TRANSPORT STYRELSEN

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RAILWAY SAFETY REPORT

SWEDISH TRANSPORT AGENCY 2009 ANNUAL REPORT PURSUANT TO ARTICLE 18 OF DIRECTIVE 2004/49/EC (JARNVAGSSAKERHETSDIREKTIVET)

Version information

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A SCOPE OF REPORT

This report aims to describe the safety of the Swedish railway system as proposed in the Railway Safety Directive[1] ('the Safety Directive'). The conditions of the Swedish railway system are mainly regulated by the Railway Act[2].

The EU Safety Directive (2004/49/EC) makes clear that all Member States shall submit an annual report on railway system safety to the European Railway Agency (ERA). This year's report, which covers 2009, is the fourth of its kind and primarily follows the guidance provided by ERA for said purpose. An amendment (2009/149/EC) has recently been made to Annex 1 of the Safety Directive. The Swedish Transport Agency is currently collaborating with Transport Analysis and Swedish Transport Administration to produce new indicators of societal costs due to accidents which are to be reported starting next year. An indicator that no longer needs to be reported is the number of working hours lost due to accidents. The amendment to the directive means that the Railway Board regulations (JvSFS 2008:1) on accident and safety reports will be revised.

Trams and subways are not included in this report. Because 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, activities on local and regional networks that are independent and intended solely for passenger or museum traffic, such as Saltsjöbanan and Roslagsbanan, are excluded from this report. Activities on rail networks which are not managed by the state and are used only by the infrastructure manager for transporting private goods are also excluded from this report.

B INTRODUCTION

B.1 Background and target audience

This report was produced on behalf of and for the European Railway Agency (ERA). However, it may also be of interest to employees of the Transport Agency, the Ministry of Enterprise, Energy and Communications, Traffic Analysis, other government agencies and research institutes, railway undertakings, infrastructure managers, and other stakeholders in the rail industry. The report may also be of interest to those who are generally interested railways and rail safety.

The report will be published on the Transport Agency website www.transportstyrelsen.se and the ERA website www.era.europa.eu where the reports from other countries will also be published. ERA also publishes a consolidated report based on the reports submitted by the member countries.

The Safety Directive regulates that the national safety authority of each member country shall submit a report to the European Railway Agency (ERA) no later than the 30 September each year[3]. The purpose of this report is to describe the national safety conditions and, in accordance

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1 Directive 2004/49/EC

2 Järnvägslagen (Railway Act) (2004:519)

3 Directive 2004/49/EC, Capital IV Article 18

with the Safety Directive, include a description of developments in railway safety, important changes in railway safety legislation and regulation, the development of safety certification and safety authorisation, and the results/experiences of national security/safety agencies' supervisory activities.

The Safety Directive makes clear that operators, i.e., railway undertakings and infrastructure managers, shall annually submit a safety report to the national security/safety agency no later than 30 June[4]. This report shall contain the following information in accordance with the Safety Directive: aggregate of the Organisation's safety objectives, reporting of data to the CSIs (common safety indicators), the results of the internal audit, and comments on the shortcomings and defects in the rail system that could be of importance for safety.

Swedish railways are governed by the Railway Act[5]. The government's Railway Ordinance[6] gave the Swedish Transport Agency the right to issue regulations to regulate the field in detail. Transportation Board's regulations are published in the Transportation Board's Statutes (TSFS).

Templates and guidance for the report have been prepared by a working group within the ERA, consisting of representatives from interested member countries' safety authorities (including Sweden). During the spring of 2007 in Sweden, a consultant group with representatives from both railway undertakings and infrastructure managers, contributed comments on the Railway Board's guidelines containing instructions and definitions for the safety reports of operators.

The Safety Directive included in the Second Railway Package has been incorporated into Swedish law since 1 July 2007. Annex 1 to the Safety Directive (which describes the reporting of CSIs) has recently been amended by Directive 2009/149/EC. Sweden has been involved in the working group that developed the revised Annex. The same working group has also developed common guidelines for the indicators to improve reporting consistency. Sweden adjusted the year's report on the CSIs to conform to the revised Annex as much as was possible. Some indicators are still missing data and new data reported is uncertain because it is the first time they are reported. As of next year's reporting the member countries are bound to follow the new Annex.

In order to simplify and reduce the administrative burden on operators who are subject to reporting, the Transport Agency has collected safety reports together with other accident data collected and reported to Traffic Analysis since 2008 (which, in turn, self-publishes the data on official accident statistics and also reports this data to the EU statistical office; Eurostat). However, there are some differences in definitions which mean that the numbers differ slightly, see Section D.2 and Section J. Another way to simplify the burden on the reporting operators is that they are offered a choice of reporting through a web-based form on the Transport Agency website, by e-mail, or traditional mail.

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4 Directive 2004/49/EC, Capital II, Article 9

5 Järnvägslagen (Railway Act) (2004:519)

6 Järnvägsförordningen (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 who wish to conduct rail operations in Sweden must apply for a permit to that effect from the Transport Agency. Permits are reviewed in accordance with the terms in the Swedish Railway Act and granted to railway undertakings and infrastructure managers separately. Therefore, an Organisation may have one or more authorisations. For example, an infrastructure manager may in some cases have rail transport authorisation. In Swedish legislation infrastructure managers and railway companies are defined as follows[7]:

Railway undertakings: 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 524 operators licensed to conduct railway operations in 2009.

Permit holders	**2009**
Railway undertakings	99
Infrastructure manager	425
Total	**524**

Table 1: Data on number of operators in 2009, see list in Annex A.2.1 and A.2.2. The figures do not include transport operators and track owners that operate trams or subways unless they also are the railway undertaking or infrastructure manager.

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 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 conditions for passenger and freight services were separated in 2008. Passenger traffic was still regulated in 2008 and a state-owned company had the exclusive right to operate inter-regional passenger traffic. 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. On 1 October 2009, the international passenger market was opened. Parliament's decision also states that the market is fully open from 1 October 2010. Freight traffic is already open to competition but is still dominated by the company which was formerly a part of the state railway administration.

