes in national legislation and other national regulatory frameworks

	Legal reference	**Date legislation enters into force**	**Reason for introduction** (specify new law or amendment to existing legislation)	**Description**
General national legislation on railway safety				
Legislation concerning NSA	No change			
Legislation concerning notified body, assessor, third party bodies for registration, examination, etc.	No change			
National provisions concerning rail safety				
Provisions concerning national safety targets and safety practices	No change			
Provisions concerning requirements for safety management systems and the issuing of safety certificates to railway undertakings.	No change			
Provisions concerning requirements for safety management systems and the issuing of safety authorisations to infrastructure managers	No change			
Provisions concerning requirements for vehicle keepers.	The Swedish Transport Agency's regulations (TSFS 2012:33) on inspections, performance testing, and vehicle maintenance	31 May 2012	Commission Regulation (EU) No 445/2011	The rules have been adapted so that operators who use railway vehicles with a certified entity in charge of maintenance are not subject to certain rules. The Swedish Railway Inspectorate's

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
				regulations (BV-FS 2000:1) on inspections, performance testing, and vehicle maintenance were superseded by TSFS 2012:33.
Provisions concerning requirements for maintenance workshops.	No change			
Provisions concerning requirements for authorisation to place into service and maintain new or significantly altered rolling stock, including provisions on the exchange of rolling stock between railway undertakings, registration systems, and requirements for testing procedures.	The Swedish Transport Agency regulations (TSFS 2011:106) on technical specification for interoperability of the subsystem 'Rolling stock – Locomotives and passenger rolling stock' of the trans-European conventional rail system The Swedish Transport Agency regulations (TSFS 2012:105) on technical specification for interoperability of the subsystem 'Rolling stock – Noise' of the trans-European conventional rail system	1 February 2012 1 October 2012		EC Commission decision 2011/291/EU was transposed into Swedish law. EC Commission decision 2011/229/EU was transposed into Swedish law.
Common rules for operating the railway network, including provisions that concern procedures for signalling and traffic.	The Swedish Transport Agency's regulations (TSFS 2012:14) on exceptions from the Swedish Rail Agency traffic regulations (JvSFS 2008:7) for test runs.	10 September 2012		The regulations have been updated to better meet the railway industry's needs. Incorrect references have also been removed. The Swedish Transport Agency's regulations (TSFS 2009:28) on exemptions from the Swedish Rail Agency

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
	The Swedish Transport Agency's regulations (TSFS 2012:66) amending the Swedish Rail Agency traffic regulations (JvSFS 2008:7)	9 December 2012		traffic regulations (JvSFS 2008:7) for test runs has been superseded by TSFS 2012:14.
Provisions concerning requirements for additional internal operational provisions that must be established by the railway undertakings and infrastructure managers.	No change			
Provisions concerning requirements for personnel with duties of importance for traffic safety, including selection criteria, health requirements, occupational training, and certification.	No change			
Provisions concerning the investigation of accidents and incidents, including recommendations	No change			

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
Provisions concerning requirements for CSIs, including reporting and analysis.	No change			
Provisions concerning requirements for authorisation to place into service rail infrastructure (tracks, bridges, tunnels, ATC, radio, signalling, interlocking, level crossings, platforms etc.).	The Swedish Transport Agency's Regulations (TSFS 2011:107) on technical specification for interoperability as regards safety in railway tunnels	1 February 2012		EC Commission decision 2008/163/EC was transposed into Swedish law.

Annex E: Trends in issued safety certificates and safety authorisations

E.1 Safety certificate pursuant to Directive 2004/49/EC

A. To ensure that the information in ERADIS is current, please enter the number of existing safety certificates in ERADIS that were valid at the end of the reporting year B. Please ensure that the information provided in this table is consistent with the information provided in section 'G. Oversight of railway undertakings and infrastructure managers'		Total number of certificates	Number of Part A certificates in ERADIS	
E.1.1. Number of Part A safety certificates issued in the reporting year and in previous years which remained valid at the end of 2012		35	35	

