SWEDISH
TRANSPORT
AGENCY

ANNUAL REPORT FOR 2008 OF THE SWEDISH TRANSPORT AGENCY PURSUANT TO ARTICLE 18 OF DIRECTIVE 2004/49/EC (THE RAILWAY SAFETY DIRECTIVE)

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A SCOPE OF THE REPORT

The purpose of this report is to describe safety on the Swedish rail system as advocated in the EU Railway Safety Directive[1] ('the Safety Directive'). In Sweden, the conditions for the railway system are primarily governed by the Swedish Railway Act[2]. Trams and metros are not covered by the report.
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 rail system. This year's report, which deals with operation in 2008, is the third of its kind. It mainly follows the guidelines provided for the purpose by ERA. The two previous reports were drawn up by the then Swedish Rail Agency. Since 1 January 2009, the Swedish Transport Agency has assumed the Swedish Rail Agency's responsibilities[3]. As this report covers operation in 2008, it is nevertheless the Swedish Rail Agency's work that is described in the chapters dealing with the safety authority's work.
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 rail networks that are independent and intended only for passenger or museum services, such as Saltsjöbanan and Roslagsbanan, have been excluded from this report.

B INTRODUCTION

B.1 Background and target group

This report has been prepared for and at the request of the European Railway Agency (ERA). It may also be of interest to employees of the Swedish Transport Agency, the Swedish Ministry of Enterprise, Energy and Communications, the Swedish Institute for Transport and Communications Analysis (SIKA), other authorities and research institutes, railway undertakings, infrastructure managers and other players in the rail sector. 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's website at www.transportstyrelsen.se and ERA's website at www.era.europa.eu, with the latter also containing reports from other countries. ERA also publishes a compiled report based on the reports that the countries submit.

The Safety Directive stipulates that the national safety authority of each Member State should each year, by 30 September at the latest, submit a report to the European Railway Agency (ERA)[4]. 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

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[1] Directive 2004/49/EC.

[2] The Swedish Railway Act (2004:519).

[3] Operations at the Swedish Civil Aviation Authority, the Maritime Safety Inspectroate, the Swedish Road Inspectorate and parts of the Swedish Road Administration have also been transferred to the new authority. The county administrative boards' operations for driving licences and essential traffic will also be transferred in January 2010. For more information on the Swedish Transport Agency, see http://www.transportstyrelsen.se

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

certification and safety authorisations, as well as results of and experience relating to the safety authority's supervision operations.
The Safety Directive stipulates that the operators, i.e. railway undertakings and infrastructure managers, should submit a safety report to the safety authority by 30 June each year[5]. In accordance with the directive, this report should contain information on how the organisation's corporate safety targets are met, reporting of information relevant to common safety indicators (CSIs), results of internal safety auditing and observations on deficiencies and malfunctions of railway operations that might be relevant to the safety of the railway.
The Swedish rail network is subject to the Swedish Railway Act[6]. In the Railway Ordinance[7], the government has authorised the Swedish Rail Agency to issue detailed regulations covering the railways field. The Swedish Rail Agency's regulations are published in the Swedish Rail Agency's Code of Statutes (JvSFS). The Swedish Transport Agency assumed the Swedish Rail Agency's responsibilities on 1 January 2009, but during 2008 it was still the Swedish Rail Agency which issued detailed regulations covering the railways field.

The Safety Directive, part of the Second Railway Package, was incorporated into Swedish law on 1 July 2007. Reporting of the CSIs has mainly been based on information gathered in accordance with the definitions proposed by ERA itself. In certain cases, national definitions have been used (allowed in the first reporting years), as shown in Annex C.
Templates and guidance for reporting 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 in spring 2007 their opinions on the Swedish Rail Agency's guidance, which contains instructions and definitions for the safety reports of the operators.
As regards the CSIs, there is a working party within ERA, in which Sweden is represented, which has been working to produce a proposed revision of Annex 1 to the Safety Directive, which is the annex containing the indicators. *The Railway Interoperability and Safety Committee* voted for the proposal in June 2009, and the amended version of the annex will probably come into effect from 2010. The CSI working party has also produced common guidance for the indicators to increase uniformity in reporting.

In order to simplify and reduce the administrative burden on the operators which are required to submit reports, the Swedish Rail Agency has, as of last year, collected the safety reports together with other accident information that is collected and reported to SIKA and the European statistics authority, Eurostat. There are, however, certain differences in definitions, which mean that the figures vary somewhat, see sections D.2 and J. Another way of simplifying the burden on the operators which submit reports is to invite them to choose between reporting via web-based forms on the Swedish Transport Agency's website, via e-mail or traditional mail.
This year's report follows as closely as possible the ERA templates for the layout of the report, including a record of the common safety indicators (CSIs). Safety reports were collected for the first time in 2007 and so this is the third year. This means that some of the information reported is based on unreliable data.

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

[6] The Swedish Railway Act (2004:519).

[7] Railway Ordinance (2004:526).

B.2 Operators

It is the operators that are the main players in the railway sector, acting as railway undertakings and infrastructure managers. Those wishing to pursue railway operations in Sweden must apply for a permit to do so from the Swedish Rail Agency (as from 2009 the Swedish Transport Agency). Permits are reviewed in accordance with the terms in the Swedish Railway Act and granted to railway undertakings and infrastructure managers separately. Therefore, an organisation may have one or more permits; an infrastructure manager may, for example, in certain cases also be authorised for rail transport services. In Swedish law, infrastructure managers and railway undertakings are defined as follows[8]:
Railway undertaking: any undertaking that, in accordance with a licence or special permit, provides traction and conducts rail transport.
Infrastructure manager: any undertaking that manages railway infrastructure and operates installations belonging to that infrastructure.
Under these definitions Sweden had 563 (585) operators licensed to conduct railway operations in 2008. Annex A lists the operators.

Permit holders	**2008**
Railway undertakings	114
Infrastructure managers	449
Total	**563**

Table 1: Information on number of operators in 2008, see list in Annexes A.2.1 and A.2.2. The figures do not include traffic operators and track owners who operate trams and metros unless they are also railway undertakings or infrastructure managers.

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 the transport of passengers and goods transport is conducted. The largest player on the rail market originates from the time when all railway operations were in the hands of the state. In Sweden, the requirements for the transport of passengers differed from those for the transport of goods in 2008. The transport of passengers was still regulated in 2008, and a state-owned company had the exclusive right to operate the inter-regional transport of passengers. In certain cases, a decision was taken to open a line to competition, and traffic was put out to tender or allocated by means of a service obligation. The regional and local transportation of passengers was procured by the respective service operator. During 2009, the Swedish Parliament approved the 'Competition on the railways' Government Bill (2008/09:176), which entails a gradual opening-up of the market to the transport of passengers by rail. The first step in this process was taken on 1 July 2009, when the market was opened up for weekend and holiday services. The market for international transportation of passengers is set to be opened up on 1 October 2009. The Parliament's decision also means that the market must be fully opened up by 1 October 2010. The transport of goods has been opened to competition but is still dominated by the company that was formerly part of the national railway administration.

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

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. In 2008 there were 449 infrastructure managers. Of these, only 20 or so were major players in terms of the number of kilometres of track. The other infrastructure managers typically have smaller track systems for their own use, for instance industrial companies with their own track linking them to the national track system, for the transport of their own goods.

B.2.1 Exempted operators

The Swedish Transport Agency has in this report, and on the basis of the Swedish 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; one of the consequences of this has been that most of the infrastructure managers have not needed to submit safety reports. A large group not granted exemptions comprises the municipalities and ports licensed to conduct railway operations. This report is based on 139 safety reports from operators. A few (smaller) operators not exempted have, despite reminders, not submitted safety reports to the Swedish Transport Agency in good time.

B.3 Summary/general trend analysis

The rail system is subject not only to EU legislation but also to national law, in particular the Swedish Railway Act. The Safety Directive has been incorporated into Swedish law since 1 July 2007. Chapter E describes major changes in laws and regulations that occurred in 2008. These include, for example, the Swedish Rail Agency's traffic regulations, which mean that the same traffic rules apply to the whole of Sweden's rail infrastructure.
The Swedish Rail Agency has during 2008 issued safety certificates and safety authorisations according to Articles 10 and 11 of the Safety Directive and conducted audits in accordance with the Safety Directive. For more on this, see Chapters F and G and Annex E.
The nature of the details to be stated in this report is such that the Swedish Transport Agency has requested information from operators and infrastructure managers. In Sweden there are many railway undertakings and infrastructure managers. The Swedish Transport Agency has made use of its ability to grant exemptions from submitting a safety report. One of the consequences of this has been that most of the infrastructure managers have not needed to submit safety reports. See Chapter B.2.1 for more on this.
The targets set by the Swedish government in the spending directive to the Swedish Rail Agency require the Swedish Rail Agency to help ensure socio-economically effective and long-term sustainable transport services for the public and businesses throughout the country. In the safety targets which form part of the spending directive, the government has specifically required that the Swedish Rail Agency work towards greater safety in the rail, tram and metro systems. Chapter C contains more information on the organisation of the Swedish Rail Agency. Each year, the Swedish Rail Agency monitors the number of people killed and seriously injured on the

railways. In the annual report for 2008, the total number of people killed and seriously injured (including suicides) per million train kilometres was compared with the number of penalties in the form of bans and injunctions relative to the number of inspections.

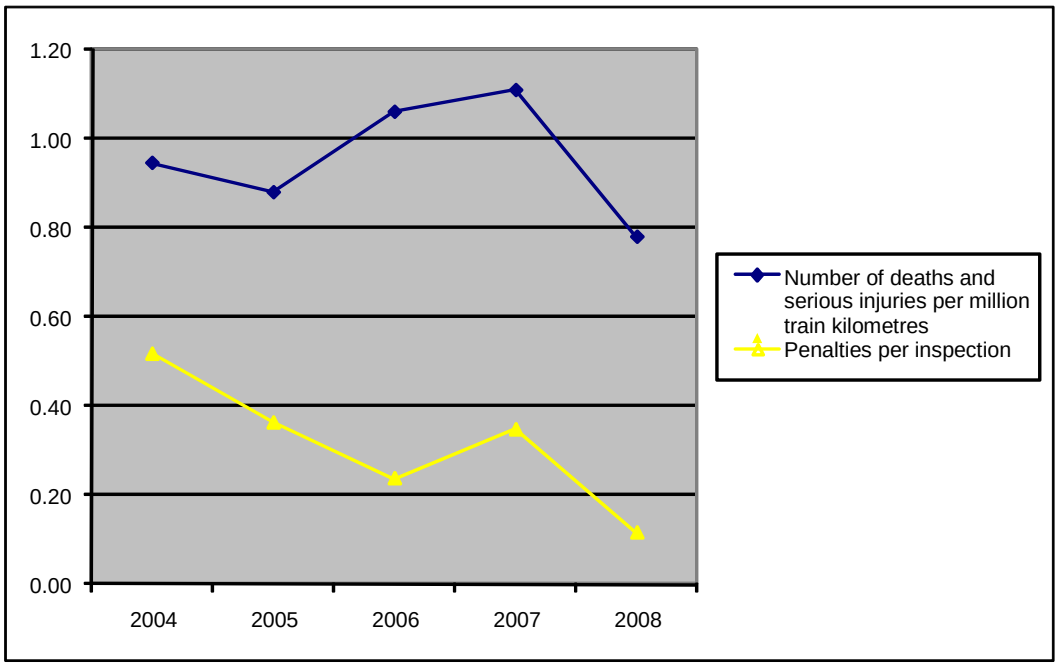

Figure 1: Safety-related key ratios for the rail system. Data taken from the Swedish Rail Agency's annual report for 2008 also include trams, metros and independent rail networks. The key ratio for the number of deaths and serious injuries (including suicides) per train kilometre is therefore somewhat higher than the data supplied as an indicator to ERA and used in other sections of this report. The diagram nonetheless gives a rough indication of the number of deaths and serious injuries per million train kilometres for the last several years.

In 2008, a total of 46 accidents occurred which required reporting in accordance with Annex 1 to the Safety Directive. The accidents comprised 4 train collisions, 14 train derailments, 3 fires, 6 level-crossing accidents, 13 accidents to persons caused by rolling stock in motion and 6 other accidents. All the individuals who lost their lives (13) did so in level-crossing accidents or accidents to persons. The number of seriously injured people (6) can also largely be attributed to level-crossing accidents and accidents to persons. Chapter D contains more detailed information on what safety-enhancing activities were conducted by operators and the Swedish Rail Agency during 2008 and a more detailed description of the indicators that operators have submitted in their safety reports. The year's reporting shows, among other things, that a greater proportion of the reporting operators have planned and conducted system audits.
In summary, it can be stated that there have been no major changes in accident statistics over the three years for which reporting has been going on. The statistical information indicates that accidents in which people are seriously injured or killed are classified as level-crossing accidents and accidents to persons. Both types of accident involve the rail system encountering other parts of society. The number of reported level-crossing accidents resulting in serious injury was lower in 2008 than in the previous two years, but it is not possible to infer whether this is a random variation or an actual fall until several more years have passed. Looking further back in time, however, level-crossing accidents have fallen in number. Cooperation within the industry on cutting the number of level-crossing accidents needs to continue and its effectiveness needs to be

boosted. With this in mind, efforts are being made to develop a network bringing together safety authorities, infrastructure managers and affected trade associations within the road and rail industries.

Some of the information sought in the safety reports is relatively new for operators, and a greater number of reported deficiencies entailing signals passed at danger, broken rails and signal failures may therefore just as well indicate an improved ability to detect deficiencies as an actual increase in the number of deficiencies.

C ORGANISATION

C.1 Organisation of the Swedish Rail Agency

The Swedish Rail Agency was a central administrative authority established in connection with new railway legislation which entered into force on 1 July 2004. In this respect, Sweden has met the requirements of the Safety Directive which states that each Member State should have a safety authority which, independently of any infrastructure manager and railway undertaking, is responsible for granting safety certifications and safety authorisations, deciding on authorisations for placing technical subsystems and components in service, and ensuring registration of items of rolling stock, for example. The new authority the Swedish Rail Agency assumed the Swedish Rail Agency's responsibilities on 1 January 2009. The Swedish Transport Agency has overall responsibility for standardisation, supervision, issuing authorisations and record-keeping for transport by rail, air, sea and road. The Swedish Rail Agency/the Swedish Transport Agency also has a normative role and supervises the railway system.
The Swedish Rail Agency/the Swedish Transport Agency is also a regulatory body pursuant to Article 30 of Directive 2001/14/EC[9], but this report concerns the mission that the Swedish Rail Agency/the Swedish Transport Agency has under the Safety Directive.
The Swedish Rail Agency's mission was set out in an ordinance[10] with instructions for the Swedish Rail Agency. As from 2009, the Swedish Transport Agency's mission is instead set out in an ordinance[11] with instructions for the Swedish Transport Agency. The government states in its spending authorisation each year what conditions are to apply to the operation of the Swedish Rail Agency/the Swedish Transport Agency over the next financial year. The spending authorisation contains, among other things, targets for transport policy, requirements for the Swedish Rail Agency/the Swedish Transport Agency to report to the government on what targets it has achieved, and budgetary constraints.
The Swedish Rail Agency was headed by a director-general and internally was organised into five units that mainly reflected the separation of the railway sector into railway undertakings and infrastructure managers, among other things. In addition to the railway undertakings unit and the infrastructure unit, which, among other things, decided on permits, conducted safety inspections and reviewed permits, a technical unit handled issues concerning the authorisation of technical subsystems, etc. The legal unit was charged with establishing the Swedish Rail Agency's regulations. These four units have largely retained their make-up in connection with the transfer to the Swedish Transport Agency and now come under the aegis of the Swedish Transport Agency's railways department. The Swedish Rail Agency's analysis and administration unit had,

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[9] The Swedish Rail Agency/the Swedish Transport Agency has the task of monitoring whether the railway services markets function effectively from a competition perspective and reporting any shortcomings to the Swedish Competition Authority. As part of its supervision, the Swedish Rail Agency/the Swedish Transport Agency must, among other things, monitor whether capacity allocation of rail infrastructure and certain rail-bound services takes place in a competition-neutral and non-discriminatory manner, and whether charges for using the rail infrastructure are competition-neutral and non-discriminatory. The Swedish Rail Agency must consult the Swedish Competition Authority on competition matters. In addition, the Swedish Rail Agency must settle disputes between railway undertakings and infrastructure managers if they disagree on whether a decision by the infrastructure manager is lawful. In addition, the Swedish Rail Agency is required to monitor whether railway undertakings and infrastructure managers meet the specific requirements imposed on the financial accounting of such operators.

[10] Ordinance (2004:527) with instructions for the Swedish Rail Agency.

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

in part, the character of an internal service unit bringing together everything that was not directly associated with the Agency's core mandate, such as personnel and finance administration and IT issues. Analysis of accident data, such as producing this year's safety report, and telephone readiness for accident reporting also fell within the remit of the analysis and administration unit. This unit was split up in connection with the transfer to the Swedish Transport Agency; an analysis unit has been formed which organisationally belongs to the railways department, while other tasks, such as IT and record-keeping, are the responsibility of the Swedish Transport Agency's head office.
Each unit at the Swedish Rail Agency was headed by a unit manager, and the same applies within the Swedish Transport Agency's railways department. The Swedish Rail Agency's annual report for 2008 shows that the Agency had 60 members of staff at the end of the year, of whom 35 were men and 25 were women. The Swedish Transport Agency had around 1 200 employees within all forms of transport. The railways department largely reflects the Swedish Rail Agency in terms of numbers of employees. Annex B contains the Swedish Rail Agency's organisation chart for 2008 and the Swedish Transport Agency's organisation chart for 2009.

C.2 Relationships of the Swedish Rail Agency

This section describes the Swedish Rail Agency's relationships with other authorities. With the assumption of operations by the Swedish Transport Agency, which is also responsible for shipping, aviation and roads, the number of relationships also increased in 2009. What is described below is the Swedish Rail Agency's relationships in 2008, which are to a large extent also representative of the relationships of the Swedish Transport Agency's Railways Department in 2009.

The Swedish Rail Agency was not a solitary authority exclusively in charge of the regulation of the whole rail system. There are several other national authorities which are responsible for their respective areas, such as the Swedish National Electrical Safety Board, the Swedish Board of Housing, Building and Planning and the Swedish Rescue Services Agency. These authorities interact and exercise their official authority over the various actors in the railway system within their respective areas of responsibility. The figure below (Figure 1) demonstrates this with some of the national authorities which have an impact on the Swedish Rail Agency and other actors in the rail system, for example by having normative tasks in certain safety-related issues.
Swedac accredits companies that confirm that technical subsystems meet the relevant technical specifications for interoperability (TSIs).
The Rescue Services Agency (from 2009, the Swedish Civil Contingencies Agency, MSB) has an overall and coordinating responsibility in its work to ensure a safer society. The Swedish Rail Agency/the Swedish Transport Agency cooperates with the Rescue Services Agency/MSB on, for example, supervision of the transport of dangerous goods.
The Swedish Rail Agency (from 2009, the Swedish Transport Agency) reports incidents to the Swedish Accident Investigation Board, which is an independent investigating body, pursuant to the Safety Directive. The Swedish Accident Investigation Board submits its recommendations to the Swedish Rail Agency (from 2009, the Swedish Transport Agency) and the Swedish Rail Agency/the Swedish Transport Agency must, acting as a safety authority, follow and take adequate measures in response to those recommendations. The Swedish Rail Agency/the Swedish Transport Agency also has to report back to the Swedish Accident Investigation Board on how

their recommendations have been dealt with and the measures taken in response to them (see Section D.3 of this report).
The Swedish Rail Agency/the Swedish Transport Agency also cooperates with the Swedish Institute for Transport and Communications Analysis (SIKA). The Swedish Rail Agency submits statistical data to SIKA, which in turn submits accident statistics to Eurostat.