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[7] Railway Act (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 2009 there were 425 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 is comprised of the municipalities and ports licensed to conduct railway operations.

This report is based on 136 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

See Section I.

C ORGANISATION

C.1 Transport Agency Organisation

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 Transport Agency also has a normative role and supervises the railway system. 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 Transport Agency is also a regulatory body under Article 30 of Directive 2001/14/EC[8] but this report concerns the mission of the Transportation Board under the Safety Directive.

The Swedish Transport Board's mission is specified in the ordinance[9] with instructions for the Transport Board. The government states in its annual spending authorisation what conditions are to apply to the operation of the Swedish Transport Agency over the next fiscal year. The spending authorisation contains, among other things, targets for transport policy, requirements for the Swedish Transport Agency to report to the government on what targets it has achieved, and budgetary constraints.

The Swedish Transport Agency is a board authority, which means that the agency is headed by a board responsible for the operations being conducted efficiently, with good internal management, and controlled before the government. The Director-General is on the board and is responsible for ongoing operations.

The Swedish Transport Agency has 15 locations throughout the country and has approximately 1600 employees. The majority of operations are based in Borlänge, Norrköping and Örebro. The head office is in Norrköping. The Director-General has his office there as well as the following departments: finance, information, IT, legal, development, and personnel. In addition to the departments headquartered at the Transport Agency, there are six other departments, four of which represent one mode of transport: the railway department, aviation department, maritime department, and road department. The fifth is the traffic registry. The Organisation is under development and in 2011 the current road department and rail department will be merged into a single department.

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[8] The Swedish Transport Agency has the task of monitoring whether the railway services market functions effectively from a competition perspective and for reporting any shortcomings to the Swedish Competition Authority. As part of its supervision 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 use of the rail infrastructure are competition-neutral and non-discriminatory. The Swedish Transport Agency shall consult with the Swedish Competition Authority on competition matters. In addition, the Swedish Transport Agency must settle disputes between railway undertakings and infrastructure managers if they disagree on whether a decision by the infrastructure manager is lawful. Furthermore, the Swedish Transport Agency is required to monitor whether railway undertakings and infrastructure managers meet the specific requirements imposed on the financial accounting of such operators.

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

The railway department currently has five units: analysis, infrastructure, legal, rail undertakings, and technical. The infrastructure unit and the railway undertaking unit issue permits and perform a supervisory role. In order to obtain a permit, the safety management systems of both the infrastructure manager and the railway undertaking are tested. The technical unit issues approvals of subsystems. To obtain subsystem approval prior to implementation, the applicant must show that the subsystem is secure and interoperable. The legal unit's responsibilities include the development of regulations. The analysis unit is responsible for analysis, statistics, management of the Swedish Accident Investigation Board recommendations, and the preparation of this report.

The Transport Agency's rail department has about 60 employees, consisting of 35 men and 25 women. The corresponding distribution throughout the whole of the Transport Agency is 729 men and 892 women. Annex B contains the Transport Agency's Organisational chart.

C.2Transport Agency's rail department relationships

This section describes the relationships of the Transport Agency's rail department with other agencies. Because the Transport Agency has responsibility for maritime, aviation, and road traffic, as well as a number of other areas, these are not covered in this report.

The Swedish Transport Agency is not a solitary authority with exclusive responsibility for regulation of the entire rail system. There are several other national authorities who 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 Civil Contingencies Agency (MSB). 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 2) illustrates 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). MSB has an overarching and coordinating responsibility and in their work for a safer society. The Swedish Transport Agency cooperates with the Swedish Civil Contingencies Agency (hereinafter referred to as MSB) on, for example, supervision of the transport of dangerous goods.

The Transport Agency reports accidents and incidents to the Swedish Accident Investigation Board, which is an independent investigative body under the safety directive. The Swedish Accident Investigation Board submits its recommendations to the Swedish Transport Agency which, acting as a safety authority, shall follow-up and take adequate measures in response to those recommendations. The Swedish Transport Agency shall also report back to the Swedish Accident Investigation Board regarding how their recommendations have been dealt with and the measures taken in response to them (see Section D.3 of this report).
The Transport Agency also cooperates with Traffic Analysis. The Swedish Transport Agency submits statistical data to Traffic Analysis (formerly SIKA, until April 2010), which in turn submits accident statistics to Eurostat.