C. To ensure that the information in ERADIS is current, please enter the number of existing certificates in ERADIS that were valid at the end of the reporting year D. Please ensure that the information provided in this table is consistent with the information provided in section 'G. Oversight of railway undertakings and infrastructure managers'		Total number of certificates	Number of Part B certificates in ERADIS	
E.1.2. Number of Part B safety certificates issued in the reporting year and in previous years which remained valid at the end of 2012	Number of Part B certificates for which Part A was issued in your Member State	35	35	
	Number of Part B certificates for which Part A was issued in another Member State	2	2	

Please provide information on applications for Part A certificates received in the current reporting year for new certificates or existing certificates which need to be renewed or updated/amended			A	R	P
E.1.3. Number of new		New certificates	2		

applications for **Part A** safety certificates submitted by railway undertakings in 2012.		Updated/amended certificates	8		
		Renewed certificates	5		

Please provide information on applications for Part B certificates received in the current reporting year for new certificates or existing certificates which need to be renewed or updated/amended			A	R	P
E.1.4. Number of new applications for **Part B** safety certificates submitted by railway undertakings in 2012.	Where Part A was issued in your Member State	New certificates	2		
		Updated/amended certificates	9		
		Renewed certificates	5		
	Where Part A was issued in another Member State	New certificates			
		Updated/amended certificates			
		Renewed certificates			

A = Approved application, safety certificate is already issued
R = Rejected application, no safety certificate was issued
P = The case is still pending, a safety certificate has not yet been issued

To ensure that the information in ERADIS is current, please enter the number of safety certificates that had been revoked by the end of the reporting year	Total number of revoked certificates in 2012	Number of revoked certificates in ERADIS (which were revoked in 2012)
E 1.5 Number of Part A safety certificates revoked in the current reporting year	3	3
E 1.6 Number of Part B safety certificates revoked in the current reporting year	3	3

E.1.7. List of countries where railway undertakings that had applied for a Part B safety certificate in your Member State have obtained their Part A safety certificate

Name of railway undertaking	Member State where the Part A safety certificate was issued
Cargonet AS	Norway
DB Schenker Rail Scandinavia A/S	Denmark

E.2. Safety authorisations pursuant to Directive 2004/49/EC

Please ensure that the information provided in this table is consistent with the information provided in section 'G. Oversight of railway undertakings and infrastructure managers'	Total number of safety authorisations		
E.2.1. Number of safety authorisations issued to infrastructure managers in the reporting year and in previous years which remained valid at the end of 2012	369		

Information: Please provide information on applications for safety authorisations received in the current reporting year or existing authorisations which need to be renewed or updated/amended		A	R	P
E.2.2. Number of applications for safety authorisations submitted by infrastructure managers in 2012	New authorisations	19		
	Updated/amended authorisations	55		
	Renewed authorisations	95		

A = Approved application, authorisation is already issued
R = Rejected application, no authorisation was issued
P = The case is still pending, an authorisation has not yet been issued

E 2.3 Number of safety authorisations revoked in the current reporting year	55

E.3. Procedural aspects – Part A safety certificates

		New	Updated/amended	Renewed
The average length of time between receipt of an application with the required information and the final delivery of a **Part A** safety certificate for railway undertakings in 2012		2 weeks/ 2-3 months	2 weeks/ 2-3 months	–

E.4. Procedural aspects – Part B safety certificates

		New	Updated/amended	Renewed
The average length of time between receipt of an application with the required information and the final delivery of a **Part B** safety certificate for railway undertakings in 2012	Where Part A was issued in your Member State	2 weeks/ 2-3 months	2 weeks/ 2-3 months	–
	Where Part B was issued in another Member State			

E.5. Procedural aspects – Safety authorisations

		New	Updated/amended	Renewed
The average length of time between receipt of an application with the required information and the final delivery of a safety authorisation for infrastructure managers in 2012		2 weeks/ 2-3 months	2 weeks/2-3 months	–

In Tables E.3, E.4, and E.5, the indicated time of two weeks concerns the average length of time between the receipt of all necessary information and a safety certificate decision, while two to three months and one month concern the average length of time between the first application and a safety certificate decision.