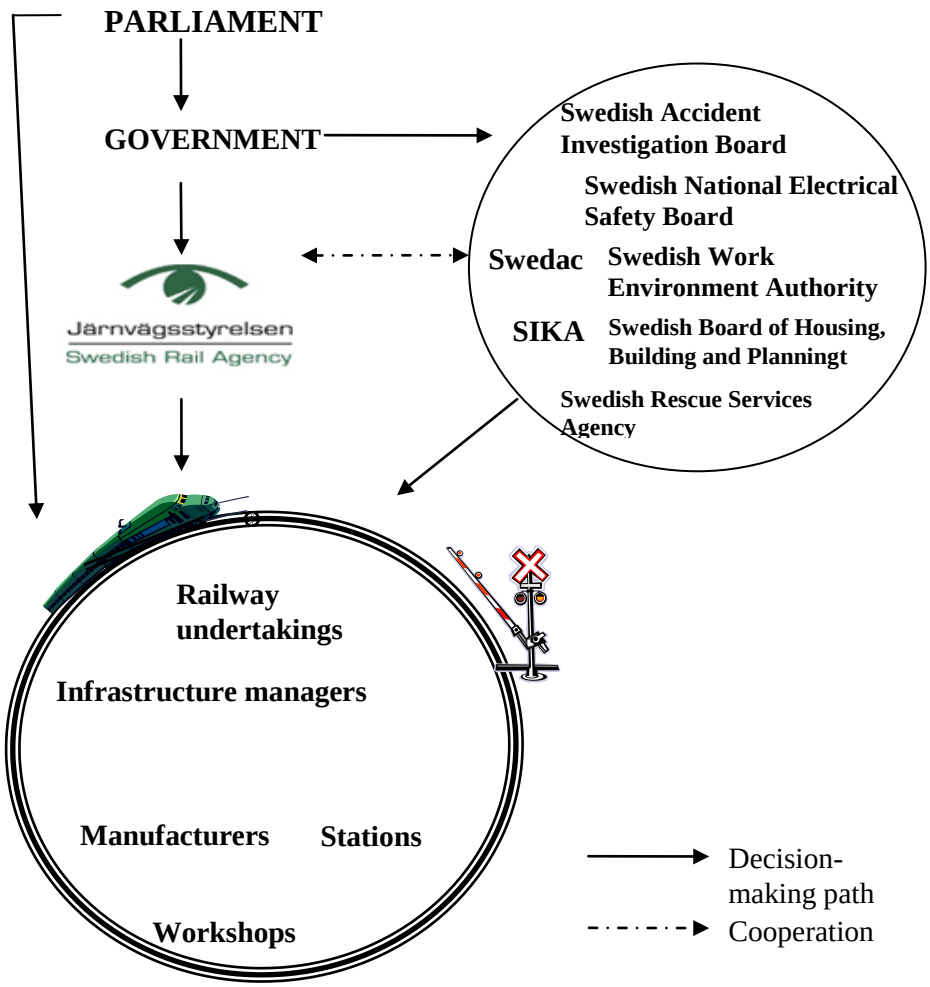

Figure 2: National relationships of the Swedish Rail Agency (this figure replaces Annex B.2)

Solid arrows in the diagram (Figure 2) represent decision paths. These are therefore one-way, whereas the two-way broken line represents cooperation.
It is not only railway undertakings and infrastructure managers that are players in the rail system, but also manufacturers of technical systems such as vehicles, signals and signal-boxes. Vehicles need maintenance and repair, which is carried out by workshops, and they are sometimes also authorised as both railway undertaking and infrastructure manager. Manufacturers are not part of the Swedish Rail Agency's area of responsibility. However, the Swedish Rail Agency is responsible for authorising subsystems to be brought into service. Similarly, the operations of the workshops are not regulated in railway legislation, although there are rules which affect the workshops' maintenance work, e.g. the requirement that the safety management system of the infrastructure managers and railway undertakings also covers maintenance of vehicles and railway infrastructure.

D DEVELOPMENT OF RAILWAY SAFETY

The work to maintain a high and constant safety level in rail operations involves all players in the rail system, as shown in Figure 1. The Swedish Rail Agency is, for example, currently following up the safety targets that the government has specified. The Swedish Rail Agency is supported in this by activities in the form of safety supervision and regulations, among other things. The operators, in their turn, follow the prescribed rules and take measures where necessary.
Hence, the national safety level is dependent on a strong and well-functioning chain, from the government via the Swedish Rail Agency all the way to the operators. For this reason, the national safety level is described in the form of objectives and safety-enhancing activities that are implemented by both the Swedish Rail Agency and the operators.

D.1 Initiatives to maintain/enhance safety

D.1.1 The Swedish Rail Agency's safety-enhancing activities

During 2008, the Swedish Rail Agency decided on the Swedish Rail Agency's traffic regulations (JvSFS 2008:7) and the Swedish Rail Agency's regulations (JvSFS 2008:8) on railway safety provisions concerning traffic and track work. The regulations came into force on 31 May 2009. With the entry into force of the traffic regulations, the same traffic rules apply to the whole of Sweden's railway infrastructure. In the past, infrastructure managers had in principle their own traffic rules, which railway undertakings were forced to follow.
In Sweden, the supervision of the various actors in the railway sector has, since 1996, been aimed at checking that the operators have a well functioning self-regulation system and are able to take appropriate measures when a deficiency occurs. Hence, as part of their supervisory activities, the Swedish Rail Agency/the Swedish Transport Agency checks the operators' 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 measures/actions that the Swedish Rail Agency/the Swedish Transport Agency has a mandate to take include bans with or without penalty, injunctions with or without penalty and ultimately suspension of permits. It is the operators who take the actual measures to reduce the number of unwanted events (accidents, incidents and other deficiencies). The Swedish Rail Agency/the Swedish Transport Agency monitors whether the operators take appropriate action.

Accident/incident or other deficiency that triggered the activity			Safety-enhancing activities decided upon
Date	**Location**	**Description of event**	
24 August 2008	Fors-Morshyttan	Derailment. Goods train carrying dangerous goods left the rails.	Inspection which led to the infrastructure manager sharpening up its routines for checking for cracks in the rails.
4 January 2008	Södertälje Syd	Unauthorised motion. The X2 experienced a 'parking brake sequencing fault' and was unable to continue. When the vehicle was to be transported to Hagalund with the aid of another X2, the defective vehicle began to roll.	Inspection by the requesting authority of the railway undertaking's investigation, including any measures arising from this investigation.
24 August 2008	St Olof - Garsnäs	Two derailments at the same location on the same date which showed that the track was in a very poor state.	A ban on using the track was issued until it had been inspected. The inspection revealed that the track was still poor, and so the ban remains in place. The undertaking then requested rail construction.

Table 2: Examples of safety-enhancing activities on the part of the Swedish Rail Agency 'triggered' by an accident or incident

Safety-enhancing activity	Description of 'trigger'	Description of the problem area
Order to the infrastructure manager to provide information on how it ensures uniform use of colour markings in changes to signalling system drawings.	A safety audit which revealed that the significance of colour markings in signalling system drawings is not uniform across the country.	Non-uniform use of colour markings may lead to wiring in signalling boxes being wrongly removed.
Request for information confirming that a fault had been eliminated. The fault has now been eliminated.	Safety inspection of a number of infrastructure managers revealed that action had not been taken in good time after an inspection of the railway.	Faults remaining in the track pose a safety risk.
Order to the relevant railway undertaking inspected to demonstrate what measures are taken and a continued focus on these areas in future planning for the railway undertakings unit's supervision.	Certain defects have been found during safety inspections with regard to the railway undertaking's internal deficiency reporting and in the handling of its own staff's training.	Deficiency management and the staff's competence are essential for good safety and continuous safety work with constant improvements.

Table 3: Safety-enhancing activities by the Swedish Rail Agency with 'triggers' other than a specific event

D.1.1 Operators' safety-enhancing activities

The majority, approximately 90%, of the operators who submitted a safety report have not experienced any serious events that led to anyone being killed or seriously injured.

Apart from the CSIs, the safety reports include information on:

- The safety targets of the operations
- Actions taken with a view to increasing the level of safety
- Description of the system audits carried out

D.1.1.1 Safety targets

The operators that have railway operations as their main activity have all specified their safety targets. Of all the safety reports received, 93 operators out of 139 specified their safety targets (67%). Some of the reporting undertakings have specified a number of different safety targets while others have specified a single one. Municipalities often have general targets for their operations but not targets broken down for the infrastructure they manage and the majority of them have therefore not reported safety targets.
The targets provided are often expressed in terms of no-one being killed or seriously injured through the organisation's own activities. One of the reporting railway undertakings engaged in passenger transport has carried out the following measures (besides ongoing measures li nked to

investigative results) to achieve the target: door safety analysis, fire analysis and MTO analysis. The same railway undertaking also has the target that 'It must be safe to go by train', which is followed up via the undertaking's safety management system. One of the targets of another railway undertaking which transports goods is for social bodies and authorities to perceive it as Sweden's safest goods carrier. Measures aimed at achieving this include the development of interactive traffic safety training courses, the creation of an editorial board and routines for the regular publication of information sheets for providing feedback on traffic safety measures to staff and the development of systematic follow-up of improvement measures decided upon.
A number of undertakings have improved deficiency reporting as one of their safety targets, and measures for achieving this target include feedback to staff. One undertaking whose targets include not having anyone under the influence of alcohol or drugs has introduced an alcohol ignition lock in its locomotives.
The state infrastructure manager has, as part of its measures to enhance safety, stated that 49 level crossings on the state railway network were scrapped or closed during 2008 and that 'E-tam' IT support has been introduced on train dispatch sections, for commissioning in 2009. The state infrastructure manager sponsors research into suicides and suicide prevention on railways at Karlstad University. According to the infrastructure manager, the work on preventive measures to prevent unauthorised track access and impacts with people is continuing via initiatives in the form of improving visibility, information work and camera surveillance in combination with guard initiatives. During the year, the state-owned infrastructure manager also completed the installation of ATC equipment at the stations in Borlänge and Gävle.
An example of an area in which undertakings collaborate is joint fact-finding on SPAD events. The answers in the safety reports also contain examples of quantitative targets such as a reduction in the number of accidents costing more than SEK 100 000 to 8.

D.1.1.2 Action plans with safety-enhancing activities

Of the safety reports received, 35% of operators indicated that they have taken safety-enhancing measures due to an occurrence or incident or as preventive measures, without any serious consequence necessarily being associated with the occurrence. Most reported more than one safety-enhancing activity. Less serious occurrences, such as incidents and events with an effect that was not as serious as it could have been, have also led to implementation of safety-enhancing activities. Several of the operators have implemented safety-enhancing activities for preventive purposes, such as improving deficiency reporting. Table 4 below shows some examples of safety-enhancing activities implemented by operators and the reason for doing so.

Reason for the activity	Consequence or potential consequence	Safety-enhancing activity
Accident involving securing of freight, container lost.	Accident involving securing of freight, possible collision between trains.	The railway undertaking must follow up function checks after loading SECU boxes in all locations within production areas that handle these containers.
Accident involving securing of freight, log lost.	Possible damage from log when it lands.	Major work has been started between the railway undertaking and the freight undertaking to raise the quality of loading.

Reason for the activity	Consequence or potential consequence	Safety-enhancing activity
Ensuring that the individual can apply the knowledge required to be able to carry out the work in a manner that is safe for traffic.	Risk of serious accidents if staff do not have adequate knowledge.	A new system and routines for following up staff in traffic safety jobs was introduced on 1 October 2008. The system is to be evaluated in late summer 2009.
Door opening other than at platforms.	Passengers may fall out.	More information for drivers and guards. New routines are being planned.
Unauthorised SPADs.	Risk of collision.	Close monitoring. New routines have been introduced with a view to improving drivers' concentration on visibility ahead.
Negative trend with increased number of shunting accidents.	Risk of harm to people, the environment or property.	MTO analysis was carried out during 2008. The intention is to go through the report with the production areas concerned in 2009 and, based on this, formulate an action plan and implement improvement measures.

Table 4: Examples of safety-enhancing activities reported by operators

Table 5 shows examples of events which caused the state-owned infrastructure manager to implement safety-enhancing measures. The state-owned infrastructure manager has written in its report that whereas traffic safety work has for many years focused on level-crossing measures, it is now more diversified and aimed at measures to prevent people from being hit as well as various safety-enhancing measures in the building of infrastructure. Besides safety-enhancing activities, the state-owned infrastructure manager has, in response to events that occurred in 2008, reported ongoing activities initiated by serious accidents and incidents that occurred several years ago.

Reason for the activity (e.g. type of event and brief description)	Consequence/ potential consequence	Safety-enhancing activity
Ekträsk, 29 March 2005. An empty goods train collided with an HGV trailer loaded with excavators which had become stuck on the level crossing. The train driver jumped from the train before the collision and was seriously injured. The train	Could have had even more serious consequences.	Following inspection of level-crossings for deficient road profiles, a number have been rebuilt and fitted with increased protection.

and 3-4 carriages were derailed, causing major damage to the track and overhead lines.		
Landslide at Ånn on 30 July 2006. Railway and road embankments undermined by unusually large amount of water. Railway embankment collapsed immediately behind a passenger train.	Could have had very serious consequences.	The Swedish Rail Administration has revised and tested the Swedish Road Administration's risk analysis methods. For 2010/2011, extra resources have been set aside for drainage systems.
Accident in Hok in 2003 (collision on a monitored stretch of track). A goods train was let out into the path of an oncoming train, colliding with it at stand-still at the platform.	Could have had very serious consequences.	Reinforcement of the system for the dispatch of trains through forced MobiSIR, electronic dispatch journal and ERTMS regional.
LPG train accident at Borlänge, in 2000. Goods train exceeding line speed, derailed in a switch curve.	Could have had very serious consequences.	Continued elimination of ATC islands.
Heat and unintended braking on various occasions, can lead to derailment on the line at high speeds.	Could have had very serious consequences.	More and better detectors.
Derailment of steel train with 10 carriages between Aspeå-Stormyran on 4 June 2008. Caused by buckling.	Could have had very serious consequences.	Project ongoing concerning buckling problems.
Two unauthorised SPADs on 9 June 2008, at Hillared-Limmared and Bryngenäs.	Could have had very serious consequences.	Review with all operations personnel and started overhaul of routines.
Near collision at Torne marsh on 29 July 2008.	Could have had very serious consequences.	Misconnection in signalling system leads to overhaul of decision-making arrangements in connection with signalling work.

Table 5: Events that triggered safety-enhancing activities of a more national nature by the state-owned infrastructure manager

D.2 Common safety indicators

This section presents observations on the common safety indicators (CSIs). In principle, CSIs should be presented as an average value based on values for five years. Since 2009 is only the third year information has been collected in this way, the indicators for 2008 are presented as an average based on the value for three years (2008, 2007 and 2006). The CSIs consist of data on accidents and deficiencies which have occurred set against the number of train kilometres or, in certain cases, passenger kilometres. Definitions used for the information collected are specified in Chapter J.
In most cases, the definitions used in the Safety Directive were used, except in certain cases where national definitions were used, as shown in the table in Annex C. Some basic information on the rail system's volume of traffic, track lengths and level crossings were also collected for the purposes of calculating safety indicators. All data collected are shown in Annex C.
As some infrastructure managers and railway undertakings are exempt from submitting safety reports (see section B.2.1), the indicators are not a measure of all railways in Sweden. For example, operations on local and regional rail networks that are independent and only intended 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 SIKA's official statistics publication, *Bantrafikskador*[12].

D.2.1 Accidents

In 2008, 46 (56, 46) accidents occurred which required reporting in accordance with Annex I to the Safety Directive[13]. The figures in parentheses relate to 2007 and 2006 respectively. Where three figures are shown in parentheses, the first relates to 2008, the second to 2007 and the third to 2006.
In short, accidents involving railway vehicles in motion resulting in the death or serious injury of at least one person at a cost of more than SEK 1.4 million or in the complete blockage of traffic for at least six hours are included in these figures.
One indicator calculated is the number of accidents per million train kilometres. The average for 2006, 2007 and 2008 is 0.37 accidents per million train kilometres. The volume of traffic has increased; in 2008, around 138 million train kilometres were travelled[14].

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

[13] Accidents in which at least one rail-borne vehicle in motion was involved and in which at least one person was killed or seriously injured, or in which damage to material, tracks or other installations resulted in costs of at least fifty thousand euros. Accidents having significant consequences for the environment or which significantly delay rail traffic are also accidents that must be reported. Incidents of suicides are excluded. See definitions, Annex F.

[14] Somewhat unreliable data, based on the information submitted by the railway undertakings; independent networks, such as Roslagsbanan and Saltsjöbanan, are not included.

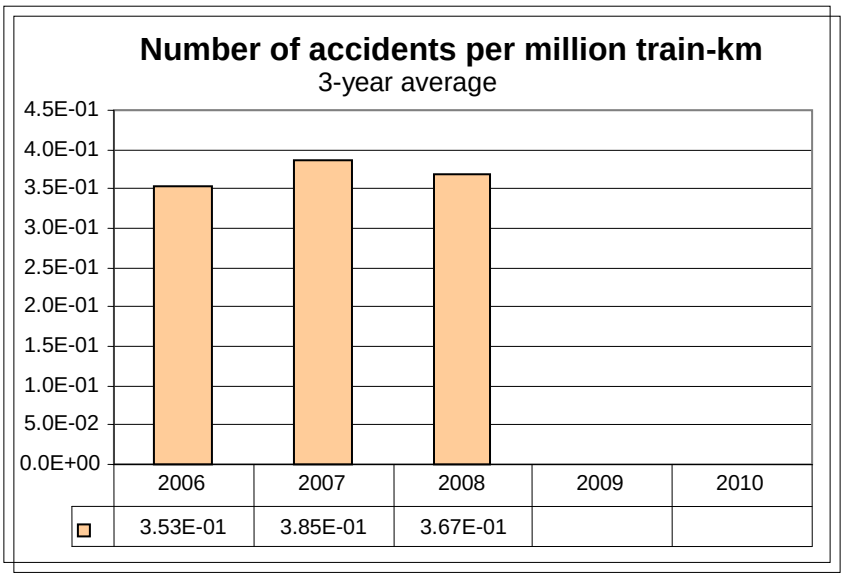

Figure 3: Diagram of number of accidents per million train-km.