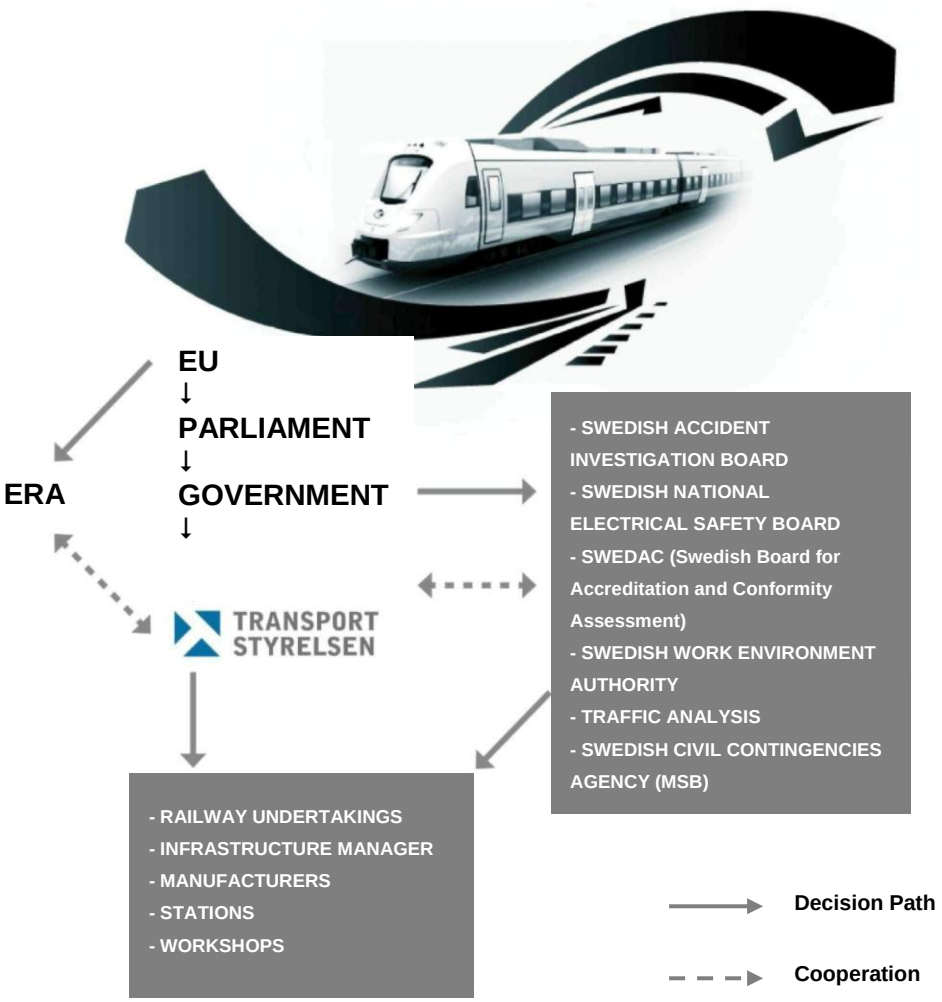

Figure 1: The Transport Agency's railway department's national relationships.

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 that are sometimes also authorised as both railway undertakings and infrastructure managers. Manufacturers are not included in the Swedish Transport Agency's area of responsibility. However, the Swedish Transport 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 uniform level of safety in the rail system involves all stakeholders in the rail system as described in Figure 2. For example, the Transport Agency works on following-up the safety goals stated by the government. The Swedish Transport Agency is supported in this in the form of safety supervision and regulations, among other things. The operators, in turn, follow the prescribed regulations and implement measures where necessary.

Hence, the national safety level is dependent on a strong and well-functioning chain, from the government to the Swedish Transport 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 Transport Agency and the operators.

D.1 Initiatives to maintain/enhance safety

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

Since 1996, the supervision of the various actors in the Swedish railway sector has been aimed at verifying that the operators have a well functioning self-regulation system and are able to take appropriate measures when a deviation occurs. Hence, as part of their supervisory activities, the Swedish Transport Agency verifies that the operators' safety management system is in compliance with the current regulatory framework and that they have the organisation, routines, delegation of responsibility, finances, etc., to ensure that they can continue to meet the requirements of their permits.

The measures/actions that the Swedish Transport Agency has a mandate to take include bans with or without fine, injunctions with or without fine, and ultimately the suspension of permits. It is the operators who take the actual measures to reduce the number of unwanted events (accidents, incidents, and other deviations). The Swedish Transport Agency monitors whether the operators take appropriate action.

Accident/incident or other deviation that triggered the activity			Safety-enhancing activities decided upon
Date	**Place**	**Description of event**	
05/01/2009	Furet	Train was placed on block section without previous train reported in.	The Transport Agency has urged the Transport Administration to review the routines and barriers for block sections. The work is tracked via meetings.
30/03/2009 01/04/2009	Sällinge-Frövi Älgarås	Track worker was nearly hit by train.	An inspection has been conducted in which the Transport Agency has urged the Transport Administration to improve attitudes towards safety and preventative planning.

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

Safety-enhancing activity	Description of trigger	Description of the problem area
Demanded that procedures are established for the erection of a board, "continued movement permitted."	Discovered during inspection that boards had been put up without a decision at the correct management level and without a safety review.	Improperly erected board can give positive movement authorisation when movement is not actually permitted.
Inspection of the companies concerned in regards to control and management of vehicle maintenance competence.	Shortcomings were found in several companies regarding management and control of vehicle maintenance competence.	The company's management and control of the staff's maintenance competence is essential for safety and continuous safety work with constant improvements.
Inspection of companies that handle timber transport by rail.	Most incidents have been reported with lost hours and reports that many lost hours lie along the railways of Sweden.	Corporate practices and preventive measures for safe timber transport are important aspects of safety work.
Investigation at the Swedish Rail Administration because of questions regarding the adaptation of operations to new rail traffic rules.	Information from railway undertakings that the Swedish Rail Administration had not designated which siding was a "parking track."	Lack of such information made it difficult for railway undertakings to secure parked carriages against rolling.

Table 3: Examples of safety-enhancing activities by the Swedish Transport Agency with triggers other than one specific event.

D.1.2 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. In addition to the CSIs, the safety reports include information on the operator's safety targets undertaken activities designed to increase safety

D. 1.2.1 Safety targets

The operators that have railway operations as their main activity have all specified their safety targets. Of all the safety reports received, 85 operators out of 136 specified their safety targets (63%). 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; the majority of them have therefore not reported safety targets.

The targets provided are often expressed in terms of no deaths or serious injuries as a result of the organisation’s own activities. One of the reporting railway undertakings engaged in passenger transport has carried out the following measures (besides ongoing measures linked to investigation results) to achieve the target: analysis of previous accidents involving persons, and MTO analysis. The same railway undertaking also has the target "It must be safe and secure to go by train," which is followed up via the undertaking's safety management system.

The road safety policy of another cargo transport railway undertaking is to be Sweden's safest transportation and logistics. To achieve this, the company consistently works on good planning, the right competence, clear leadership, and professional performance. It stresses that all employee's open and honest reporting of deviations is the necessary basis for safety improvements. A number of undertakings have the improvement of deviation reporting as one of their safety targets, and one measure named by a company for achieving this target is that all employees shall be involved in the safety work. Other objectives mentioned were to increase employee understanding of governing documents and increase the number of reviews.