Accidents are subdivided into the following accident categories: train collisions, train derailments, level-crossing accidents, accidents to persons caused by rolling stock in motion, fires in rolling stock and others.

The accident categories with the greatest numbers of accidents reported in 2008 are train derailments (14 in 2008, 11 in 2007, 5 in 2006) and accidents to persons caused by rolling stock in motion (13, 20, 16). The fact that the number of train derailments was higher in 2008 and 2007 than in 2006 may be due to the fact that the term ‘significant traffic disruption’ was new in the reporting for 2006 and is now more established. All 14 train derailments reported for 2008 were reported because of cost and/or significant traffic disruption. None of the train derailments were reported owing to people being injured. No passengers have been killed by a derailment or collision since 1990. Several of the accidents classified as ‘others’ also involve collisions and derailments but involved shunting movements. The train derailments (14, 11, 5), train collisions (4, 1, 3), fires (3, 4, 3) and other accidents (6, 6, 6) reported were in most cases reported due to their serious consequences in terms of the cost of damage and/or major traffic disruption. They did not, however, lead to anyone being killed.

If the last three years together instead are examined, the commonest categories are level-crossing accidents (6, 14, 13) and accidents to persons. Accidents reported as accidents to persons and level-crossing accidents have in most cases led to deaths or serious injuries. These accidents are mainly due to two factors. Level-crossing accidents are caused by road users who do not notice an approaching train or the crossing protection system’s danger signals. Accidents to persons caused by rolling stock in motion are mainly due to unauthorised persons on the track. Besides these accidents, in 2008 there were also 71 (78, 68) suicide attempts, which resulted in death or serious injury.

D.2.2 People killed and seriously injured

This group of indicators shows the number of people killed and seriously injured. In 2008, 13 (23.16) people died and 6 (14.13) were seriously injured. The indicator ‘people killed per million train kilometres’ was 0.13 on average for 2008, 2007 and 2006. This means that

1.3 persons were killed for every 10 million train kilometres travelled. No passengers or employees were killed during the year.

Figure 4: Indicator 'number of people killed per million train kilometres'

The indicator 'number of people seriously injured per million train kilometres' is 0.08 per million train kilometres, as shown by the graph below.

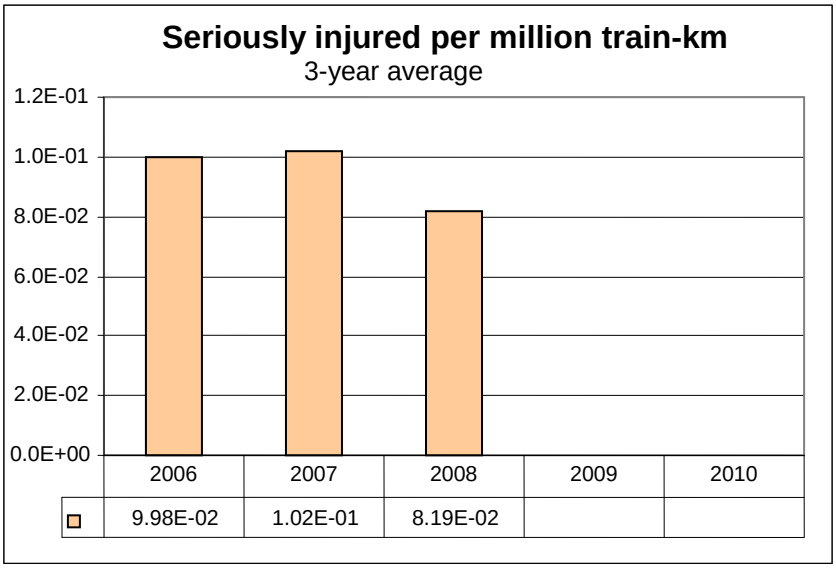

Figure 5: Indicator 'number of people seriously injured per million train kilometres'

In 2008, 6 (14, 13) people were seriously injured. There is some uncertainty about this figure because Sweden has previously used a national definition to determine when a person should be considered seriously injured. In accordance with this national definition, a person is seriously injured if the injury led to at least 14 days' sick leave. The definition of people seriously injured to be used for the indicators (24 hours of hospital treatment) has been introduced into the Swedish Rail Agency's regulations (JvSFS 2008:1) on accident and safety reporting, which came into force on 1 July 2008.

In the level-crossing accidents, it was the users of the level crossing, i.e. road users, that were killed (4, 9, 7) or seriously injured (1, 8, 5). Accidents to persons mainly involved unauthorised persons on the track being struck or run over. In these accidents, 9 (14, 9) persons were killed and 4 (6, 7) were seriously injured. No passengers or employees were killed or seriously injured during derailments, fires, level-crossing accidents or collisions. Two cases of serious injury on getting into railway vehicles in motion were reported in 2008, and one case of a fall from a railway carriage was reported. One case of employee injury in a shunting collision was reported. It should be noted that an accident to a person where that person is struck or run over by a train is often fatal. In level-crossing accidents, however, it is often a matter of chance whether these will result in no personal injury (for example when a vehicle's interior is left undamaged in the accident) or in some degree of personal injury.

D.2.3 Technical safety of infrastructure

This group of indicators shows the percentage of tracks fitted with ATP (Automatic Train Protection), e.g. ATC, and the percentage of level crossings with automatic or manual crossing protection systems. Approximately 72% of tracks have ATP. The majority of traffic is therefore on tracks which are extremely safe in technical terms.
The state-owned infrastructure manager has for several years worked actively on improving the safety of level crossings, resulting in a downward trend in the number of serious level-crossing accidents. One of the measures used was to remove level crossings without an active crossing protection system and replace them with level crossings with an automatic crossing protection system. Of all level crossings, around 31% are fitted with some kind of crossing protection system.

Type of level crossing	Number
Number of level crossings with automatic acoustic and/or visual systems that warn level-crossing users (1)	984
Number of level crossings with automatic barrier systems (whole or half barriers, including gates or similar) that warn/protect level-crossing users (2)	150
Number of level crossings with automatic systems comprising both 1 and 2	2 214
Number of level crossings with both 1 and 2 that are also equipped with obstacle detectors	80
Number of level crossings with manually controlled acoustic and/or visual systems that warn level-crossing users (3)	79
Number of level crossings with manually controlled barrier systems, including gates or similar that warn/protect level-crossing users (4)	9
Number of level crossings with manually controlled systems comprising both 3 and 4	64
Number of passive level crossings	7 772
Total:	11 352

Table 6: Breakdown of level crossings according to type of crossing protection system

Type of level crossing	Number
Number of level crossings with automatic acoustic and/or visual systems that warn level-crossing users (1)	764
Number of level crossings with automatic barrier systems (whole or half barriers, including gates or similar) that warn/protect level-crossing users (2)	0
Number of level crossings with automatic systems comprising both 1 and 2	2 193
Number of level crossings with both 1 and 2 that are also equipped with obstacle detectors	80
Number of level crossings with manually controlled acoustic and/or visual systems that warn level-crossing users (3)	14
Number of level crossings with manually controlled barrier systems, including gates or similar that warn/protect level-crossing users (4)	0
Number of level crossings with manually controlled systems comprising both 3 and 4	54
Number of passive level crossings	5 988
Total:	9 093

Table 7: Breakdown of level crossings on the state-owned infrastructure according to type of crossing protection system

D.2.4 Deficiencies

This indicator combines all reported deficiencies relating to broken rails, track geometry faults, broken axles and wheels, unauthorised SPADs (signals passed at danger) and wrong-side signalling failures. In 2008, 620 (517, 530) deficiencies were reported and the indicator gives a value of 4.14 deficiencies per million train kilometres as an average for 2008, 2007 2006.

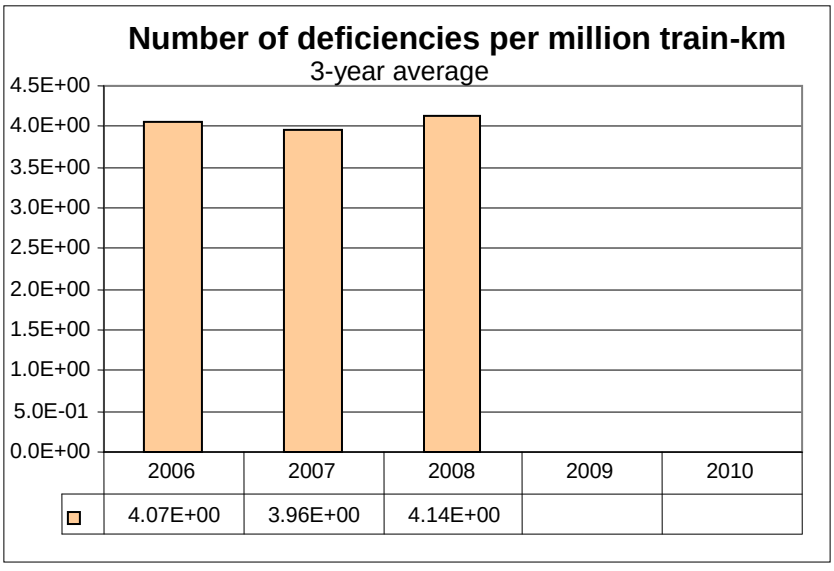

Figure 6: Indicator of number of deficiencies per million train-km

As in the previous years, two types of deficiency clearly dominate in this category of events: 301 (217, 187) SPADs and 218 (187, 241) broken rails. Another large group is track geometry faults, with 87 (102, 79) deficiencies reported. It should be noted that this report includes all incidents involving broken rails, i.e. also those on railway sidings. The number of broken rails on railway tracks is therefore lower. These events are reported in this way because the reporting requirement also includes broken rails on railway sidings. It should also be noted that the number of other deficiencies was relatively low. There were 12 (6, 6) wrong-side signalling failures, 1 case of broken wheels (2, 8), and 1 case of broken axles (3, 9).
The number of unreported cases is unclear because not all deficiencies are reported when they occur. This is probably because not all deficiencies are reported. A possible reason for this is that a deficiency is not always as clear-cut as an accident, with the result that those involved do not always think of reporting a SPAD, for example. However, it is important to continue to monitor the deficiencies as they can presage serious accidents. As the basis is unreliable, an increased number of reported deficiencies may be just as much the result of better methods for recording deficiencies as of an actual increase in deficiencies.

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

This indicator is an attempt to measure the total costs arising in the rail system as a consequence of accidents. Costs are expressed in million euro[15] and are related to the number of train kilometres travelled (in million train kilometres).

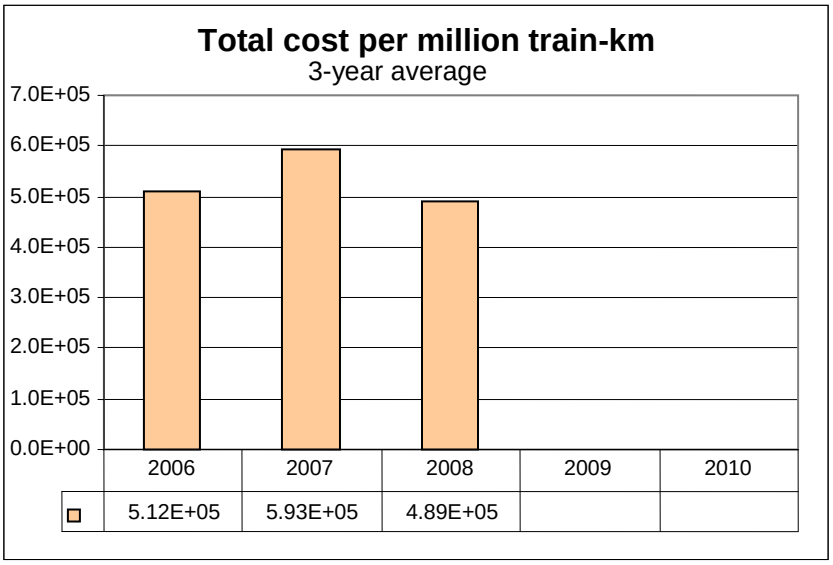

Figure 7: Indicator for cost (euro) caused by accidents per million train kilometres

The costs included in the figure above are for costs relating to death and serious injury, to the replacement or repair of railway infrastructure and rolling stock, to delays, disruption and re-routing of traffic, including extra costs for staff and loss of future revenue. See definitions in Chapter J.

[15] For calculating costs in euro, an exchange rate of EUR 1 = SEK 9.30 was used for 2006, 2007 and 2008 where reporting railway undertakings and infrastructure managers quote their costs in SEK.

Information on costs for persons killed and seriously injured is based on values calculated for deaths and serious injuries from a socioeconomic perspective, produced by SIKA in PM 2008:3 Socioeconomic principles and calculation values for the transport sector: ASEK 4 *2005:16.* The calculated values are then multiplied by the number of persons killed and seriously injured.

Information on the costs of replacement or repair of railway infrastructure and rolling stock, costs of delays, disruption and rerouting of traffic, including extra costs for staff and loss of future revenue, is based on the reporting operators' actual costs. The reporting operators have stated that this information is very unreliable. ERA has developed new methods for reporting costs that will be adopted for reporting as from next year. The new methods are based on society's costs instead of the costs to railway undertakings and infrastructure managers, as with the current method. As the information reported by the current method is stated as being unreliable, it is difficult to draw any conclusions about the information reported.

The proportion of working hours lost relative to the total number of working hours is an indicator that will not be reported from next year. This is because some Member States find it difficult to get hold of this information. So far as Sweden is concerned, operators with railway operations as an ancillary activity report a disproportionately large number of working hours, e.g. a major industry with one railway track devotes only a fraction of its working hours to railway operations but is obliged to report the total working time. As a result, indicators based on information concerning working hours will not be comparable to those from operators with railway operations as their main activity. The proportion of working hours lost as a result of accidents in 2008 is less than 0.0001% of total working hours, but it should be noted that not all operators have reported the total number of hours worked and not all have had information on the number of working hours lost as a result of accidents.

D.2.6 Safety management

The key ratio used is that between the number of system audits planned by the operators, namely 177 (194), and the number performed, namely 156 (188), in 2008. 102 operators have reported that they planned and carried out system audits during 2008, compared with 40 in the previous year. The interpretation of a system audit varies, however. A higher level of audits has been conducted in accordance with the definition of the Safety Directive[16]. Examples of audit areas reported include the following: overhaul of handling of safety targets for the operational staff groups, internal revision of all regulations to be revised during 2008, monitoring of the use of warning jackets in track areas, integrated internal audits covering quality, the environment, the working environment and safety, and follow-up of system audits conducted previously. However, a number of the operators' audits have principally consisted of planned inspections.

D.3 Result of safety recommendations

During 2008, the Swedish Rail Agency worked with recommendations from the National Board of Accident Investigation concerning a collision/derailment in Ledsgård on 28 February 2005.

[16] See Section J.

The recommendations from the National Board of Accident Investigation were as follows:

1. To endeavour to minimise the risk of individual errors in determining a train's braking capacity, for example by introducing checklists or a separate record confirming that the position of the switchover handle has been checked (RJ 2007:2 R1).
2. To introduce requirements for monitoring of safety personnel, both soon after the completion of initial training or if work tasks have been changed and also regularly in service (RJ 2007:2 R2).
3. To seek to improve the planning and monitoring of production undertaken by operators (RJ 2007:2 R3).
4. To endeavour to ensure that infrastructure managers have safety management procedures which minimise the risk of design errors similar to those described in this report (RJ 2007:2 R4).
5. To consider whether overarching principles and standards need to be formulated for safety track, focussing on how vehicles should brake safely in view of the risk of damage to both vehicles and the environment behind the track termination (RJ 2007:2 R5).

The Swedish Rail Agency's measures with reference to the recommendations are as follows:

1. Besides the basic requirement laid down in the Swedish Rail Agency's regulations (JvSFS 2006:1) on the approval of subsystems within railways, etc., this recommendation is, in the Swedish Rail Agency's view, fulfilled by the testing of braking ability imposed on railway undertakings in an order issued by the Swedish Rail Agency (8 June 2007, JvS reference number 2007-702/62, see annex). The order entails requirements for the use of ATC during compulsory testing of braking ability to be included in the railway undertakings' own rules.

   The Swedish Rail Agency has also stipulated the following rules on brake testing in Annex 11, 'Brakes', to JvSFS 2008:7:

   Deceleration testing should be carried out in a suitable place on a horizontal rail after the train or goods transporter has left a place where one of the following has occurred:
   • brake testing has been carried out
   • the composition has been altered
   • brake category or load changeover setting has been altered
   • the brakes have been turned off for some vehicles
   • there has been a change of train driver.
   Deceleration testing should also be carried out if the driver feels that the train or goods transporter has considerably less braking ability than it should or if prompted to do so by operating conditions, such as temperature or weather conditions.

   Compliance is checked by the Swedish Rail Agency as part of ordinary supervisory activities, including by perusing operators' current manuals and routines.

2. The Swedish Rail Agency considers the existing rules governing follow-up in connection with training, in accordance with section 7 c of the Swedish Rail Agency's regulations (JvSFS 2007:1) on safety management systems and other safety regulations for railway undertakings to be adequate.
   The Swedish Rail Agency monitors compliance with these rules as part of ordinary supervisory activities and in work on planning operations.

3. The Swedish Rail Agency's regulations (JvSFS 2007:1) on safety management systems and other safety regulations for railway undertakings contain regulations concerning the requirements for safety management systems at relevant operators. The requirements also cover the management described in the recommendation and are deemed adequate by the Swedish Rail Agency. Compliance is checked as part of the Swedish Rail Agency's ordinary supervisory activities. The Swedish Rail Agency's activities include a continuous pursuit of improvements in authorisation holders' management.

4. The actual building of railways and their design are not part of the Swedish Rail Agency's supervisory remit (see the Act (1995:1649) on Railway Construction). The Swedish Rail Agency considers that this is well regulated for railways in the Swedish Rail Administration's regulations. The latter stipulate, among other things, that the designer's work be inspected by independent inspectors. Both the designer's and the inspector's work are assessed by an independent assessor, and lastly the Swedish Rail Agency (in approving the infrastructure itself) examines the designer's, the inspector's and the assessor's documents in accordance with the approval pursuant to the Swedish Rail Agency's regulations (JvSFS 2006:1) on the approval of railway subsystems, etc.

5. The Swedish Rail Agency will, in its ongoing work with new technical regulations, also take account of this recommendation.

E IMPORTANT CHANGES IN LEGISLATION AND REGULATIONS

During 2008, no changes were made to the Swedish Railway Act (2004:519) or to the Railway Ordinance (2004:526). The Railway Safety Directive (as worded before the amendments via Directive 2008/57/EC and Directive 2008/110/EC) was implemented into Swedish law on 1 July 2007. Regulations on safety reporting (see paragraph below) which further clarify the requirement to draw up safety reports were issued during 2008.

The Swedish Rail Agency regulations (JvSFS 2008:1) on accident and safety reporting were adopted on 9 May 2008 and came into force on 1 July 2008. The regulations transpose the safety reporting provisions in Article 9.4 of Directive 2004/49/EC (the Railway Safety Directive) and in principle represent a clarification of Annex 1 to the Railway Safety Directive. To make it easier for railway undertakings and infrastructure managers, the regulations also contain certain provisions concerning direct accident reporting and reporting required under Regulation (EC) No 91/2003 of the European Parliament and of the Council on rail transport statistics.

The Swedish Rail Agency's traffic regulations (JvSFS 2008:7) and the Swedish Rail Agency's regulations (JvSFS 2008:8) on railway safety regulations relating to traffic and track work were adopted on 17 June 2008 and came into force on 31 May 2009. With the entry into force of the traffic regulations, the same traffic rules apply throughout Sweden's railway infrastructure. In the past, each infrastructure manager had in principle its own traffic rules that the railway undertakings were forced to follow.

The Swedish Rail Agency's regulations (JvSFS 2008:13) on EC checks, etc. were adopted on 29 August 2008 and came into force on 2 September 2008. The regulations transpose provisions concerning the procedure for the verification of subsystems carried out by a notified body ('EC verification') in Directives 96/48/EC and 2001/16/EC (both amended by Directive 2007/32/EC).

During 2008, a number of regulations transposing Commission decisions on technical specifications for interoperability (TSI) were also adopted. The regulations do not contain any relevant provisions concerning technical specifications, but transpose the Commission's decisions. See also Annex D.

Miscellaneous

In December 2008, a number of name change regulations (JvSFS 2008:14–JVSFS 2008:34) were adopted with reference to the Swedish Rail Agency's changeover to the Swedish Transport Agency. The regulations do not contain any relevant changes, but merely changes of name from the Swedish Rail Agency to the Swedish Transport Agency.

F DEVELOPMENT OF SAFETY CERTIFICATION AND 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 Railway Act, which came into force on 1 July 2007. The requirements can be found in Chapter 3, Section 3, and Chapter 3, Section 7 of the Railway Act (2004:519).

The Swedish Transport Agency is currently investigating what procedure applies for the review of 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. Starting date for issuing safety certificates in accordance with Article 10 of Directive 2004/49/EC was 1 July 2007.

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

1.3 National safety rules are available electronically on the Swedish Transport Agency's website, in the manual sent out free of charge to all holders of authorisations and in the Swedish Code of Statutes (SFS).

F.2 Numerical data

The Railway Safety Directive came into force in Sweden on 1 July 2007. Annex E contains the relevant numerical data.

F.3 Procedural aspects

3.1 Queries, Part A safety certificates

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

3.1.2 Main reasons if the average processing time for Part A safety certificate applications was more than 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 undertaking that has been certified 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 the Part A safety certificate valid Community-wide.

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

3.1.6 Summarise the problems with using the harmonised formats for Part A safety certificates.

3.1.7 Summarise the common problems/difficulties for the NSA in application procedures for Part A safety certificates.

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?

Answers
3.1.1 Change in organisation.
3.1.2 The average processing time was not more than the four months specified.
3.1.3 - 3.1.4 No comment needed.
3.1.5 The Swedish Rail Agency's operations were funded from appropriations. The operations of the Swedish Transport Agency's Railways Department are funded entirely from appropriations, but funding from charges is being considered for important elements of the Railways Department's operations with the aim of creating similar funding models for the exercise of authority concerning the various modes of transport.
3.1.6 - 3.1.8 The problems have been that few railway undertakings understand the differences 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.
3.1.9 A separate structure for complaints or views on this has not been introduced. However, there is always scope for lodging complaints about the authority's decisions. For larger railway undertakings, there are frequent company meetings.

3.2 Queries, Part B safety certificates
3.2.1 Reasons for updating/amending Part B safety authorisations (e.g. variation in type of service, extent of traffic, type of vehicle, category of staff, significant changes to operating procedures, etc.).

3.2.2 Main reasons if the average processing time for Part B safety certificate applications was more than 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 with using the harmonised formats for Part B safety certificates.

3.2.5 Summarise the common problems/difficulties for the NSA in application procedures for Part B safety certificates.

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?

Answers
3.2.1 Two amended Part B authorisations; one amendment arose from changes in the volume of traffic, and the other relating to organisational changes.
3.2.2 The average processing time was not more than the four months specified.
3.2.3 The Swedish Rail Agency's operations were funded from appropriations. The operations of the Swedish Transport Agency's Railways Department are funded entirely from appropriations, but funding from charges is being considered for important elements of the Railways Department's operations with the aim of creating similar funding models for the exercise of authority concerning the various modes of transport.
3.2.4. Different interpretations of what the rules 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 on 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 rail installations, new signalling systems, significant changes to operating procedures).

3.3.2 Main reasons if the average processing time for safety authorisation applications was more than 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 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 certificates?
(Yes, No, Level of fee).

Answers
3.3.1 New track system (largest IM), amended organisation number (smaller IM), change in competence within management group (smaller IM).
3.3.2 The average processing time was not more than the four months specified.
3.3.3 Nothing in particular.
3.3.4 Nothing in particular other than the smaller infrastructure managers consider it bureaucratic.
3.3.5 Complaints can be filed on all decisions. For the larger infrastructure managers, there are frequent company meetings.

3.3.6. The Swedish Rail Agency's operations were funded from appropriations. The operations of the Swedish Transport Agency's Railways Department are funded entirely from appropriations, but funding from charges is being considered for important elements of the Railways Department's operations with the aim of creating similar funding models for the exercise of authority concerning the various modes of transport.

G SAFETY SUPERVISION

An overall aim of the Swedish Rail Agency is that all safety supervision should preferably be conducted in the form of safety audits whose purpose is to examine the operators' safety management systems.
In order to identify which operators should be inspected, the methodology has increasingly turned towards a risk perspective. The following two criteria are indicative of how supervision activities are conducted:

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

Furthermore, the aim is to conduct preliminary planning of supervision activities. Planning is re-evaluated every three months on the basis of events which have occurred. Planning now also allows for the quick launch of renewed supervision, if an event indicates the need for this. Supervision 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 supervisory operations.

During 2009, the Swedish Transport Agency started mapping out how the supervision of roads, railways, shipping and aviation is performed. This may lead to new methods.

All audits were carried out by the Swedish Rail Agency's own staff. According to the documentation for the 2008 annual report, approximately 14 administrators (7.3 full-time equivalents) handle safety supervision. An average of 11 680 working hours went into the process of safety supervision in 2008. This corresponds to approximately 13% of the Swedish Rail Agency's total capacity (administrative staff are included in the total workforce). Supervision cost SEK 5 857 000 (approximately EUR 629 784) in 2008.

Number of inspections carried out by the Swedish Rail Agency

		Part A safety certificates issued	**Part B safety certificates issued**	**Safety authorisations issued**	**Other activities (specified)**
3. Number of inspections by RU/IM during 2008	**Planned**	**0**	**2 (deficiencies found on vehicles in connection with supervision of dangerous goods)**	**0**	**0**
	Unplanned (not previously notified to RU/IM)	**0**	**0**	**0**	**0**
	Carried out	**0**	**2 (deficiencies found on vehicles in connection with**	**0**	**0**

			supervision of dangerous goods)		

Table 8: Number of inspections planned, unplanned and carried out in 2008.

A comparison between the number of inspections carried out and the number of inspections planned reveals that 2 were carried out and 2 were planned, a performance rate of 100%. Most of the Swedish Rail Agency's supervision is of the audit type. The Swedish Rail Agency used four types of audit, as the Swedish Transport Agency's Railways Department also does:

- R1 comprises a check by letter on part of SMS (the safety management system)
- R2 comprises interviews with management and verification with operational personnel focussing on one or more parts of SMS
- R3 comprises interviews with management and verification with operational personnel focussing on the whole SMS
- FM is a meeting for exchanging information based on SMS

Number of audits carried out by the Swedish Rail Agency

		Part A safety certificates issued	**Part B safety certificates issued**	**Safety authorisations issued**	**Other activities (specify)**
4. Number of audits by RU/IM during 2008	**Planned**	**29** of which R1: 3 R2: 17 R3: 8 FM: 1	**29** of which R1: 3 R2: 17 R3: 8 FM: 1	**80** of which R1: 67 R2: 8 R3: 1 FM: 4	-
	Carried out	**29** of which R1: 3 R2: 17 R3: 8 FM: 1	**29** of which R1: 3 R2: 17 R3: 8 FM: 1	**86** of which R1: 71 R2: 8 R3: 3 FM: 4	-

Table 9: Number of audits planned and carried out in 2008

The audits performed on safety certificate A have at the same time been performed on safety certificate B. With regard to audits performed on safety authorisations issued, most were planned in advance, but some were performed after an accident or incident or after the Swedish Rail Agency had in some other way obtained information that a deficiency may arise. 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.

		Number
RESULTS	Bans	2
	Orders	16
	Prosecutions	0

Table 10: Summary of results from supervision activities in 2008

As can be seen in Table 10, supervision activities carried out in 2008 resulted in 18 bans and orders, with orders as the most typical result from supervision activities. Railway undertakings' and infrastructure managers' safety management systems essentially work well. The most common deficiencies uncovered by supervision activities concerning infrastructure managers are that measures are not taken at the right time following an inspection of the track system. Another common deficiency is that the traffic safety instructions of undertakings are not updated. A number of cases of wrongly designed signalling systems were also discovered in 2008. With regard to railway undertakings, deficiencies have been found in the use of the undertakings' safety management systems. Furthermore, the securing of timber consignments is a persistent problem. The Swedish Rail Agency/the Swedish Transport Agency has embarked on action to overcome this problem.

H REPORTING OF THE USE OF COMMON SAFETY METHODS

Nothing to report for 2008. (The reporting is voluntary up to 2010).

I CONCLUSIONS AND PRIORITIES

The common safety indicators show that relatively few accidents in which people are killed or suffer serious injuries take place. With regard to passengers, none was killed and 0.0002 suffered serious injuries per million passenger kilometres. With regard to others than passengers, 0.21 was killed or suffered serious injury per million train kilometres excluding suicide (0.73 including suicide). The number of accidents reported for 2008 is ten fewer than for 2007 and the same as for 2006. The category for which most accidents were reported based on cost and/or extensive traffic disruption is train derailments.

In summary, it can be stated that there have been no major changes in accident statistics over the three years for which reporting has been going on. The statistical information indicates that accidents in which people are seriously injured or killed are classified as level-crossing accidents and accidents to persons. Both types of accident involve the rail system encountering other parts of society. The number of reported level-crossing accidents resulting in serious injury was lower in 2008 than in the previous two years, but it is not possible to infer whether this is a random variation or an actual fall until several more years have passed. Looking further back in time, however, level-crossing accidents have fallen in number. Cooperation within the industry on cutting the number of level-crossing accidents needs to continue and its effectiveness needs to be boosted. With this in mind, efforts are being made to develop a network bringing together safety authorities, infrastructure managers and affected trade associations within the road and rail industries.

Some of the information sought in the safety reports is relatively new for operators, and a greater number of reported deficiencies entailing signals passed at danger, broken rails and signal failures may therefore just as well indicate an improved ability to detect deficiencies as an actual increase in the number of deficiencies.

The year's reporting shows that a greater proportion of the reporting operators have planned and conducted system audits. The Swedish Rail Agency issued more safety certificates and safety authorisations and exercised supervision in the form of, chiefly, audits in accordance with the Safety Directive.

In 2008, the Swedish Rail Agency decided on common traffic rules for the entire Swedish railway, which came into force in 2009. For the Swedish Transport Agency, which took over the Swedish Rail Agency's operations as from 1 January 2009, a challenge and priority is now to continue managing the regulations. The Swedish Transport Agency has drawn up an action programme covering the various forms of transport which aims to cut enterprises' administrative costs by virtue of State regulation by 25%. The work is now switching from mapping and planning to implementation.

With the Swedish Transport Agency's formation, a number of projects covering various forms of transport have also been launched, including a review of supervisory methods and an appraisal of current statistics production and future needs for statistics. In this respect, there is scope for the Swedish Transport Agency's Railways Department both to inspire and be inspired by the departments covering the other three forms of transport: shipping, aviation and road transport.

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 carried out by the police. The category of unauthorised track access includes events not yet classifiable as involving suicides or accidents. SIKA has been used as the source for calculated values for lives – see below for further details. The information on the Swedish Rail Agency's operations in 2008 has been taken from unit managers for the various units of the Swedish Transport Agency's Railways Department, internal registers and from supporting documents for the Swedish Rail Agency's annual report for 2008. The information on the Swedish Transport Agency has for the most part been taken from www.transportstyrelsen.se.

Definitions

The definitions below are mostly taken from the Swedish Rail Agency's guidance on the Swedish Rail Agency's regulations (JvSFS 2008:1) on accident and safety reporting for railways. The guidance is also available on the Swedish Transport Agency's website at www.transportstyrelsen.se.

Accidents included in the report

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

  Note: 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: in relation to serious injury, in previous years (2006 and part of 2007) the national definition of 14 days' sick leave was used. In the case of 2008, there is some uncertainty in the data because precise details of hospitalisation times are not always held by the police authorities.
- railway vehicles, the rail infrastructure, the environment or property not being transported by railway vehicle suffers such damage that the costs for this are at least EUR 150 000 (approximately SEK 1.4 million)
- rail traffic on the track 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 compared with the accident statistics supplied to Eurostat

As certain infrastructure managers and railway undertakings are exempt from supplying safety reports (see Section B3), the indicators do not provide a measure for all railways in Sweden. For example, operations on local and regional rail networks that are independent and intended only

for passenger or museum services, such as Saltsjöbanan and Roslagbanan, have been excluded from this report. The figures for people killed and seriously injured therefore differ from the figures that Sweden supplies each year to Eurostat and from the figures published annually in SIKA's official statistics publication *Bantrafikskador*[17]. Another difference is that this report and the information that SIKA reports to Eurostat include shunting collisions and shunting derailments in other accidents. In the national figures that SIKA publishes in the report *Bantrafikskador*, shunting accidents are excluded.

More precisely:
In 2008, two people died in accidents to persons, two as a result of suicide and two people were seriously injured in accidents to persons. Level-crossing accidents were reported to SIKA/Eurostat but are not included in this report. In 2007, two people died in accidents to persons, one as a result of suicide and one person was seriously injured in a level-crossing accident. These were reported to SIKA/Eurostat but are not included in this report. The figures for 2006 have been adjusted in connection with the reporting for 2007 so that they are comparable with those for 2007. The following were therefore excluded for 2006: one person who died in an accident to persons, one as the result of suicide, two killed and three seriously injured in three level-crossing accidents and one other accident (impact during shunting) with costs of more than SEK 1.4 million.

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. (Regulation 1192/2003/EC adjusted to also include trains with a single locomotive.)
Note:
In this context, carriages being shunted according to timetable count as 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 impact.
Train collision refers to any type of collision between a train and another railway vehicle, e.g. between a train and

- the front part of another train
- the rear part of another train
- the part of another train that is within the clearance gauge
- a vehicle involved in a shunting movement

Train impact refers to collisions between a train and

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

Note:
A train collision leading to derailment is reported as a train collision. The category 'impact' also includes running over animals if this leads to a significant accident. A collision only between vehicles which are not run as trains is reported under the category of 'others'. Impact with an

[17] See Annex F for further details of the differences in the accident statistics.

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.
Note:
An event where the train returns to the rails is also reported if it leads to an accident with the consequences stated above. Derailments involving movements other than train movements are reported as 'others' 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 occurring when a train stops at an intermediate passenger interchange or during shunting at an intermediate passenger interchange should also 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.

Note: Fire also includes smoke production with a clearly defined core. Neither arson fires nor fires occurring during siding or shunting at marshalling 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 act to deliberately injure oneself resulting in death or serious injury; the Swedish Rail Agency checks the details with the police authority.

Level-crossing accident
An accident occurring on 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.
Note:
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.
Note:
The main types of accident in this category:

- *Collisions and derailments with locomotives 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 the train and who is not part of the train crew. When accidents are reported, persons boarding or alighting a moving train are also included in the category of 'passengers'. (Regulation 1192/2003/EC)
Note:
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, for example waiting for a train, 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 deficiencies

If any of the deficiencies result in an accident that must be reported, this is also reported as an accident. If, for example, a SPAD leads to a collision, this should be reported as 1 SPAD and 1 collision.

Unauthorised signal passed at danger (SPAD)
Event where a part or all of the train has without authority passed the reserved route's end of movement.
Note:
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 uncontrollably 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 rolling stock) leading to less restrictive signalling information than required.
Note:
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 CSIs relating to 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 deaths and serious injuries is based on calculated values for deaths and serious injuries from a socioeconomic perspective, produced by SIKA in PM 2008:3 Socioeconomic principles and calculation values for the transport sector: ASEK 4 *2005:16.* The calculated values are then multiplied by the number of deaths and serious injuries.
The information on costs of replacement or repair of railway infrastructure and rolling stock, costs of delays, disruption and rerouting of traffic, including extra costs for staff and loss of future revenue, is based on the reporting operators' actual costs. The reporting operators have stated that this information is very unreliable. ERA has developed new methods for reporting costs that will be adopted for reporting as from next year. The new methods are based on society's costs instead of the costs to railway undertakings and infrastructure managers, as with the current method. What is set out below applies, however, until further notice.
Indemnity or compensation recovered or considered to have been recovered from third parties such as motor vehicle owners involved in level-crossing accidents should be deducted from the costs reported by the operator. Compensation recovered through insurance policies held by the operator should not be deducted.
The general advice is to base calculations of the financial consequences on own actual costs. Default values for accident costs may be used as a basis for the operator's reporting.

Costs related to people killed and injured
Number of people killed multiplied by the recommended value for deaths in traffic.
Number of people seriously injured multiplied by the recommended value for people injured in traffic.
Calculation method including reference to source:

The figures are based on calculated values for deaths and injuries from a socioeconomic perspective, compiled by SIKA in PM 2008:3 Socioeconomic principles and calculation values for the transport sector: ASEK 4[18]. The calculated values are then multiplied by the number of people killed and seriously injured. The numbers of people seriously injured and killed are taken from the table in Annex C. The information for previous years has been updated so that it no longer includes people slightly injured as the latter are excluded in ERA's new proposal for Annex 1 to the Railway Safety Directive. The number of people slightly injured is based on the operators' safety reports. All figures on costs are converted into euro at an exchange rate of SEK 9.3 to EUR 1.

Compensation for loss of or damage to property of passengers, staff or third parties
The sum that, based on the operator's experience, has to be or was paid in compensation to passengers, staff or third parties due to their loss or damage owing to accidents.
Note:
This indicator is not included in the ERA templates for tables and diagrams and is therefore not included in the report.

Compensation for damage to the environment
The sum that, based on the operator's experience, must be or was paid for restoring a damaged area to its condition prior to a railway accident.
This indicator concerns accidents involving release of pollutants, both transported substances such as dangerous goods and other environmentally hazardous substances, for example fuel.
Note:
This indicator is not included in the ERA templates for tables and diagrams and is therefore not included in this report.

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 they were before an accident. The costs are estimated by the operator on the basis of their experience, and include any costs for renting rolling stock during the period a vehicle is unavailable due to an accident.

Costs for delays, disruption and rerouting of traffic, including extra costs for staff and loss of future revenue
Until further notice, this reporting is based on the costs that, on the basis of the operator's experience, the operator incurs for delays, rerouting and cancellation of traffic due to accidents.