The state IM has mentioned the following among its measures to increase safety:

- 48 level crossings on the state railway network have been dismantled or closed in 2009. Beyond that, the safety of crossings with poor road profiles has been improved.
- The IT support "E-tam" has been put into service on block sections. The system provides support for dispatcher decisions and aims to reduce the risk of human error during blocking.
- Approximately 36 000 primary school pupils have been informed at school by public relations officers and specially produced films directed at children of different ages.
- Sponsorship of research at Karlstad University on suicide and prevention of suicide on railways. A new research project on unauthorised railway access (trespassing) has been started during the year.

An example of an area in which undertakings are collaborating is joint fact-finding on unauthorised SPADs (signals passed at danger). The answers in the safety reports also contain examples of quantitative targets such as a reduction in the number of accidents to a certain level.

D. 1.2.2 Action plans with safety-enhancing activities

Of the safety reports received, 38% of operators indicated that they have taken safety-enhancing measures due to an occurrence or incident or as preventive measures. Most of these have reported more than one safety-enhancing activity. There need not be a serious consequence associated with the occurrence. 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 as preventive measures, such as improved deviation 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
Low quality of the events registered at Synergi.	Non quality-assured reports.	Monthly meetings with the Synergi administrator. Development of new causal model.
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 significant accidents if staff does not have adequate knowledge.	Systematic monitoring of personnel in traffic safety service. Periodic in-service training on road safety provisions.
Unacceptable number of unauthorised SPADs (signals passed at danger).	Risk of serious train accident.	Continued analysis of past events. The development of a specific action programme.
Increased frequency of: - Passenger boarding accidents - Injuries to passengers inside the train	Risk of serious injury to persons.	A more in-depth causal analysis.
Increased frequency of incidents resulting from improper operation.	Risk of train accident.	A more in-depth causal analysis.
Proactive improvement activity	Reduced number of safety-related errors on the carriage and load	Personal confirmation of functional checks of freight wagons. Systems and procedures for personal confirmation of the functional checks have been implemented to increase the personal responsibility for functional wagon checks
A number of stocks were reported lost from timber loads during the summer and autumn of 2008.	Reduced number of lost stocks from timber loads.	Industry collaboration for safe transportation of round logs. A cooperation to lay the foundation for secure timber transport has resulted in a joint policy document signed by The Association of Swedish Train Operating Companies, Swedish Forest Industries Federation, and the Swedish Association of Road Haulage Companies. The cooperation covers training, clear division of accountability, and joint monitoring of the loading, unloading, and transport of timber by rail.
Proactive improvement activity	Higher level of competence for staff in traffic safety services	Continued modernisation of safety training. Annual in-service safety training will be implemented in an annual cycle in which the traditional lesson-based training is alternated with self-study in an interactive computer environment, activity-related training in the field and knowledge checks. The focus is to introduce methods for behaviour-based safety coaching which is inspired by several industrial companies where the reinforcement of good behaviour is the key to success.

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 been highly focused on level-crossing measures, it is now more diversified and aimed at measures to prevent impacts with people as well as various safety-enhancing measures of the infrastructure facilities. The state-owned infrastructure manager has reported ongoing activities initiated by significant 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 29/03/2005. An empty freight train collided with an LGV 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 locomotive and 3-4 carriages were derailed, causing major damage to the track and overhead lines.	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.
Collapse in Ånn 30/07/2006. 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. Extra resources have been set aside for drainage systems in 2010/2011.
Hok - accident 2003 (collision on a block section). A service train manoeuvre occurred in the path of an oncoming train, colliding with it when at a stand-still at the platform.	Could have had very serious consequences.	Reinforcement of the block system through forced MobiSIR expansion, electronic block journal, and ERTMS regional.
Overheating and inadvertent braking (without driver input) on various occasions can lead to derailment on the line at high speeds.	Could have had very serious consequences.	More and better detectors.
Near collision at Torneträsk on 29/07/2008.	Could have had very serious consequences.	Connection error in signalling system leads to a review of decision-making structure in connection with signalling work.

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

D.2Common 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 of five years. Because 2010 is the fourth year that information has been collected in this way, the indicators for 2009 are presented as an average based on the values for four years (2009, 2008, 2007 and 2006). Because some indicators are new, the value for 2009 is presented. The CSIs consist of data on accidents and deviations which have occurred set against the number of train kilometres or, in certain cases, passenger kilometres. Definitions used for the collected data are presented in Section J. All data collected are presented in Annex C.

As certain infrastructure managers and railway undertakings are exempt from submitting safety reports (see section B.2.1), the indicators do not provide a measure for all railways in Sweden. For example, operations on local and regional networks that are independent and intended solely for passenger or museum traffic, such as Saltsjöbanan and Roslagsbanan, are excluded from this report. The figures for the number of deaths and serious injuries are therefore different from the figures provided annually by Sweden to Eurostat and from the figures that are published annually in Traffic Analysis's official statistics publication, Bantrafikskador[10].

D.2.1 Accidents

In 2009 there were 46 (46, 56, and 46) accidents to be reported in accordance with Security Directive Annex 1[11]. Figures in parentheses refer to 2008, 2007 and 2006 respectively. The average for the period of 2006-2009 is 0.36 accidents per million train kilometres. In short, accidents involving railway vehicles in motion resulting in the death or serious injury of at least one person, 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.

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

[11] 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 EUR 150 000. Accidents that cause environmental damage or which significantly delay traffic are also accidents that must be reported. Incidents of suicide are excluded. See definitions, Annex F.