This includes:

- compensation to passengers
- overtime worked by staff
- compensation to freight customers
- costs for replacement buses

[18] http://www.sika-institute.se/Templates/FileInfo.aspx?filepath=/Doclib/2008/PM/pm_2008_3.pdf, 30 September 2009.

- loss of revenue due to cancelled trains

Note:
Loss of revenue is only reported in these cases where it has not been possible to arrange replacement transport. For instance, if buses replaced trains, the costs for the replacement buses should be reported but not the loss of revenue.

Definitions relating to working hours

Total number of hours that should have been completed in the reporting year by own and contractors' staff
The number of working hours that, on the basis of the operator's experience, should have been completed by own and contractors' staff in all activities carried out by the operator during the year.

Number of working hours of own staff and staff of contractors lost as a result of them being injured in accidents
The number of working hours that, on the basis of the operator's experience, was lost due to absence from work of own and contractors' staff resulting from their injury in accidents.
Note:
Lost working hours should include hours absent from work. Assigning staff to other tasks as a result of an accident does not constitute lost working hours.

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. (Regulation 1192/2003/EC adjusted to also include trains with a single locomotive.)
Note:
In this context, carriages being shunted according to timetable count as a train.

Train kilometre
Unit of measure representing the movement of a train over one kilometre. The distance used is the distance actually run, if available, otherwise the standard network distance between the origin and destination should be used. Only the distance on Swedish territory should be taken into account. (Regulation 1192/2003/EC)

Train kilometre on track with an automatic train supervision system in service
Unit of measure representing the movement of a train over one kilometre of track equipped with an automatic train supervision system in service. An automatic train supervision 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 systems of this kind are used. An example of an automatic train supervision system is ATC.

Passenger kilometre
Unit of measure representing the transport of one passenger by rail over a distance of one

kilometre. Only the distance on Swedish territory should be taken into account. (Regulation 1192/2003/EC)

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

Kilometres of rail equipped with an automatic train supervision system in service
The length of track being operated with an automatic train supervision system in service. An automatic train supervision 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.

Total number of level crossings and the number of level crossings with a crossing protection system that automatically warns road users by means of sound, light or barriers
Level crossing = a crossing on the same level between a road[19] and a railway, assigned by the infrastructure manager and available to users of public or private roads.
Note:
Platform crossings are not considered as level crossings, nor are crossings used only by employees.

Definitions related to safety management

Some elements of the operators' safety management systems[20] and the results of certain activities related to safety management systems are described below. The elements described are safety targets, action plans and system audits. The operators must also report any deficiencies and faults discovered in relation to safety at railway operations and infrastructure management in general.

Safety targets
Indicate the long-term safety targets for the operation 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 is also indicated. If the targets have not been met or only partially met, the identified or suspected reason for this is indicated. Measures that are planned or have been carried out in order to achieve the targets that have not been met or only partially been met must also be indicated.

Action plans
Describe the action plans for safety-enhancing activities implemented and the reason for deciding on these safety-enhancing activities. Also describe the results of the action plans.
Describe the cause for implementing the safety-enhancing activities in the action plans. If, for example, an event has occurred that has led to the safety-enhancing activities, describe the event or events at a general level, e.g. the type of accident, incident, major fault or major deficiency, the circumstances surrounding the event(s) and the consequences that did occur or could have occurred and which are the reason for the safety-enhancing measures.

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[19] Public or private road or street, including footpaths and cycle paths.

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

System audits

A system audit is a systematic inspection to determine whether safety-related activities and the associated results correspond to what 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

Annex A.1: The state-owned rail network

Source: Järnvägens framtidsplaner ('Future plans for the railways') 2004 – 2015, p. 75, Swedish Rail Administration. (www.banverket.se)

Key to captions
Figur = Figure
ATC finns = ATC present
ATC saknas = ATC absent

Annex A.2.1: List of active infrastructure managers at the end of 2008/beginning of 2009

Operator	Address	Postcode	Place
Aarhus Karlshamn Sweden AB	V. Kajen (West Quay)	374 82	Karlshamn
AB Banankompaniet	PO Box 27294	102 53	Stockholm
AB Bohmans Fanerfabrik	PO Box 544	572 25	Oskarshamn
AB Borlänge Energi	PO Box 834	781 28	Borlänge
AB Electrolux	PO Box 401	542 24	Mariestad
AB Elektrokoppar	PO Box 914	251 09	Helsingborg
AB Impregna	PO Box 76	771 22	Ludvika
AB Karl Hedin Emballage	PO Box 84	775 26	Krylbo
AB Motala Verkstad	PO Box 950	591 29	Motala
AB O Hallqvist Återvinning	PO Box 204	665 25	Kil
AB Rundvirke	PO Box 6	820 26	Marmaverken
AB Sandvik Materials Technology		811 81	Sandviken
AB SkandiaTransport	PO Box 50	261 22	Landskrona
AB Storstockholms Lokaltrafik (SL)		105 73	Stockholm
AB Strängbetong	Örnvägen 20	890 51	Långviksmon
AB Strängbetong	PO Box 500	736 25	Kungsör
AB Strängbetong	PO Box 137	430 20	Veddige
AB Svenska Shell		167 80	Bromma
AB Sydåtervinning	Sturkögatan 2	211 24	Malmö
AB Västerbottens Fodercentral	PO Box 76	913 22	Holmsund
ABB Fastighet AB		771 80	Ludvika
ABetong Precon AB	Hästhagen	340 30	Vislanda
AcelorMittal BE Group SSC AB	Blekegatan 7	652 21	Karlstad
Aditro Logistics Jönköping AB	PO Box 162	551 13	Jönköping
Akzo Nobel Base Chemicals AB	PO Box 503	663 29	Skoghall
Akzo Nobel Functional Chemicals AB	Stenunge Allé 3	444 31	Stenungsund
Akzo Nobel Salt AB	PO Box 344	401 25	Gothenburg
Almer Oil Company AB	Cisternvägen	805 95	Gävle
Alstom Transport AB	Gamla Brogatan 34	111 20	Stockholm
Arctic Paper Håfreströms AB	Fack	464 82	Åsenbruk
Arctic Paper Munkedals AB		455 81	Munkedal
Ardagh Glass Limmared AB		514 83	Limmared
Arizona Chemical	PO Box 66	820 22	Sandarne

Armstrong World Industries AB	PO Box 5	913 21	Holmsund
A-Train AB (Arlanda Express)	PO Box 130	101 22	Stockholm
Axel Bergkvist AB	PO Box 401	793 13	Insjön
BAE Systems Hägglunds AB		891 82	Örnsköldsvik
Swedish Rail Administration		781 85	Borlänge
BE Group Sverige AB	PO Box 6054	600 06	Norrköping
BE Group Sverige AB	PO Box 225	201 22	Malmö
Municipality of Berg	PO Box 73	840 40	Svenstavik
Bergs Timber Mörlunda AB	Bergs Väg 13	570 84	Mörlunda
Bergslagernas Järnvägssällskap (BJs)	Bergslags-Lärje	415 02	Gothenburg
Bharat Forge Kilsta AB	PO Box 428	691 27	Karlskoga
Billerud AB Gruvöns Bruk	PO Box 500	664 28	Grums
Billerud Karlsborg AB		952 83	Karlsborgsverken
Billerud Skärblacka AB	Skärblacka Mill	617 10	Skärblacka
Bläster och lack i Luleå AB	Betongvägen 34	973 45	Luleå
Bodafors Trä AB	PO Box 111	570 21	Malmbäck
Boden Municipality	Town Hall	961 86	Boden
Boliden Bergsöe AB	PO Box 132	261 22	Landskrona
Boliden Mineral AB, Rönnskär Smelter	Rönnskär Smelter	932 81	Skelleftehamn
Bombardier Transportation Sweden AB		721 73	Västerås
Botniabanan AB	Strandgatan 7	891 33	Örnsköldsvik
Boxholm Timber AB	PO Box 12	590 10	Boxholm
Broson Aktiebolag	PO Box 84	447 23	Vårgårda
Bruza Timber AB	Bellö	570 32	Hjältevad
Bräcke Municipality, Bräcke	PO Box 190	840 60	Bräcke
BS Mekaniska Verkstads AB	PO Box 84	521 84	Falköping
BV MELLERSTA banregionen (BRM)	PO Box 417	801 05	Gävle
BV NORRA banregionen (BRN)	PO Box 43	971 02	Luleå
BV SÖDRA banregionen (BRS)	PO Box 366	201 23	Malmö
BV VÄSTRA banregionen (BRV)	PO Box 1014	405 21	Gothenburg
BV ÖSTRA banregionen (BRÖ)	PO Box 1070	172 22	Sundbyberg
Bäckstaken Umeå AB	PO Box 1221	901 22	Umeå
Casco Adhesives AB	PO Box 422	681 29	Kristinehamn
Cementa AB	PO Box 47328	100 74	Stockholm
Cementa AB	PO Box 33	541 21	Skövde
Cerealia Foods AB		153 81	Järna

Coca-Cola drycker Sverige AB	Dryckesvägen 2D	136 87	Haninge
Coop Inköp & Logistik AB	PO Box 3015	903 02	Umeå
Coop Inköp & Logistik AB	Bro terminal	197 25	Bro
Coop Sverige AB, Convenience Goods Terminal in Växjö	PO Box 1215	351 12	Växjö
Coor Service Management	Dept. 63411 TB3	405 08	Gothenburg
Copenhagen Malmö Port AB	PO Box 566	201 25	Malmö
Cremo Produktions AB	PO Box 188	432 24	Varberg
Daily Print i Umeå AB		901 70	Umeå
Danafjord Fastigheter AB		405 08	Gothenburg
Danisco Sugar AB	Stationsvägen 5	270 22	Köpingebro
Danisco Sugar AB	Örtofta Sockerbruk	241 93	Eslöv
Danisco Sugar AB, Arlöv Sugar Refinery	PO Box 32	232 21	Arlöv
Dellenbanan AB	c/o Terra Firma, PO Box 98	820 64	Näsviken
DHL Rail AB	PO Box 57	231 21	Trelleborg
Domsjö Fabriker AB	Domsjö factories	891 86	Örnsköldsvik
Dow Sverige AB	PO Box 783	601 17	Norrköping
Draka Kabel Sverige AB	Vallgatan 5	571 88	Nässjö
E.ON Gas Sverige AB	PO Box 84	374 22	Karlshamn
E.on Värme Sverige AB		701 18	Örebro
Eka Chemicals AB		445 80	Bohus
Eka Chemicals AB	PO Box 13000	850 13	Sundsvall
Eka Chemicals AB	Hammargatan 4	574 33	Vetlanda
Eka Chemicals AB Albyfabrikerna	Alby factories	841 44	Alby
Ekefors Skrothandel AB	Ekefors	514 94	Sjötofta
El-Giganten Logistik AB	PO Box 577	175 26	Järfälla
Elon Elkedjan Logistic AB	PO Box 22094	702 31	Örebro
Engelsberg-Norbergs Järnvägshistoriska förening	Engelbrektsgatan 73	738 31	Norberg
Ericsson AB	PO Box 731	791 29	Falun
Ericsson AB	Kabelvägen 1	824 82	Hudiksvall
Esab AB	PO Box 55	284 21	Perstorp
Eskilstuna Municipality, Service Dept./Traffic Services		631 86	Eskilstuna
Eslöv Municipality		241 80	Eslöv
Eurenco Bofors AB		691 86	Karlskoga
EuroMaint Rail AB	PO Box 1555	171 63	Solna
Fagersta Stainless AB	PO Box 508	737 25	Fagersta

Falkenberg Municipality	Town planning office	311 80	Falkenberg
Falköping Municipality	Council offices	521 81	Falköping
Falu Municipality		791 83	Falun
Fastighets AB Ångturbinen	Friledningsgatan 7	721 37	Västerås
Fastighets AB, Mixtura	Knut Påls väg 8	256 69	Helsingborg
Findus Sverige AB		267 81	Bjuv
Fläkt Woods AB	Fläktgatan 1	551 84	Jönköping
Fortum Värme		115 77	Stockholm
Fraktkedjan Distribution AB	Fraktvägen 2	43533	Mölnlycke
Fundia Armering AB	PO Box 119	301 04	Halmstad
Föreningen Böda Skogsjärnväg	Fagerrörvägen 60	380 75	Byxelkrok
Föreningen Gotlandståget	Hesselby railway station	620 24	Dalhem
Föreningen Nynäshamns järnvägsmuseum (NJM)	Nynäsgård engine shed	149 43	Nynäshamn
Förvaltnings AB Ellipsen	Västkustvägen 21	211 24	Malmö
Förvaltnings AB Smålandsbanan (FAS)	c/o I Qvarnström, Storgatan 36	593 33	Västervik
G E Healthcare	Björkgatan 30	751 84	Uppsala
Gamla Varvet AB	Stora Varvsgatan 14	211 19	Malmö
Green Cargo AB	PO Box 39	171 11	Solna
Greif Sweden AB, Div. Plåtemballage	PO Box 174	137 23	Västerhaninge
Grängesbergsbanornas Järnvägsmuseum (GBBJ)	PO Box 82	772 22	Grängesberg
Gåsgruvan Kalcit AB	Högbergsvägen 55	682 40	Filipstad
Gällö Såg AB	Öhn 160	840 50	Gällö
Municipality of Gävle, Technical Office		801 84	Gävle
Gävle Lagerhus AB	Fredriksskans	805 95	Gävle
Göteborgs Hamn AB	Plant Department	403 38	Gothenburg
Göteborgs spårvägar AB	PO Box 424	401 26	Gothenburg
City of Gothenburg, Traffic Office	PO Box 2403	403 16	Gothenburg
HA Industri Göteborg AB	Importgatan 47	422 46	Hisings Backa
HA Industri Stockholm AB	PO Box 8245	163 08	Spånga
Hallsbergs Terminal AB	Hallsberg Municipality	694 80	Hallsberg
Halmstads Hamn och Stuveri AB	PO Box 1	301 02	Halmstad
Halmstad Municipality	PO Box 153	301 05	Halmstad
Haninge Municipality	Technical Office	136 81	Haninge
Hannells Industrier AB	PO Box 174	311 22	Falkenberg
Hans Andersson Paper AB	Indian Ocean	418 34	Gothenburg
Hargs Hamn AB	Hamnen (The Port)	742 50	Hargshamn

Helsingborg stad, Stadsbyggnadsförvaltningen	Gåsebäcksvägen 4	251 89	Helsingborg
Helsingborgs Hamn AB	PO Box 821	251 08	Helsingborg
Hercules AB	PO Box 622	251 06	Helsingborg
Hessels Stål AB	5:e Tvärgatan 1-3	802 84	Gävle
Holmen Paper AB	Braviken Paper Mill	601 88	Norrköping
Holmen Paper AB		763 81	Hallstavik
Hudiksvall Municipality, Technical Administration		824 80	Hudiksvall
Hydro Polymers AB		444 83	Stenungsund
Håbo Fastighets AB	PO Box 24	746 21	Bålsta
Härjedalen Municipality, Technical Office	Medborgarhuset	842 80	Sveg
Härnösand Municipality	Port of Härnösand	871 80	Härnösand
Hässleholm Municipality, Technical Office	Kringelvägen 42	281 41	Hässleholm
Hässleholms Lokstall	Kraftgatan 6	234 31	Lomma
ICA Fastighets AB	Sjöhagsvägen 3	721 84	Västerås
ICA Fastighets AB	PO Box 263	651 07	KARLSTAD
ICA Handlarna AB	PO Box 1223	901 22	Umeå
Iggesunds Bruk	Holmen	825 80	Iggesund
IKEA AB Förvaltning	PO Box 700	343 81	Älmhult
IKEA AB Förvaltning	PO Box 640	251 06	Helsingborg
IKEA Fastigheter AB	PO Box 700	343 81	Älmhult
IKEA Fastigheter AB	PO Box 640	251 06	Helsingborg
IL Recycling Returpapper AB	PO Box 5388	102 49	Stockholm
Imerys Mineral AB	Ekonomivägen 3-5	436 33	Askim
Industrial Quality Recycling AB (IQR)	Stallbackavägen 26	461 38	Trollhättan
Industrispår i Ystad AB	Dragongatan 51	271 39	Ystad
Inlandsbanan AB (IBAB)	PO Box 561	831 27	Östersund
Interfleet Technology	PO Box 35	171 11	Solna
ISS TraffiCare AB	PO Box 905	170 09	Solna
Itab Fastigheter i Nässjö AB	PO Box 9054	550 09	Jönköping
Jernhusen Verkstäder AB	PO Box 703	851 21	Sundsvall
Jämtlands läns museum	PO Box 709	831 28	Östersund
Järnmalmer T Järnmalmer AB	PO Box 2079	403 12	Gothenburg
Järnvägssällskapet Åmål-Årjängs Järnväg (JÅÅJ)	Stenbecksgatan 10	662 32	Åmål
Jästbolaget AB	PO Box 7003	192 07	Sollentuna
Jönköping Municipality		551 89	Jönköping
Kalix Municipality	Nygatan 4	952 81	Kalix

Kalmar Hamn AB	PO Box 810	391 28	Kalmar
Kalmar Municipality, Highways and Parks Office	PO Box 611	391 26	Kalmar
Kalmar Veterantåg (KV)	PO Box 331	391 23	Kalmar
Kappa Förenade Well	PO Box 1104	241 26	Eslöv
Karl Ljungberg & CO AB	PO Box 2014	281 02	Hässleholm
Karlshamn Kraft AB	PO Box 65	374 21	Karlshamn
Karlshamns hamn AB	PO Box 8	374 21	Karlshamn
Karlshamn Municipality	Tubbarydsvägen 6	374 81	Karlshamn
Karlskrona Municipality, Technical Administration	Ö. Hamngatan 7 B	371 83	Karlskrona
Karlstad Municipality, Technical Services and Property Management Administration		651 84	Karlstad
Kemetyl AB	PO Box 533	136 25	Haninge
Kemira Kemi AB	PO Box 902	251 09	Helsingborg
KGK Fastighet Lunda AB		191 81	Sollentuna
Kil Municipality, Technical administration	PO Box 88	665 23	Kil
Klippan Municipality		264 80	Klippan
Konsum Värmland	Timmergatan 1	651 15	Karlstad
Korsnäs AB		801 81	Gävle
Korsnäs Frövi AB		718 80	Frövi
Kraft Foods Sverige AB, Gevalia roastery	PO Box 615	801 26	Gävle
Kristianstad Municipality, Land and Exploitation Office	V. Boulevarden 13	291 32	Kristianstad
Kristinehamn Municipality, Technical Administration	6A Technical Administration	681 84	Kristinehamn
Krokom Municipality		835 80	Krokom
Kubikenborg Alminium AB (Kubal)		851 76	Sundsvall
Kumla Municipality		692 80	Kumla
Kuusakoski Sverige AB	Svedjevägen 6	931 36	Skellefteå
Kuusakoski Sverige AB	Cementvägen 3	973 45	Luleå
Köping Municipality, Technical Office	Köping	731 85	Köping
Landskrona Municipality	Technical Services	261 80	Landskrona
Landskrona Varvet AB	PO Box 746 - Varvsudden	261 27	Landskrona
Lantmännen Mills AB	PO Box 100	595 21	Mjölby
Lantmännen Mills AB	PO Box 446	751 06	Uppsala
Latexia Sverige AB	PO Box 605	421 26	V. Frölunda
Lilla Edet Municipality		463 80	Lilla Edet
Lindbergs & Son AB	PO Box 5171	102 44	Stockholm
Lindbergs i Södertälje AB	PO Box 5171	102 44	Stockholm
Ljungafors fastigheter AB	Industriområde 2	840 10	Ljungaverk