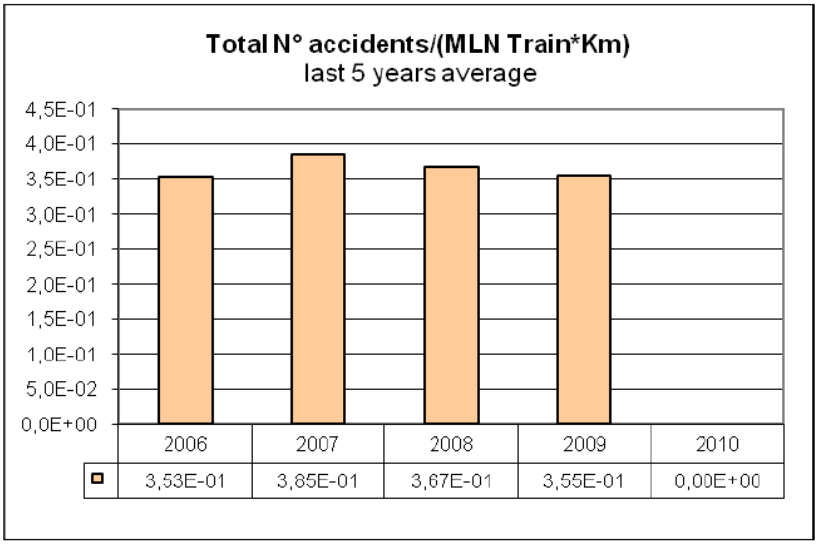

Figure 2: Diagram of number of accidents per million train-km.

These accidents are in turn divided into different categories: train collisions, train derailments, level crossing accidents, accidents to persons caused by rolling stock, fires in rolling stock, and other accidents.

The accident categories for which the most accidents were reported in 2009 are: accidents to persons caused by rolling stock in motion (20, 13, 20, and 16) and level crossing accidents (13, 6, 14, and 13). All 7 (14, 11, and 5) train derailments and the single collision reported for 2009 were reported because of cost and/or significant traffic disruption. None of the train derailments were reported due to personal injuries. Several of the accidents classified as other accidents are also collisions and derailments, but with shunting movements, and in most cases reported because they led to significant consequences in terms of costs of damage and / or major traffic disruptions. However, they did lead to any fatalities. No major fires (3, 4, and 3) have been reported for 2009.

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 being present on the track. In addition to these accidents, in 2009 there were also 67 (71, 78, and 68) suicide attempts which resulted in death or serious injury.

D.2.2 Fatalities and serious injuries

This group of indicators includes the number of fatalities and seriously injured. In 2009, there were 19 (13, 23, and 16) fatalities and 15 (6, 14, and 13) serious injuries. Using the mean of 2009, 2008, 2007 and 2006, the indicator for number of deaths per million train-km is 0.13. This means that 1.3 people were killed per 10 million train-km travelled. No passengers or employees were killed during the year.

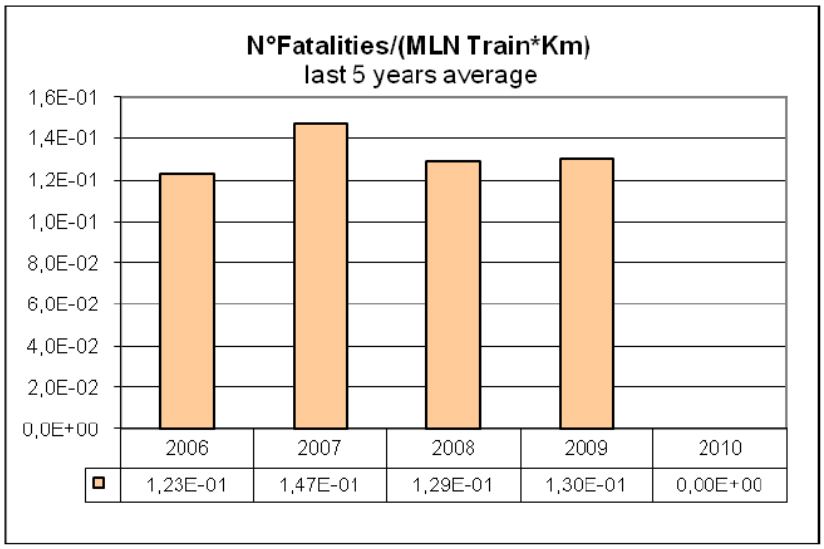

Figure 3: Indicator for fatalities per million train kilometres.

The indicator for number of serious injuries per million train kilometres is 0.09 per million train kilometres, as shown by the graph below.

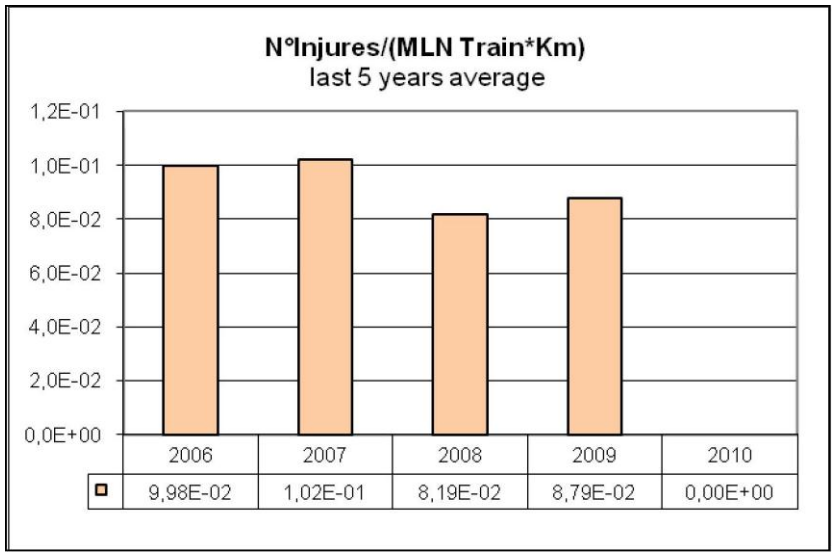

Figure 4: Indicator for number of serious injuries per million train kilometres.

In 2009, 15 (6, 14, and 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. Information on the degree of injury is currently obtained from the police, who do not always have information on the exact time length of hospitalisation.

In level-crossing accidents it was the users of the level crossing, i.e. road users, that were killed (6, 4, 9, and 7) or seriously injured (7, 1, 8, and 5). Accidents to persons mainly involved unauthorised persons on the track being struck or run over. In these accidents, 13 (9, 14, 9) persons were killed and 7 (4, 6, and 7) were seriously injured. It should be noted that an accident to a person where that person is struck or run over by a train is often fatal. However, in level-crossing accidents it is often a matter of chance whether these do or do not result in some degree of personal injury (for example when a vehicle's interior is left undamaged in the accident).