LKAB, Produktion/Järnväg	PO Box 821	971 25	Luleå
Logistikfastigheter Fast Food Borlänge AB	c/o Wilfast Förvaltning, Stora	411 21	Gothenburg
Lucchini Sweden AB	PO Box 210	735 23	Surahammar
Luleå Generator Service AB	Industrivägen 15	972 54	Luelå
Port of Luleå	PO Box 910	971 37	Luleå
Luleå Municipality, Land and Exploitation Department		971 85	Luleå
Lundstam Åkeri & Återvinning AB	PO Box 5003	831 05	Östersund
Lycksele Municipality		921 81	Lycksele
Lysekil Municipality, Port Administration	Port Office	453 80	Lysekil
Löfbergs Lila Fastigheter AB	PO Box 1501	651 21	Karlstad
M2 Fastigheter Hamn-City AB	Garnisonsgatan 25	254 66	Helsingborg
Malmbanans vänner	Arcusvägen 95	975 94	Luleå
Malmtrafik i Kiruna AB (MTAB)		981 86	Kiruna
City of Malmö, Property Office		205 80	Malmö
City of Malmö, Highways Office		205 80	Malmö
Map Sverige AB	PO Box 553	136 25	Haninge
Marieholms järnvägsspår ekonomiska förening	c/o Borlind, Bergsén &CO AB	415 02	Gothenburg
MEFOS - Metallurgical Research Institute AB	PO Box 812	971 25	Luleå
Metsä Tissue AB	Pauliström	570 19	Pauliström
Metsä Tissue AB	Katrinefors Mill	542 88	Mariestad
Midwaggon AB	Bultgatan 1	841 31	Ånge
Mjölby Municipality, Technical Office		595 80	Mjölby
Moelven ByggModul AB	Brovägen 27	661 93	Säffle
Moelven Valåsen AB	PO Box 404	691 27	Karlskoga
Moelven Värmlands Trä AB	PO Box 136	661 23	Säffle
Mondi Dynäs AB		873 81	Väja
Mondi Packaging Örebro AB	PO Box 926	701 30	Örebro
Mora Municipality		792 80	Mora
Motorn Tre Fastighetsförvaltning AB	Annebergsvägen 3	645 41	Strängnäs
Museiföreningen Anten-Gräfsnäs Järnväg (AGJ)	PO Box 300	441 26	Alingsås
Museiföreningen Gefle-Dala jernväg (MfGDJ)	Centralplan	791 31	Falun
Museiföreningen Munkedals Jernväg	Östra Åtorpsvägen 18	455 31	Munkedal
Museiföreningen Stockholm-Roslagens Järnvägar ULJ	PO Box 3076	750 03	Uppsala
Museiföreningen Wadstena Fogelsta Järnväg	Railway station	592 30	Vadstena
Museiföreningen Östra Skånes Järnvägar (mfÖSJ)	V. Storgatan 89	291 54	Kristianstad
Museiföreningen Östra Södermanlands Järnväg	PO Box 53	647 22	Mariefred

(ÖSlJ)			
Museispårvägen Malmköping AB (MUMA)	Falkenberggatan 2	115 21	Stockholm
Museisällskapet Jädraås-Tallås Järnväg (JTJ)	Jädraås station	816 91	Jädraås
Mälarenergi AB	PO Box 14	721 03	Västerås
Mälarhamnar AB	Seglargatan 3	721 32	Västerås
Möbeldirekten AB	Lagervägen 1	136 50	Haningen
Mönsterås Municipality, Technical Office	PO Box 54	383 22	Mönsterås
Naturbränsle i Mellansverige AB	PO Box 1931	791 19	Falun
Neova AB	PO Box 1143	824 43	Hudiksvall
Nerikes Allehanda		701 92	Örebro
Neste LPG AB	Ortviksvägen 4	856 33	Sundsvall
Nilsson Group AB	PO Box 508	432 19	Varberg
Nora Bergslags Veteranjernväg (NBVJ)	Järnvägsgatan 1	713 31	Nora
Nordic Paper Seffle AB	PO Box 610	661 29	Säffle
Nordisk Carbon Black AB	Kusthamnsgatan 1	211 24	Malmö
Nordkalk AB	PO Box 901	731 29	Köping
Norrköping Municipality	Technical Committees	601 81	Norrköping
Norrlandspojkarna Fastighet AB	Heffnersvägen 1	856 33	Sundsvall
Norrskog Wood Products AB	PO Box 213	831 23	Östersund
Norske Skog Jämtland AB	PO Box 106	830 47	Trångsviken
Notvikens Fastighet AB	Timotejstigen 9	954 35	Gammelstad
Nybro Municipality, Technical Office		382 80	Nybro
Nykvarn Municipality		155 80	Nykvarn
Nässjö Railway Museum	PO Box 7	571 21	Nässjö
Nässjö Municipality		571 80	Nässjö
Ohs bruks järnvägs museiförening (OBJ)	PO Box 179	351 04	Växjö
OMYA AB	Kalendegatan 18	211 35	Malmö
Osby Municipality	Highways Office	283 80	Osby
Oscarson Skog AB	Stampuddsvägen 7	863 33	Sundsbruk
Oskarshamns Hamn AB	N Strandgatan 50	572 32	Oskarshamn
Osram Aktiebolag	PO Box 504	136 25	Haninge
Outokumpu Stainless AB		644 80	Torshälla
Outokumpu Stainless AB	PO Box 74	774 22	Avesta
Outokumpu Stainless AB		693 81	Degerfors
Ovako Bar AB		777 80	Smedjebacken
Ovako Bar AB	PO Box 5	590 10	Boxholm

Ovako Forsbacka AB	PO Box 100	818 03	Forsbacka
Ovako Steel AB	PO Box 77	712 80	Hällefors
Ovako Steel AB		813 82	Hofors
Oxelösunds Hamn AB	PO Box 1200	613 24	Oxelösund
Pergo (Europe) AB	PO Box 1010	231 25	Trelleborg
Perstorp Fastighets AB		284 80	Perstorp
Perstorp Municipality		284 84	Perstorp
Peterson Packaging AB	PO Box 693	601 15	Norrköping
Piteå Municipality	PO Box 716	941 28	Piteå
Piteå Municipality	Svartuddsvägen 1	941 85	Öjebyn
Posten Logistik AB	Produktion Brevnätet	105 00	Stockholm
Preem Raffinaderi AB		418 34	Gothenburg
Procordia Food AB	Viagatan 17	692 82	Kumla
Procordia Food AB	Åbyvägen 11	701 31	Örebro
Ramnäs Bruk AB	PO Box 14	730 60	Ramnäs
Rexam Beverage Fosie AB	PO Box 9016	200 39	Malmö
Rockhammars Bruk AB	Rockhammars Mill	718 81	Frövi
Rohm and Haas Nordiska AB	PO Box 45	261 22	Landskrona
Rottneros Bruk AB	Rottneros Mill	686 94	Rottneros
Rusta AB	PO Box 406	191 24	Sollentuna
Ruukki Sverige AB, Virsbo	PO Box 100	730 61	Virsbo
SAAB AB, Saab Support	PO Box 360	831 25	Östersund
Saab Automobile AB		461 80	Trollhättan
Saint Gobain Isover AB	PO Box 501	260 50	Billesholm
Sakab AB	Norrtorp	692 85	Kumla
Sandviken Energi AB	PO Box 91	811 21	Sandviken
SAPA Industriservice AB		621 81	Finspång
Sapa Profiler AB	Fack	574 81	Vetlanda
SCA Graphic Sundsvall AB	Östrand Pulp Mill	861 81	Timrå
SCA Hygiene Paper AB, Edet Mill		463 81	Lilla Edet
SCA Hygiene Products AB	PO Box 243	311 23	Falkenberg
SCA Packaging Munksund AB		941 87	Piteå
SCA Packaging Sweden AB	PO Box 504	331 25	Värnamo
SCA Skog AB Virke Nord	PO Box 783	941 28	Piteå
SCA Skog AB		851 88	Sundsvall
SCA Timber AB	PO Box 783	941 28	Piteå

SCA Timber AB, Bollsta Sågverk	Bruksvägen	873 80	Bollstabruk
Scana Steel Björneborg AB	Kristinehamnsvägen 2	680 71	Björneborg
Scandinavian Distripoint AB	c/o Göteborgs Hamn AB	403 38	Gothenburg
ScanDust AB	PO Box 204	261 23	Landskrona
Scania CV AB		151 87	Södertälje
ScanPole Sverige AB	Åsavägen 10	690 45	Åsbro
Schenker Logistics AB		551 90	Jönköping
Setra Trävaror AB, Horndal Sawmill	Timmervägen 1	774 68	Horndal
Setra Trävaror AB, Kastets Sawmill	PO Box 430	801 05	Gävle
Setra Trävaror AB, Lövholmen	PO Box 740	941 28	Piteå
Shell Raffinaderi AB	PO Box 8889	402 72	Gothenburg
Siljan Timber AB	PO Box 435	792 27	Mora-Noret
Skanska Sverige AB	Div Asfalt & Betong avd Syd	380 30	Rockneby
Skara-Lundsbrunns järnvägar (SkLJ)	Tullportagatan 1	532 30	Skara
Skellefteå, Technical Office	Skeppargatan 16	931 85	Skellefteå
SKF Sverige AB	Property Administration	415 50	Gothenburg
Skrotfrag	Ö Nyebrovägen	424 38	Angered
Skånska Järnvägar AB	Brösarps stationsväg 3	277 55	Brösarp
Skånska Makadam AB	Vramsvägen 1	265 32	Åstorp
Smalspåret i Hultsfred AB	c/o Callvik, Kästadalsvägen 14	141 59	Huddinge
Smurfit Kappa Lagamill AB	PO Box 43	285 93	Markaryd
Smurfit Kappa Kraftliner Piteå		941 86	Piteå
Smurfit Kappa Mittpac AB	V. Kungsvägen 1	840 60	Bräcke
Smurfit Kappa Sverige AB	PO Box 4036	800 04	Gävle
SSAB Oxelösund AB		613 80	Oxelösund
SSAB Tunnplåt AB		781 84	Borlänge
SSAB Tunnplåt AB Ämnen Luleå		971 88	Luleå
Stena Recycling AB	PO Box 4088	400 40	Gothenburg
Stena Stål Nybro AB	PO Box 827	382 28	Nybro
Stensele Såg i Storuman AB	Gamla Vilhelminavägen 2	923 21	Stensele
Stiftelsen Dal-Västra Värmlands Järnväg (DVVJ)	PO Box 14	666 21	Bengtsfors
Stockarydsterminalen AB	PO Box 186	576 24	Sävsjö
Stockholms hamn AB	PO Box 27314	102 54	Stockholm
Stockholms kultursällskap för ånga och järnväg	PO Box 35	191 21	Sollentuna
City of Stockholm, Highways and Property Office	PO Box 8189	104 20	Stockholm
Stora Enso Fors AB		774 89	Fors

Stora Enso Hylte AB	F.A.O.: Anders Magnusson	314 81	Hyltebruk
Stora Enso Kvarnsveden AB		781 83	Borlänge
Stora Enso Nymölla AB	Nymölla Mill	295 80	Nymölla
Stora Enso Pulp	PO Box 4	817 21	Norrsundet
Stora Enso Pulp AB		814 81	Skutskär
Stora Enso Skoghall AB	PO Box 501	663 29	Skoghall
Stora Enso Timber AB	PO Box 502	820 20	Ljusne
Stora Enso Timber AB, Gruvön Sawmill	Timmervägen 2	664 33	Grums
Structo AB	PO Box 1003	688 29	Storfors
Strömsund Municipality	PO Box 500	833 24	Strömsund
STT Svensk Tågteknik AB	Gölgatan 8A	571 34	Nässjö
Sundsvalls Hamn AB	PO Box 805	851 23	Sundsvall
Sundsvall Municipality	Highways and Land Department	851 85	Sundsvall
Surahammars Bruk AB	PO Box 201	735 23	Surahammar
Swedspan AB	PO Box 502	577 26	Hultsfred
Swedwire AB	PO Box 170	432 24	Varberg
SweMaint AB	Utbyvägen 151	415 07	Gothenburg
Svenska Lantmännen Ek. för.	PO Box 905	601 19	Norrköping
Svenska Lantmännen Ek.för	PO Box 1743	701 17	Örebro
Svenska Lantmännen Ek.för.		311 83	Falkenberg
Svenska Statoil AB Gasol/LPG	Torkel Knutssons gata 24	118 88	Stockholm
SWT Swedtrac Sverige AB	PO Box 7092	170 07	Solna
Sydskånes Avfallsaktiebolag	PO Box 50344	202 13	Malmö
Sågverkens Trädprodukter AB	Storsjöstråket 15	831 34	Östersund
Sällskapet Ostkustbanans Vänner (OKBv)	PO Box 458	851 06	Sundsvall
Söderhamns Stuveri & Hamn AB	PO Box 5082	826 05	Söderhamn
Södertälje Hamn AB	PO Box 2016	151 02	Södertälje
Södertälje Municipality	Town Planning Office	151 89	Södertälje
Södra Cell		383 25	Mönsterås
Södra Cell AB	Mörrum Mill	375 86	Mörrum
Södra Cell Värö	Värö Mill`	430 24	Väröbacka
Sölvesborgs Stuveri & Hamn AB	Yttershamnen	294 35	Sölvesborg
Söråkers Hamnfastighet AB		801 04	Gävle
Tankmobil AB	PO Box 54	271 22	Ystad
Tarkett AB		289 89	Hanaskog
Terminal West AB	PO Box 18	432 21	Varberg

Terramet Stålcenter AB	PO Box 45	551 12	Jönköping
Tetra pak Business Support AB	Ruben Rausings Gata	221 86	Lund
Tetra Pak Packaging Material AB	PO Box 502	686 28	Sunne
TGOJ trafik AB	Gredbyvägen 3-5	632 21	Eskilstuna
Thule Trailers AB	Industrigatan 16	553 02	Jönköping
Tibnor AB	PO Box 909	731 29	Köping
Tibnor AB	PO Box 600	169 26	Solna
Tibnor AB Stockholm	PO Box 600	169 26	Solna
Timrå Municipality		861 82	Timrå
Tjärnviks Trä AB	Gryttje 1372	820 77	Gnarp
Transportstaden Örebro AB C/O Brinnova Fastigheter	Verkstadsgatan 13	252 27	Helsingborg
Trelleborgs Hamn AB	PO Box 51	231 21	Trelleborg
Trätåg AB		791 80	Falun
Tågåkeriet i Bergslagen AB (TÅGAB)	Bangårdsgatan 2	681 30	Kristinehamn
Uddevalla Hamnterminal AB	PO Box 543	451 21	Uddevalla
Umeå Hamn AB	Port of Umeå	913 32	Holmsund
Umeå Municipality, Town Planning Office		901 84	Umeå
Unilever Bestfoods AB	PO Box 156	751 04	UPPSALA
Unilever Bestfoods AB/Slotts	PO Box 156	751 04	Uppsala
Uppsala Municipality, Highways and Traffic Office		753 75	Uppsala
Ursvikens Mekaniska Verkstads AB	Mekanvägen 71	932 82	Ursviken
Waggeryd Cell AB	PO Box 7	567 21	Vaggeryd
Vallviks Bruk AB		820 21	Vallvik
Varberg Municipality		432 80	Varberg
Wasabröd AB		682 82	Filipstad
Vattenfall AB Värme Norden	PO Box 600	753 82	Uppsala
Vectus LTD	Kronåsvägen 14	752 37	Uppsala
Vetlanda Municipality, Technical Office		574 80	Vetlanda
Vida Alvesta AB/Tongen 17	PO Box 100	342 21	Alvesta
Vida Hestra AB	PO Box 119	330 27	Hestra
Vilhelmina Municipality		912 81	Vilhelmina
Volvo Cars Body Components		293 80	Olofström
Volvo Construction Equipment AB, Hauler & Loader D	PO Box 303	671 27	Arvika
Volvo Powertrain	Volvo Facility Services	541 87	Skövde
Vopak Logistics Nordic AB	Brännoljegatan, Skarvikshamnen	418 34	Gothenburg
Vopak Logistics Nordic AB	Brännoljegatan 12	418 34	Gothenburg

Vossloh Nordic Switch System AB	PO Box 1512	271 00	Ystad
V-tab AB	Exportgatan 2-4	442 46	Hisings-Backa
V-tab Västerås AB	PO Box 873	721 23	Västerås
Vänerhamn AB	Stuvargatan 1	652 21	Karlstad
Värnamo Municipality	Technical Office	331 83	Värnamo
Västerberslagens Värme AB	PO Box 860	771 28	Ludvika
Västervik Municipality, Technical Service	PO Box 25	593 21	Västervik
City of Västerås, Property Office		721 87	Västerås
Yara AB	PO Box 908	731 29	Köping
Yara AB	PO Box 516	261 24	Landskrona
Yara AB	Kommendantvägen	602 38	Norrköping
Ystad Hamn Logistik AB	Hamntorget 2	271 39	Ystad
Ystad Municipality, Town Planning	Town Planning Office	271 80	Ystad
Åhus Hamn & Stuveri AB	Krangatan 2	296 32	Åhus
Åkers Sweden AB		640 60	Åkers styckebruk
Åre Municipality, Technical Department	PO Box 201	830 05	Järpen
Älmhult Municipality	PO Box 500	343 23	Älmhult
Älmhults Terminal AB	PO Box 500	343 23	Älmhult
Älvsbyn Municipality	Storgatan	942 85	Älvsbyn
Örebro Municipality, Technical Administration	PO Box 33 300	701 35	Örebro
Öresundsbrokonsortiet	Vester Sögade 10	DK1601	Copenhagen
Östersund Municipality	Town Planning/Highways and Parks Office	831 32	Östersund

Annex A.2.2: List of active railway undertakings at the end of 2008/beginning of 2009

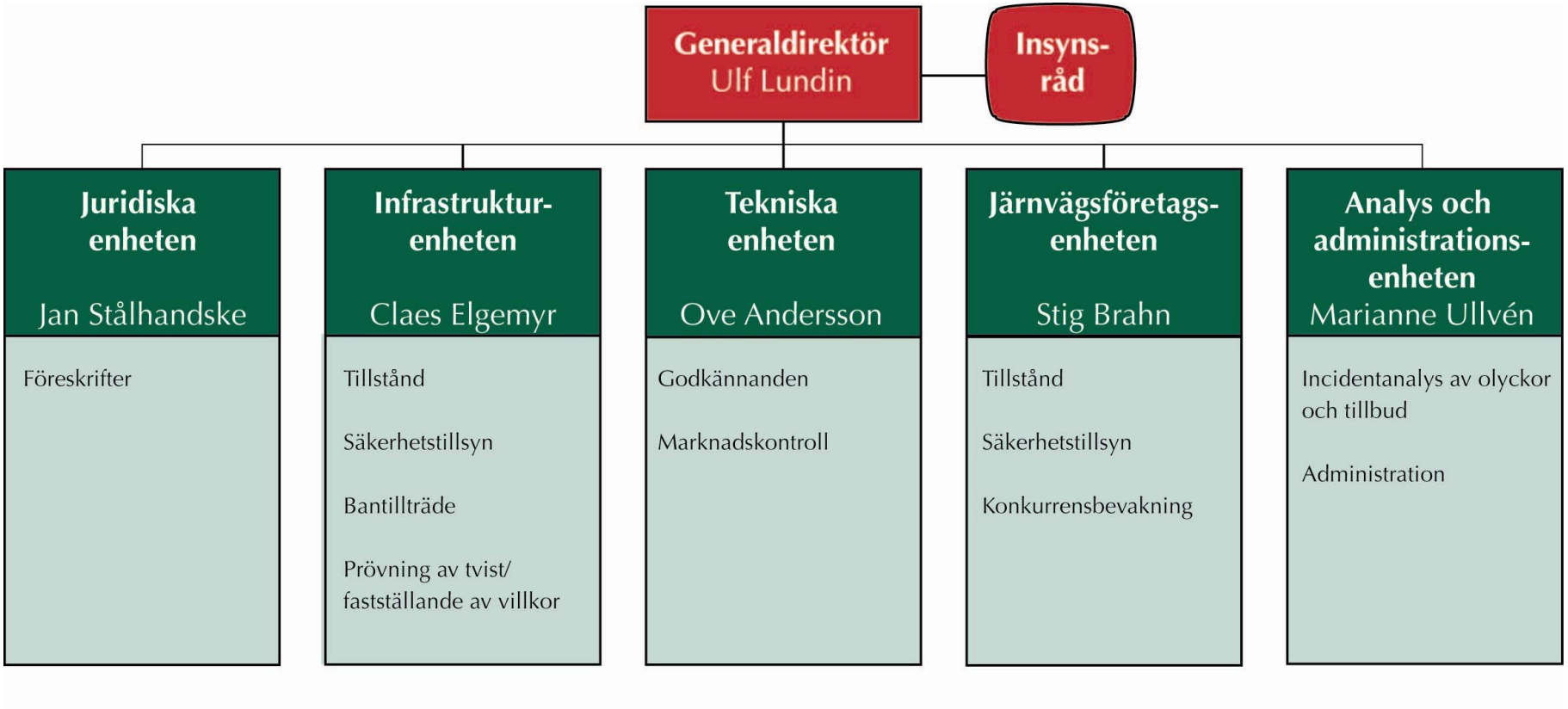
Operator	Address	Postcode	Place
AB Motala Verkstad	PO Box 950	591 29	Motala
AB Sandvik Materials Technology		811 81	Sandviken
AB SkandiaTransport	PO Box 50	261 22	Landskrona
AB Stockholms Spårvägar	Falkenbergsgatan 2	115 21	Stockholm
ABetong Precon AB	Hästhagen	340 30	Vislanda
Alstom Transport AB	Gamla Brogatan 34	111 20	Stockholm
Ardagh Glass Limmared AB		514 83	Limmared
Arriva Tåg AB	PO Box 38	201 20	Malmö
Arvidsjaurs Järnvägsförening	Basvägen 7	933 34	Arvidsjaur
A-Train AB (Arlanda Express)	PO Box 130	101 22	Stockholm
Axel Bergkvist AB	PO Box 401	793 13	Insjön
Balfour Beatty Rail AB	PO Box 413	721 08	Västerås
Baneservice AS Norge Filial	Skårs Led 3	412 63	Gothenburg
Swedish National Rail Administration		781 85	Borlänge
Bergslagernas Järnvägssällskap (BJs)	Bergslags-Lärje	415 02	Gothenburg
Billerud AB Gruvöns Bruk	PO Box 500	664 28	Grums
Billerud Skärblacka AB	Skärblacka Mill	617 10	Skärblacka
Boliden Mineral AB, Rönnskär Smelter	Rönnskär Smelter	932 81	Skelleftehamn
Bombardier Transportation Sweden AB		721 73	Västerås
CargoNet AB	Sjöviksbacken 26	117 43	Stockholm
CargoNet AS	Platous gt. 14-16	NO0048	Oslo
Danisco Sugar AB, Arlöv Sugar Refinery	PO Box 32	232 21	Arlöv
Dellenbanan AB	c/o Terra Firma, PO Box 98	820 64	Näsviken
Dow Sverige AB	PO Box 783	601 17	Norrköping
DSBFirst Sverige AB	PO Box 57	201 20	Malmö
Engelsberg-Norbergs Järnvägshistoriska förening	Engelbrektsgatan 73	738 31	Norberg
EuroMaint Rail AB	PO Box 1555	171 63	Solna
Föreningen Böda Skogsjärnväg	Fagerrörvägen 60	380 75	Byxelkrok
Föreningen Gotlandståget	Hesselby railway station	620 24	Dalhem
Föreningen Nynäshamns järnvägsmuseum (NJM)	Nynäsgård engine shed	149 43	Nynäshamn
Green Cargo AB	PO Box 39	171 11	Solna
Grängesbergsbanornas Järnvägsmuseum (GBBJ)	PO Box 82	772 22	Grängesberg
Göteborgs spårvägar AB	PO Box 424	401 26	Gothenburg

City of Gothenburg, Trafic Department	PO Box 2403	403 16	Gothenburg
Hector Rail AB	Svärdvägen 13	182 33	Danderyd
Holmen Paper AB		763 81	Hallstavik
Industrial Quality Recycling AB (IQR)	Stallbackavägen 26	461 38	Trollhättan
Inlandsbanan AB (IBAB)	PO Box 561	831 27	Östersund
Interfleet Technology	PO Box 35	171 11	Solna
ISS TraffiCare AB	PO Box 905	170 09	Solna
Järnvägssällskapet Åmål-Årjängs Järnväg (JÅÅJ)	Stenbecksgatan 10	662 32	Åmål
Kalmar Veterantåg (KV)	PO Box 331	391 23	Kalmar
Kockums Industrier AB	Stora Varvsgatan 14	211 19	Malmö
Korsnäs AB		801 81	Gävle
Korsnäs Frövi AB		718 80	Frövi
Landeryds Järnvägsmuseum	PO Box 103	314 04	Landeryd
Line CNM AB	Miraallén 2	417 58	Gothenburg
Malmbanans vänner	Arcusvägen 95	975 94	Luleå
Malmtrafik i Kiruna AB (MTAB)		981 86	Kiruna
Malmö Stads Spårvägar museiförening (MSS)	c/o Silfverling Protokollgr. 4	226 47	Lund
MidCargo AB	Industrigatan 44 A	571 38	Nässjö
Midwaggon AB	Bultgatan 1	841 31	Ånge
Museiföreningen Anten-Gräfsnäs Järnväg (AGJ)	PO Box 300	441 26	Alingsås
Museiföreningen Gefle-Dala jernväg (MfGDJ)	Centralplan	791 31	Falun
Museiföreningen Munkedals Jernväg	Östra Åtorpsvägen 18	455 31	Munkedal
Museiföreningen Stockholm-Roslagens Järnvägar ULJ	PO Box 3076	750 03	Uppsala
Museiföreningen Wadstena Fogelsta Järnväg	Railway station	592 30	Vadstena
Museiföreningen Östra Södermanlands Järnväg (ÖSlJ)	PO Box 53	647 22	Mariefred
Museispårvägen Malmköping AB (MUMA)	Falkenberggatan 2	115 21	Stockholm
Museisällskapet Jädraås-Tallås Järnväg (JTJ)	Jädraås station	816 91	Jädraås
NBA Energi & Miljöutveckling AB	PO Box 743	941 28	Piteå
Nora Bergslags Veteranjernväg (NBVJ)	Järnvägsgatan 1	713 31	Nora
Nordic Haulage AB (NOHAB)	Fredsgatan 3B	652 25	Karlstad
Nordic Paper Seffle AB	PO Box 610	661 29	Säffle
Nordkalk AB	PO Box 901	731 29	Köping
Nässjö Railway Museum	PO Box 7	571 21	Nässjö
Ohs bruks järnvägs museiförening (OBJ)	PO Box 179	351 04	Växjö

Ovako Bar AB		777 80	Smedjebacken
Peterson Rail AB	PO Box 6008	400 60	Gothenburg
Railcare Tåg AB	PO Box 34	932 21	Skelleftehamn
Railion Scandinavia A/S	Spotorno Allé 12	2630	Tåstrup
Roslagståg AB	PO Box 5829	102 48	Stockholm
Ruukki Sverige AB, Virsbo	PO Box 100	730 61	Virsbo
SCA Hygiene Paper AB, Edet Mill		463 81	Lilla Edet
ScanPole Sverige AB	Åsavägen 10	690 45	Åsbro
Shell Raffinaderi AB	PO Box 8889	402 72	Gothenburg
SJ AB		105 50	Stockholm
Skara-Lundsbrunns järnvägar (SkLJ	Tullportagatan 1	532 30	Skara
Skånska Järnvägar AB	Brösarps stationsväg 3	277 55	Brösarp
SL Infrateknik AB		121 89	Johanneshov
Smalspåret i Hultsfred AB	c/o Callvik, Kästadalsvägen 14	141 59	Huddinge
Spark Trade AB	PO Box 40	571 21	Nässjö
SSAB Oxelösund AB		613 80	Oxelösund
SSAB Tunnplåt AB		781 84	Borlänge
SSAB Tunnplåt AB Ämnen Luleå		971 88	Luleå
Stena Recycling AB	PO Box 4088	400 40	Gothenburg
Stiftelsen Dal-Västra Värmlands Järnväg (DVVJ)	PO Box 14	666 21	Bengtsfors
Stockholms kultursällskap för ånga och järnväg	PO Box 35	191 21	Sollentuna
Stockholms ånglokssällskap (SÅS)	Vretensborgsv 13 B	126 30	Hägersten
Stockholmståg KB	PO Box 505	101 30	Stockholm
Stora Enso Nymölla AB	Nymölla Mill	295 80	Nymölla
Stora Enso Skoghall AB	PO Box 501	663 29	Skoghall
Strukton Rail AB	Uddvägen 7	131 34	Nacka
STT Svensk Tågteknik AB	Gölgatan 8A	571 34	Nässjö
Surahammars Bruk AB	PO Box 201	735 23	Surahammar
SweMaint AB	Utbyvägen 151	415 07	Gothenburg
Svenska Motorvagnsklubben (SMoK)	Spårvägen 1	521 32	Falköping
Svenska Statoil AB Gasol/LPG	Torkel Knutssons gata 24	118 88	Stockholm
Svenska Tågkompaniet AB	Centralplan 3	803 11	Gävle
SWT Swedtrac Sverige AB	PO Box 7092	170 07	Solna
Sällskapet Ostkustbanans Vänner (OKBv)	PO Box 458	851 06	Sundsvall
TGOJ trafik AB	Gredbyvägen 3-5	632 21	Eskilstuna

Tjustbygdens järnvägsförening (TJF)	PO Box 173	593 23	Västervik
Trafikföreningen Veterantåg i Övre Norrland (VTÖN)	Arcusvägen 95	975 94	Luleå
TX Logistik AB	Grimsbygatan 14	211 20	Malmö
Tågfrakt Produktion i Sverige AB	Spårvägen 1	521 32	Falköping
Tågia AB	PO Box 107 17	121 29	Stockholm
Tågåkeriet i Bergslagen AB (TÅGAB)	Bangårdsgatan 2	681 30	Kristinehamn
Veolia Transport Sverige AB	PO Box 1820	171 24	Solna
Volker Weiss Nordic AB	Turebergs allè 2	191 62	Sollentuna
Vossloh Nordic Switch System AB	PO Box 1512	271 00	Ystad
Värmlandståg	Karlslundsvägen 4A, Liljedahl	660 40	Segmon
Yara AB	PO Box 908	731 29	Köping
Åkers Sweden AB		640 60	Åkers styckebruk

Annex B.1: The Swedish Rail Agency's organisation chart 2008



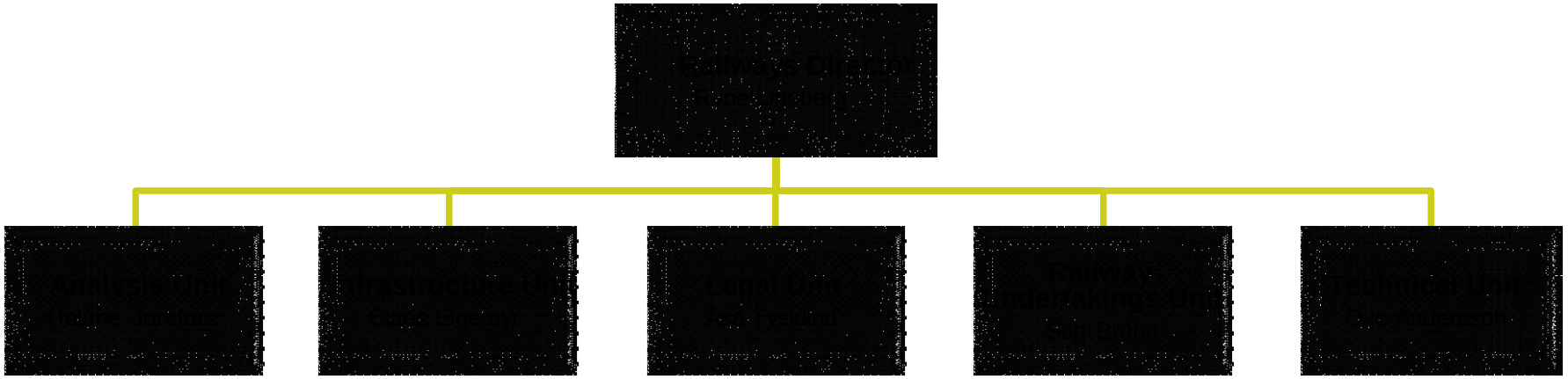
Key
Generaldirektör = Director-General
Insynsråd = Transparency Council
Juridiska enheten = Legal Unit
Föreskrifter = Regulations
Infrastrukturenheten = Infrastructure Unit
Tillstånd = Authorisation
Säkerhetstillsyn = Safety supervision

Bantillträde = Track supervision
Prövning av tvist/fastställande av villkor = Review of disputes/setting of conditions
Tekniska enheten = Technical Unit
Godkännanden = Approvals
Marknadskontroll = Market supervision
Järnvägsföretagsenheten = Rail Undertaking Unit
Tillstånd = Authorisation
Säkerhetstillsyn = Safety supervision
Konkurrensbevakning = Competition monitoring
Analys och admininstrationsenheten = Analysis and Administration Unit
Incidentanalys av olyckor och tillbud = Analysis of accidents and incidents
Administration = Administration

Annex B.2.1: Organisation chart for the entire Swedish Transport Agency 2009

Key to captions
Generaldirektör = Director-General
Stab = Staff
Järnvägsavdelningen = Railways Department
Luftfartsadelningen = Aviation Department
Sjöfartsavdelningen = Shipping Department
Trafikregistret =Traffic Register
Vägtrafikavdelningen = Road Traffic Department
Utvecklingsavdelningen = Development Department
Ekonomiavdelningen = Finance Department
Informationsavdelningen = Information Department
IT-avdelningen = IT Department
Juridikavdelningen = Legal Department
Personalavdelningen = Personnel Department

Annex B.2.2: Organisation chart of the Swedish Transport Agency's railway department 2009



Annex C: Statistical data, common safety indicators (CSIs)

The table below shows the actual values reported for 2008 (not averages of 2006, 2007 and 2008).

Back translation of a Swedish translation of an ERA form for data on common safety indicators (CSIs)

Field no	Data code	Description of data	Data format	Example of data	Def.
0. Details on reporting country					
01	CC	Reporting country	The two-letter ISO code should be used (ISO 3166 alpha-2)	SE	
02	YY	Reporting year	Format: YYYY, four-digit number	2008	
1.1a. Total number of accidents, and a breakdown into the following types of accident					
1	N00	Total number of accidents	Numeric value	46	
2	N01	Number of train collisions, including train impact with objects within the clearance gauge	Numeric value	4	
3	N02	Number of train derailments	Numeric value	14	
4	N03	Number of level-crossing accidents, including accidents involving pedestrians at level-crossings	Numeric value	6	
5	N04	Number of accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	13	
6	N05	Number of fires in rolling stock	Numeric value	3	
7	N06	Number of other accidents	Numeric value	6	
8	N07	Total number of suicides	Numeric value	71	
9	N10	Total number of accidents relative to train kilometres	Numeric value (number per million train-km)	3.33E-01	
10	N11	Number of train collisions, including train impact with objects within the clearance gauge relative to train kilometres	Numeric value (number per million train-km)	2.89E-02	
11	N12	Number of train derailments relative to train kilometres	Numeric value (number per million train-km)	1.01E-01	

12	N13	Number of level-crossing accidents, including accidents involving pedestrians at level-crossings relative to train kilometres	Numeric value (number per million train-km)	4.34E-02	
13	N14	Number of accidents to persons caused by rolling stock in motion relative to train kilometres, with the exception of suicides	Numeric value (number per million train-km)	9.41E-02	
14	N15	Number of fires in rolling stock relative to train kilometres	Numeric value (number per million train-km)	2.17E-02	
15	N16	Number of other accidents relative to train kilometres	Numeric value (number per million train-km)	4.34E-02	
16	N17	Number of suicides relative to train kilometres	Numeric value (number per million train-km)	5.14E-01	
17	TS00	In accidents, total	Numeric value	6	
18	TS01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
19	TS02	In train derailments	Numeric value	0	
20	TS03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	1	
21	TS04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	4	
22	TS05	In fires in rolling stock	Numeric value	0	
23	TS06	In other accidents	Numeric value	1	
24	TS10	In accidents, total	Numeric value (number per million train-km)	4.34E-02	
25	TS11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
26	TS12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
27	TS13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	7.24E-03	
28	TS14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	2.89E-02	
29	TS15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
30	TS16	In other accidents	Numeric value (number per million train-km)	7.24E-03	
31	PS00	In accidents, total	Numeric value	3	

32	PS01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
33	PS02	In train derailments	Numeric value	0	
34	PS03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	0	
35	PS04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	3	
36	PS05	In fires in rolling stock	Numeric value	0	
37	PS06	In other accidents	Numeric value	0	
38	PS10	In accidents, total	Numeric value (number per million train-km)	2.17E-02	
39	PS11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
40	PS12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
41	PS13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	0.00E+00	
42	PS14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	2.17E-02	
43	PS15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
44	PS16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
45	PS20	In accidents, total	Numeric value (number per billion passenger-km)	2.77E-01	
46	PS21	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per billion passenger-km)	0.00E+00	
47	PS22	In train derailments	Numeric value (number per billion passenger-km)	0.00E+00	
48	PS23	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per billion passenger-km)	0.00E+00	
49	PS24	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per billion passenger-km)	2.77E-01	
50	PS25	In fires in rolling stock	Numeric value (number per billion passenger-km)	0.00E+00	
51	PS26	In other accidents	Numeric value (number per billion passenger-km)	0.00E+00	