No passengers or employees were killed or seriously injured during derailments, fires, level-crossing accidents, or collisions. Three employees have been seriously injured in the track area and one employee has been seriously injured during a shunting collision with a buffer stop. Two passengers have been seriously injured during boarding and disembarkation respectively, of trains in motion.

D.2.3 Technical safety of infrastructure

This group of indicators includes the percentage of tracks fitted with ATP/ATC (Automatic Train Protection/Control) or ERTMS and the percentage of level crossings with automatic or manual crossing protection systems. Approximately 65% of tracks have ATP/ATC. The majority of traffic is therefore on tracks which are extremely safe in technical terms.

The state-owned infrastructure manager has worked actively for several years on improving the safety of level crossings, resulting in a downward trend in the number of serious level-crossing accidents. One of the measures was to remove level crossings that were lacking an active crossing protection system and replace them with level crossings with an automatic crossing protection system. Approximately 21% of all level crossings are fitted with some form of crossing protection system. 1154 temporarily closed level crossings are included in the group of "passive grade crossings." Excluding these brings the figure to 26%. On state-owned infrastructure about 34% of level crossings have some form of crossing protection system. Submission of information on level crossings divided by type of crossing protection system is new to the reports, thus there is an uncertainty in this year's task.

Type of level crossing	Number
Number of level crossings with automatic acoustic and/or visual systems that warn level-crossing users (1)	900
Number of level crossings with automatic barrier systems (whole or half barriers, including gates or similar) that warn/protect level-crossing users (2)	22
Number of level crossings with automatic systems comprising both 1 and 2	2 259
Number of level crossings with both 1 and 2 that are also equipped with obstacle detectors	79
Number of level crossings with manually controlled acoustic and/or visual systems that warn level-crossing users (3)	83
Number of level crossings with manually controlled barrier systems, including gates or similar that warn/protect level-crossing users (4)	5
Number of level crossings with manually controlled systems comprising both 3 and 4	41
Number of passive level crossings	8 012
Total:	11 371

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)	757
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	2 148
Number of level crossings with both 1 and 2 that are also equipped with obstacle detectors	79
Number of level crossings with manually controlled acoustic and/or visual systems that warn level-crossing users (3)	20
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	0
Number of passive level crossings	8 731
Total:	

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

D.2.4 Deviations

This indicator combines all reported deviations relating to broken rails, track geometry faults, broken axles and wheels, unauthorised SPADs (signals passed at danger), and wrong-side signalling failures. In 2009, 723 (594, 516, and 523) deviations were reported and the indicator gives a value of 4.3 deviations per million train kilometres as an average for 2009, 2008, 2007, and 2006.

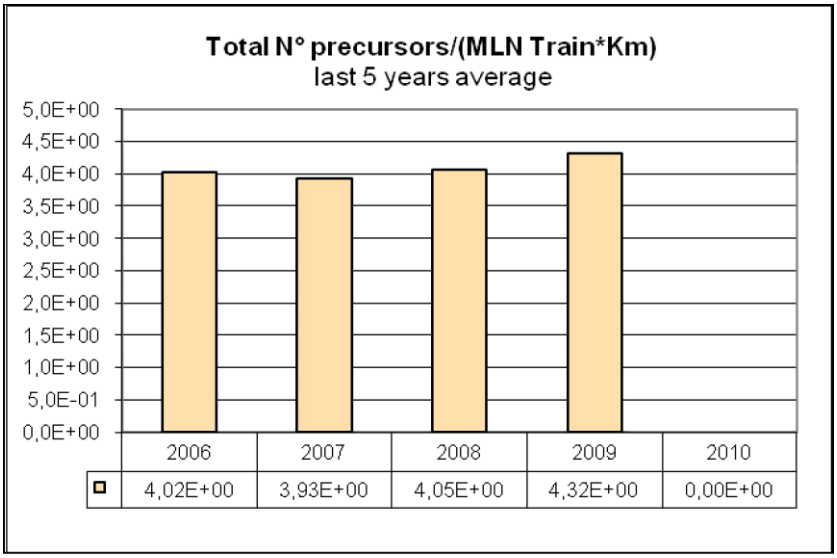

Figure 5: Indicator of number of deviations per million train-km

As in previous years, two types of deviations clearly dominate this category of events: 362 (275, 217, and 187) SPADs and 235 (218, 187, and 241) broken rails. Significantly, the number of reported unauthorised SPADs has increased every year since reporting began. It should be noted that this report includes all incidents involving broken rails, i.e. also those on sidings. The number of broken rails on railway tracks is therefore lower. Track geometry faults is also a large group of 115 (87, 102, and 79) reported deviations while it may be stated that the number of other deviations were relatively few. There were 9 (12, 6, and 6) reported wrong-side signalling failures, 0 cases of broken wheels (1, 2, and 8), and 2 cases of broken axles (1, 2, and 2).

The number of unreported deviations is unclear. This is probably because not all deviations 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 an unauthorised SPAD, for example. However, it is important to continue to monitor the deviations as they may be harbingers of significant accidents. As the basis is unreliable, an increased number of reported deviations may be just as much the result of better methods for recording deviations and applications of definitions 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. The costs are expressed in Euro[12].

ERA has developed new methods for reporting costs that will be adopted for reporting as from next year. The new methods are based on societal costs instead of the costs to railway undertakings and infrastructure managers. However, two types of costs are still based on the costs experienced by railway undertakings and infrastructure managers.

- Experience has shown that railway undertakings and infrastructure managers bear the environmental costs of restoring the damaged area to the condition it was in before the railway accident. Railway undertakings' reported costs for 2009: EUR 19 436
- The cost of providing new rolling stock or infrastructure with the same function and technical parameters as those that cannot be repaired, and the cost to restore the rolling stock or infrastructure to the condition they were in before the accident. Railway undertakings' reported costs for 2009: approximately EUR 16 million

The reporting operators have stated that this information is uncertain.

The following costs shall be based on societal costs:

- Costs of fatalities (about EUR 46 million in 2009) and serious injuries (around EUR 7 million in 2009) in railway accidents
- Costs of delays due to accidents

The information on costs for fatalities and serious injuries is based on calculated values for deaths and serious injuries from a socio-economic perspective, produced by SIKA in PM 2008:3 Socio-economic principles and calculation values for the transport sector: ASEK 4 *2005:16.* The calculated values are then multiplied by the number of fatalities and serious injuries.

Costs of delays due to accidents are not included in reporting for 2009. The Transport Agency is currently collaborating with Traffic Analysis and the Traffic Administration to take on the task of reporting for 2010.

D.2.6 Safety management

For 2009, the key figure used is the ratio of system audits that operators planned; 221 (177, 194) and the number of audits performed; 164 (156, 188). 58 of 136 operators have indicated that they planned and performed at least one system audit in 2009. A number of operators have indicated that they planned to, but did not carry out system audits in 2009. An example of an audit area reported: examination of whether the documents relating to safety management are in place in sufficient quantities, are known in the Organisation, and are applied. Some examples of

[12] For calculating costs in Euro, an exchange rate of EUR 1 = SEK 9.30 was used for 2006, 2007, 2008, and 2009 where reporting railway undertakings and infrastructure managers quote their costs in SEK.

shortcomings found: the use of unauthorised personnel, lack of compliance with the governing documents, and shortcomings in the training of administrative staff.

D.3Result of safety recommendations

In 2009 the Swedish Transport Agency worked with a number of recommendations from the Swedish Accident Investigation Board. The following describes how each recommendation was handled.

RJ 2008:01

Case TSJ 2009-575, reply date: 24/02/2009. Case SHK J-05/06, released 10/07/2008.
Derailment, Linköping - Vikingstad 29/03/2006

The Swedish Rail Agency has received the following from the Swedish Accident Investigation Board: report RJ 2008:01, Derailment of train 49302, followed by train 8789 colliding with timber from a carriage that had overturned, Linköping - Vikingstad line, E County, on 29 March 2006.

The Rail Agency was broken up, reformed 01/01/2009 as a part of the Transport Agency under the title of Railways Department, and the Transport Agency is now responsible for the tasks that were previously handled by the Rail Agency. Therefore, the Transport Agency also takes on the recommendations in the aforementioned report in which the Rail Agency recommends:

- appropriately ensure that operators with permits earlier issued, in July 2007, have safety management and documentation that meets the basic requirements for staff competence, vehicle maintenance, and use of contractors (including cases where a legal person conducts their own business on behalf a permit holder) (RJ 2008:1 R1).

In addition, the report states the following:
In light of the changes made in 2007 to the Railway Act (2004:519) and with reference to the issued regulations on safety management of railway undertakings (JvSFS 2007:1), SHK (Accident Investigation Board) submits no recommendations regarding licensing/permits, etc.

The Transport Agency's actions in response to the National Accident Investigation Boards' recommendations in the report RJ 2008:01

Recommendation 2008:1 R1
The Transport Agency finds that the approach has changed with regard to the review of permits under the Railway Act after the implementation of the second railway package into Swedish law. Currently under review are all permits issued after 1 July 2004 and subsequently issued after 1 July 2007. Because the legislator set an expiration date of 31 December 2010 for the validity of any permit issued under provisions before 1 July 2007, all permits are to be reviewed in accordance with the new provisions. Issued safety certificates also have a limited validity of five years, at which point a new review shall be performed.

The Transport Agency's review of safety management systems is now based on the candidates' ability to show that there are established processes that govern safety controls and all of its subsystems (Part A) and that the operator has network-specific tailored procedures (Part B) for the infrastructure

on which they intend to operate. In that respect, it may be deemed that inspections have been improved in the permitting process in accordance with the recommendations of the investigation. Each issued permit is classified with a risk value. This is then the basis for inspections. In addition, the authority applies a risk based approach to its inspections.

RJ 2008:02
Case TSJ 2009-574, reply date: 24/02/2009. Case SHK J-17/07, released 06/10/2008.
Incident of collision, Stenungsund - Ytterby 19/10/2007

The Swedish Rail Agency has received the following from the Swedish Accident Investigation Board: report RJ 2008:02, incident of collision between trains 67373 and 3743 on the route Stenungsund - Ytterby, O county, on 19 October 2007.

The Rail Agency was broken up, reformed 01/01/2009 as a part of the Transport Agency under the title of Railways Department, and the Transport Agency is now responsible for the tasks that were previously handled by the Rail Agency. Therefore, the Transport Agency also takes on the recommendations in the aforementioned report.

In the aforementioned report the Rail Agency is recommended to urge:

- The Swedish Rail Administration to ensure that dispatchers can easily and simply obtain the correct phone numbers to contact drivers (RJ 2008:2 R1).
- The Swedish Rail Administration system for individual follow-ups to take into account the variations that occur in service (RJ 2008:2 R2).
- The Swedish Rail Administration to urgently expand absolute block sections or ERTMS-based safety systems on manually-dispatched lines with high traffic (RJ 2004:2 R1). (Previously published recommendation)
- The Swedish Rail Administration to identify and introduce more effective barriers in the system of phone dispatching (RJ 2004:2 R2). (Previously published recommendation)
- The Swedish Rail Administration to create effective follow-up systems to catch systemic shortcomings and deviations, such as in terms of compliance and local practice (RJ 2004:2 R6). (Previously published recommendation)

The Transport Agency's actions in response to the National Accident Investigation Boards' recommendations in the report RJ 2008:02

Recommendation 2008:2 R1

A targeted inspection has been conducted during the winter of 2009 in order to determine the extent of difficulties in reaching the drivers of trains. Earlier problems regarding a lack of tools to reach the train drivers have been remedied, according to the inspection results. In particular, all lines have been equipped with MobiSIR.

Recommendation 2008:2 R2

The need for a targeted inspection is under consideration.