52	SS00	In accidents, total	Numeric value	1	
53	SS01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
54	SS02	In train derailments	Numeric value	0	
55	SS03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	0	
56	SS04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	0	
57	SS05	In fires in rolling stock	Numeric value	0	
58	SS06	In other accidents	Numeric value	1	
59	SS10	In accidents, total	Numeric value (number per million train-km)	7.24E-03	
60	SS11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
61	SS12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
62	SS13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	0.00E+00	
63	SS14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	0.00E+00	
64	SS15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
65	SS16	In other accidents	Numeric value (number per million train-km)	7.24E-03	
66	LS00	In accidents, total	Numeric value	1	
67	LS01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
68	LS02	In train derailments	Numeric value	0	
69	LS03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	1	
70	LS04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	0	
71	LS05	In fires in rolling stock	Numeric value	0	
72	LS06	In other accidents	Numeric value	0	

73	LS10	In accidents, total	Numeric value (number per million train-km)	7.24E-03	
74	LS11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
75	LS12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
76	LS13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	7.24E-03	
77	LS14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	0.00E+00	
78	LS15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
79	LS16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
80	US00	In accidents, total	Numeric value	1	
81	US01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
82	US02	In train derailments	Numeric value	0	
83	US03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	0	
84	US04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	1	
85	US05	In fires in rolling stock	Numeric value	0	
86	US06	In other accidents	Numeric value	0	
87	US10	In accidents, total	Numeric value (number per million train-km)	7.24E-03	
88	US11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
89	US12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
90	US13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	0.00E+00	
91	US14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	7.24E-03	
92	US15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
93	US16	In other accidents	Numeric value (number per million train-km)	0.00E+00	

94	OS00	In accidents, total	Numeric value	0	
95	OS01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
96	OS02	In train derailments	Numeric value	0	
97	OS03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	0	
98	OS04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	0	
99	OS05	In fires in rolling stock	Numeric value	0	
100	OS06	In other accidents	Numeric value	0	
101	OS10	In accidents, total	Numeric value (number per million train-km)	0.00E+00	
102	OS11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
103	OS12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
104	OS13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	0.00E+00	
105	OS14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	0.00E+00	
106	OS15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
107	OS16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
108	TK00	In accidents, total	Numeric value	13	
109	TK01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
110	TK02	In train derailments	Numeric value	0	
111	TK03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	4	
112	TK04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	9	
113	TK05	In fires in rolling stock	Numeric value	0	
114	TK06	In other accidents	Numeric value	0	

115	TK10	In accidents, total	Numeric value (number per million train-km)	9.41E-02	
116	TK11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
117	TK12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
118	TK13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	2.89E-02	
119	TK14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	6.51E-02	
120	TK15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
121	TK16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
122	PK00	In accidents, total	Numeric value	0	
123	PK01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
124	PK02	In train derailments	Numeric value	0	
125	PK03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	0	
126	PK04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	0	
127	PK05	In fires in rolling stock	Numeric value	0	
128	PK06	In other accidents	Numeric value	0	
129	PK10	In accidents, total	Numeric value (number per million train-km)	0.00E+00	
130	PK11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
131	PK12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
132	PK13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	0.00E+00	
133	PK14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	0.00E+00	
134	PK15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
135	PK16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
136	PK20	In accidents, total	Numeric value (number per billion passenger-km)	0.00E+00	

137	PK21	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per billion passenger-km)	0.00E+00	
138	PK22	In train derailments	Numeric value (number per billion passenger-km)	0.00E+00	
139	PK23	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per billion passenger-km)	0.00E+00	
140	PK24	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per billion passenger-km)	0.00E+00	
141	PK25	In fires in rolling stock	Numeric value (number per billion passenger-km)	0.00E+00	
142	PK26	In other accidents	Numeric value (number per billion passenger-km)	0.00E+00	
143	SK00	In accidents, total	Numeric value	0	
144	SK01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
145	SK02	In train derailments	Numeric value	0	
146	SK03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	0	
147	SK04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	0	
148	SK05	In fires in rolling stock	Numeric value	0	
149	SK06	In other accidents	Numeric value	0	
150	SK10	In accidents, total	Numeric value (number per million train-km)	0.00E+00	
151	SK11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
152	SK12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
153	SK13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	0.00E+00	
154	SK14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	0.00E+00	
155	SK15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
156	SK16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
157	LK00	In accidents, total	Numeric value	4	

158	LK01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
159	LK02	In train derailments	Numeric value	0	
160	LK03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	4	
161	LK04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	0	
162	LK05	In fires in rolling stock	Numeric value	0	
163	LK06	In other accidents	Numeric value	0	
164	LK10	In accidents, total	Numeric value (number per million train-km)	2.89E-02	
165	LK11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
166	LK12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
167	LK13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	2.89E-02	
168	LK14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	0.00E+00	
169	LK15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
170	LK16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
171	UK00	In accidents, total	Numeric value	9	
172	UK01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
173	UK02	In train derailments	Numeric value	0	
174	UK03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	0	
175	UK04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	9	
176	UK05	In fires in rolling stock	Numeric value	0	
177	UK06	In other accidents	Numeric value	0	
178	UK10	In accidents, total	Numeric value (number per million train-km)	6.51E-02	
179	UK11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	

180	UK12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
181	UK13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	0.00E+00	
182	UK14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	6.51E-02	
183	UK15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
184	UK16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
185	OK00	In accidents, total	Numeric value	0	
186	OK01	In train collisions including train impact with objects within the clearance gauge	Numeric value	0	
187	OK02	In train derailments	Numeric value	0	
188	OK03	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value	0	
189	OK04	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value	0	
190	OK05	In fires in rolling stock	Numeric value	0	
191	OK06	In other accidents	Numeric value	0	
192	OK10	In accidents, total	Numeric value (number per million train-km)	0.00E+00	
193	OK11	In train collisions including train impact with objects within the clearance gauge	Numeric value (number per million train-km)	0.00E+00	
194	OK12	In train derailments	Numeric value (number per million train-km)	0.00E+00	
195	OK13	In level-crossing accidents including accidents involving pedestrians at level-crossings	Numeric value (number per million train-km)	0.00E+00	
196	OK14	In accidents to persons caused by rolling stock in motion, with the exception of suicides	Numeric value (number per million train-km)	0.00E+00	
197	OK15	In fires in rolling stock	Numeric value (number per million train-km)	0.00E+00	
198	OK16	In other accidents	Numeric value (number per million train-km)	0.00E+00	
199	100	Total number of deficiencies	Numeric value	620	
200	101	Total number of broken rails	Numeric value	218	
201	102	Total number of track geometry faults	Numeric value	87	
202	103	Total number of signalling faults leading to less certain signalling information than required	Numeric value	12	

203	104	Total number of unauthorised SPADs (signals passed at danger)	Numeric value	301	
204	105	Total number of broken wheels on rolling stock (in service)	Numeric value	1	
205	106	Total number of broken axles on rolling stock (in service)	Numeric value	1	
206	110	Total number of deficiencies and incidents	Numeric value (number per million train-km)	4.49E+00	
207	111	Total number of broken rails	Numeric value (number per million train-km)	1.58E+00	
208	112	Total number of track geometry faults	Numeric value (number per million train-km)	6.30E-01	
209	113	Total number of signalling failures leading to less certain signalling information than required	Numeric value (number per million train-km)	8.68E-02	
210	114	Total number of unauthorised SPADs (signals passed at danger)	Numeric value (number per million train-km)	2.18E+00	
211	115	Total number of broken wheels on rolling stock (in service)	Numeric value (number per million train-km)	7.24E-03	
212	116	Total number of broken axles on rolling stock (in service)	Numeric value (number per million train-km)	7.24E-03	
213	C00	Total cost for all accidents	Numeric value (euro)	40 139 107.527	
214	C01	Cost for people killed	Numeric value (euro)	31 201 397.849	
215	C02	Cost for people injured	Numeric value (euro)	2 675 483.871	
216	C03	Cost for replacement or repair of damaged rolling stock and railway infrastructure	Numeric value (euro)	4 158 387.097	1
217	C04	Cost for delays, disruption and rerouting of traffic, including extra costs for staff and loss of future revenue	Numeric value (euro)	2 103 838.710	1
218	C10	Total cost for all accidents	Numeric value (euro per million train-km)	2.90E+05	
219	C11	Cost for people killed	Numeric value (euro per million train-km)	2.26E+05	
220	C12	Cost for people injured	Numeric value (euro per million train-km)	1.94E+04	
221	C13	Cost for replacement or repair of damaged rolling stock and railway infrastructure	Numeric value (euro per million train-km)	3.01E+04	1
222	C14	Cost for delays, disruption and rerouting of traffic, including extra costs for staff and loss of future revenue	Numeric value (euro per million train-km)	1.52E+04	1
223	W00	Total number of lost working hours for railway staff, including the staff of contractors as a consequence of accidents	Numeric value	1794	

224	W10	Percentage of lost working hours relative to total number of working hours for railway staff, including the staff of contractors	Numeric value (%)	0.00005%	
225	T01	Percentage of tracks with ATP in service	Numeric value (%)	72.00%	
226	T02	Percentage of train-km on tracks with ATP in service	Numeric value (%)	96.00%	
227	T03	Total number of level crossings	Numeric value	11 352	
228	T04	Total number of level crossings per track-km	Numeric value	7.06E-01	
229	T05	Percentage of level crossings with automatic or manual crossing protection	Numeric value (%)	31.00%	
230	A01	Total number of audits accomplished	Numeric value	156	
231	A02	Percentage of audits accomplished compared to number planned	Numeric value (%)	88.14%	
232	R01	Number of train kilometres	Numeric value (million train-km)	138.194	
233	R02	Number of passenger kilometres	Numeric value (billion passenger-km)	10 838	
234	R03	Number of kilometres of rail (double-track lines considered separately)	Numeric value (km)	16 075.491	
235	R04	Total hours worked	Numeric value	36 070 744	
Definition used					

1. National definition, see explanation in Chapter J.

Annex D: List of all important changes in national law 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	Section 2a of the Investigation of Accidents Ordinance (1990:717) and Section 5 of the Ordinance (2007:1028) with instructions for the Swedish Rail Agency	1 July 2007 and 22 November 2007	Art. 19-21 Directive 2004/49/EC and Art. 18 Directive 2004/49/EC	Directive 2004/49/EC (Art. 19-21) specifies requirements of independent accident investigation bodies. As the Swedish Rail Agency is an NSA, accidents should no longer be investigated by the Swedish Rail Agency. In accordance with Directive 2004/49/EC (Art. 18), NSAs must publish an annual report concerning their activities.
Legislation concerning notified body, assessor, third parties' bodies for registration, examination, etc.	No change to national legislation, although there has been an amendment to Annex VI (Directive 2001/16/EC last amended by Directive 2007/32/EC) which affects the significance of monitoring that is to take place according to national legislation (Chapter 2 Section 9 of the Swedish Railway Act (2004:519))	Published in the Official Journal of the European Union of 2 June 2007, coming into force 20 days after publication		Introduction of intermediate monitoring explanation in order to simplify things for manufacturers, for example

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
National regulations concerning rail safety				
Regulations concerning national safety targets and safety methods	No change			
Regulations concerning requirements of safety management systems and the issuing of safety certificates to railway undertakings.	Chapter 2 Section 5 and Chapter 3 Section 3 of the Swedish Railway Act (2004:519) Swedish Rail Agency regulations (JvSFS 2007:1) on safety management systems and other safety regulations for railway undertakings Swedish Rail Agency regulations (JvSFS 2007:3) on applications for a permit for railway operations	Law in force 1 July 2007 Regulations in force 5 September 2007	Art. 9-10 Directive 2004/49/EC	New rules concerning safety regulations and certificates for railway undertakings
Regulations concerning requirements of safety management systems and the issuing of safety authorisations to infrastructure managers	Chapter 2 Section 5 and Chapter 3 Section 7 of the Swedish Railway Act (2004:519) Swedish Rail Agency regulations (JvSFS 2007:2) on safety management systems and other safety regulations for infrastructure managers Swedish Rail Agency regulations (JvSFS 2007:3) on applications for a permit for railway operations	Law in force 1 July 2007 Regulations in force 5 September 2007	Art. 9 and 11 Directive 2004/49/EC	New rules concerning safety regulations and authorisation of infrastructure managers
Regulations concerning requirements of vehicle owners.	Chapter 2 Section 13b of the Railway Act (2004:519) as well as Swedish Rail Agency regulations (JvSFS 2007:7) on the registration and marking of railway vehicles	1 December 2007	Directives 2004/50/EC and 2004/49/EC	For safety reasons, every vehicle used must be assigned an identification code. Vehicles should then be registered in a vehicle register
Regulations concerning requirements of maintenance workshops.	No change			

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
Regulations concerning requirements for authorisation to place in service and maintain new or significantly altered rolling stock, including regulations on the exchange of rolling stock between railway undertakings, registration systems and requirements for testing	Swedish Rail Agency regulations (JvSFS 2006:10) on the technical specification of interoperability relating to the subsystem 'Rolling stock' for conventional rail systems concerning freight wagons	Regulations (JvSFS 2006:10) in force 31 January 2007	Decision of the Commission 2006/861/EC	
Common rules for operating the railway network, including regulations affecting procedures for signalling and traffic.	No change			
Regulations concerning requirements for additional internal operational regulations that must be approved by the railway undertakings and infrastructure managers.	Chapter 2 Section 5(2) of the Swedish Railway Act (2004:519) Section 12 of the Swedish Rail Agency regulations (JvSFS 2007:1) on safety management systems and other safety regulations for railway undertakings Section 12 of the Swedish Rail Agency regulations (JvSFS 2007:2) on safety management systems and other safety regulations for infrastructure managers	Law in force 1 July 2007 and Regulations in force 5 September 2007	Internal additional regulations were previously in the Swedish Railway Inspectorate's regulations (BV-FS 2000:2) on safety provisions. These regulations were replaced by JvSFS 2007:1 and JvSFS 2007:2	
Regulations concerning requirements of staff with duties that are important for traffic safety, including selection criteria, health requirements, occupational training and certification.	No change			

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
Regulations concerning the investigation of accidents and incidents, including recommendations	Chapter 2 Section 6 of the Swedish Railway Act (2004:519) Section 2 of the Investigation of Accidents Act (1990:712) Section 2a of the Investigation of Accidents Ordinance (1990:717)	1 July 2007	Art. 19-21 Directive 2004/49/EC	Amendments made in order to comply with the criteria specified in Directive 2004/49/EC concerning the investigation of accidents. The Directive also places requirements on the independent investigating body for accidents. As the Swedish Rail Agency is an NSA, accidents should no longer be investigated by the Swedish Rail Agency.
Regulations concerning requirements for CSIs, including reporting and analysis.	Chapter 2 Section 5a of the Swedish Railway Act (2004:519)	1 July 2007	Art. 9.4 and 18 Directive 2004/49/EC	The requirements of Directive 2004/49/EC that railway undertakings and infrastructure managers must submit safety reports to the safety authority (Art.9.4) and that the safety authority must submit an annual report to the Agency (Art. 18).

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
Regulations concerning requirements for authorisation to place in service rail infrastructure (tracks, bridges, tunnels, ATC, radio, signalling, interlocking, level crossings, platforms etc.).	Chapter 3 Section 7 of the Swedish Railway Act (2004:519) Swedish Rail Agency regulations (JvSFS 2007:3) on applications for a permit for railway operations	Law in force 1 July 2007 Regulations in force 5 September 2007	Art. 11 Directive 2004/49/EC	New rules concerning authorisation of infrastructure managers

Annex E: The development of safety certification and authorisation

E.1 Safety certification pursuant to Directive 2001/14/EC

Number of safety certificates issued under Directive **2001/14/EC** to railway undertakings in 2008	in own country	0
	in another Member State	0

Note on E.2-E.6: A '?' has been placed in those boxes where the Swedish Rail Agency is unsure as to how the information can be returned.

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

		New	**Updated/ amended**	**Renewed**
E.2.1. Number of valid Part A safety certificates held by railway undertakings registered in 2008	in Sweden	22	1	0
	in another Member State	?	?	?

		New	**Updated/ amended**	**Renewed**
E.2.2. Number of valid Part B safety certificates held by railway undertakings registered in 2008	in own country	22	2	0
	in another Member State	0	0	0

			Accepted	Rejected	Pending
E.2.3. Number of applications for **Part A safety certificates** submitted by railway undertakings registered in 2008	in Sweden	New certificates	22	0	0
		Updated/amended certificates	1	0	0
		Renewed certificates	0	0	0
	in another Member State	New certificates	?	?	?
		Updated/amended certificates	?	?	?
		Renewed certificates	?	?	?

			Accepted	Rejected	Pending
E.2.4. Number of applications for **Part B safety certificates** submitted by railway undertakings registered in 2008	in Sweden	New certificates	22	0	0
		Updated/amended certificates	2	0	0
		Renewed certificates	0	0	0
	in another Member State	New certificates	0	0	1
		Updated/amended certificates	0	0	0
		Renewed certificates	0	0	0

E.2.5

List of countries in which railway undertakings that applied for Part B certificates in Sweden have their Part A certificates:

- Norway

E.3. Safety authorisation pursuant to Directive 2004/49/EC

	New	Updated/ amended	Renewed
E.3.1. Number of valid safety authorisations held by infrastructure managers registered in 2008 in Sweden.	147	133	0

		Accepted	Rejected	Pending
E.3.2. Number of applications for safety authorisations submitted by infrastructure managers registered in Sweden in 2008	New authorisation	147	0	0
	Updated/amended authorisation	133	0	0
	Renewed authorisation	0	0	0

E.4. Procedural aspects – Part A safety certificate

		New	Updated/ amended	Renewed
Processing time (average) after having received all necessary information between the receipt of an application and the final delivery of a Part A safety certificate in 2008 for railway undertakings	a certificate issued by Sweden	2 weeks/2-3 months	2 weeks/1 month	-
	a certificate issued by another Member State	?	?	?

In Tables E.4, E.5 and E.6, the time of 2 weeks concerns the average time between the receipt of all necessary information and a safety certificate decision, while 2-3 months and 1 month concern

the average time between the first application and a safety certificate decision. No certificates were renewed in 2008.

E.5. Procedural aspects – Part B safety certificate

		New	Updated/ amended	Renewed
Processing time (average) after having received all necessary information between the receipt of an application and the final delivery of a Part B safety certificate for railway undertakings in 2008	A certificate issued by Sweden	2 weeks/ 2-3 months	2 weeks/1 month	-
	A certificate issued by another Member State	?	?	?

E.6. Procedural aspects – Safety authorisations

		New	Updated/ amended	Renewed
Processing time (average) after having received all necessary information between the receipt of a safety authorisation in 2008 for infrastructure managers	A certificate issued by Sweden	2 weeks/ 2-3 months	2 weeks/2-3 months	-
	A certificate issued by another Member State	?	?	?