Recommendations 2004:2 R1 and 2004:2 R2

The last corporate meeting of the Swedish Rail Administration was held 29/09/2008. The Swedish Rail Administration presented the following measures taken on routes without block systems:

- Restoration of K15-key's function.
- Expansion of MobiSIR on so-called service train manoeuvre lines (since the meeting, all lines have been equipped with MobiSIR, see 2008:2 R1).
- Limiting the number of service train manoeuvres (so that these movements instead occur as trains). This will be done automatically with the introduction of the Railway Board's traffic regulations (JTF).
- Introduction of a daily procedure where possible.
- Broadband connection on lines without block systems.

Additionally, the Swedish Rail Administration is also planning other measures such as the expansion of block systems and the implementation of the E-TAM system. The implementation of E-TAM is a high priority at the Swedish Rail Administration.

Transport Agency / Railways Department estimate that the above measures, under the prevailing conditions, are sufficient.

Recommendation 2004:2 R6

The Swedish Rail Administration's new Organisation provides opportunities for more efficient follow-ups due to the local mandate reduction. This means that there will be only one framework for each item, which is expected to provide good conditions for an effective system of follow-ups. The permit application has recently been checked to ensure that there are clear reporting channels and regulations for this. Future inspections will show how it works in practice.

RJ 2008:03

Case TSJ 2009-583, reply date: 2009-02-24. Case SHK J-23/07, released 13/12/2008.
Incident at level crossing, Sundbyberg 13/12/2007

The Swedish Rail Agency has received the following from the Swedish Accident Investigation Board: report RJ 2008:03, Incident of collision between an LGV and passenger train 2513 on Esplanaden in Sundyberg, AB county, on 13 December 2007.

The Rail Agency was broken up, reformed 01/01/2009 as a part of the Transport Agency under the title of Railways Department, and the Transport Agency is now responsible for the tasks that were previously handled by the Rail Agency. Therefore, the Transport Agency also takes on the recommendations in the aforementioned report.

The aforementioned report recommends the Rail Agency to:

- aim for an increased use of barrier detection systems at level crossings (RJ 2008:01 R1).

The Transport Agency's actions in response to the National Accident Investigation Boards' recommendations in the report RJ 2008:03

Recommendation 2008:03 R1

The Introduction of barrier detectors at a level crossing is a very costly measure and may have no effect without the addition of ATC. This means that the introduction of barrier detectors may not always be the optimal solution. Therefore, in order to reduce the number of accidents at level crossings, assessments must be made on a case by case basis regarding which action is most suitable. The most suitable measure may be to close the level crossing and reroute a road to a better equipped level crossing or grade separated crossing, or to building a grade separation. The Swedish Rail Administration currently spends a great amount of effort and money to reduce the number of level crossings and to improve the protection of those that will remain. At today's rate, about 100 level crossings are removed annually. The Transport Agency has therefore not seen a need to direct special inspections or actions towards this area. With regard to adapting existing level crossings to changing traffic flows, an inspection was conducted in 2008 which resulted in the Swedish Rail Administration's creation of a routine to handle this.

RJ 2008:04

Case: TSJ 2009-573, reply date 29/06/2009, SHK case J-02/08, released 17/12/2008.

Incident of collision on Alby - Ångebyn line 16/01/2008

The Transport Agency received the following recommendations in the investigation report regarding the event from the Swedish Accident Investigation Board:

The Transport Agency is encouraged to:

- Ensure that railway undertakings' safety management systems are adequate enough to ensure that staff has the right skills to perform their duties (RJ 2008:04 R1).
- Ensure that the Swedish Rail Administration immediately releases information about local conditions that may impact operations of other operators; such as gradient conditions (RJ 008:04 R2).
- Ensure that the Swedish Rail Administration implements decisions that are relevant to road safety, with particular focus on the decisions that affect other operators (RJ 2008:04 R3).

During licensing review of a railway undertakings' safety management system, the Transport Agency always checks that it is adequate enough to ensure that staff have the right skills to perform their duties. In this regard, our inspection operation also checks the railway companies' safety management systems.

The Transportation Board currently has a task in which we requested that the National Rail Administration produce data on the schedule for measuring and inspecting gradients, etc., for sidings in light of the new railway traffic regulations; Railway Board's traffic regulations (JvSFS 2008:7). The result of this work will be decisive in determining which provisions will be applied to different tracks to safeguard against rolling. This work also includes reaching an agreement with the Rail Administration on how to familiarize railway undertakings with the data in the short term.

RJ 2009:01

Case TSJ 2009-40, reply date: 29/06/2009. Case SHK J-11/07, released 11/03/2009.

Near collision at Stockholm C on 07/08/2007.

The Transport Agency received the following recommendations in the investigation report regarding the event from the Swedish Accident Investigation Board:

The Transport Agency is encouraged to ensure that:

- The Rail Administration accelerates measures to ATC equip the so-called ATC islands (RJ 2005:01 R1).
- The Rail Administration, pending implementation of the above recommendation, is taking steps to improve the ability of drivers and others to observe the different signal images in the main dwarf signals (RJ 2005:01 R2).
- Line descriptions in the line books of railway undertakings are adapted to make them user-friendly (RJ 2009:01 R1).
- Clearer requirements for route knowledge are introduced for complex stations, such as Stockholm Central Station (RJ 2009:01 R2).
- The Rail Administration is reviewing the design of information environments so they are adapted to human needs (RJ 2009:01 R3).

Work is in progress to eliminate ATC islands. According to data from the National Rail Administration in a letter dated 12/05/2009, work is in progress to eliminate four ATC islands another three are to be eliminated in the years 2010 and 2011. Once this is done, seven ATC islands will remain. They also announced that the remaining ATC islands will be eliminated at a slightly slower pace as a consequence of the very high costs of doing so. This means that the Rail Administration is trying to coordinate this action with a replacement of switchgear. In this respect, there is the issue of whether the operation site in question will be equipped with an ERTMS system, which must be considered when deciding on a time frame. The Rail Administration also announced in the same letter that the ATC system in the northern part of Stockholm Central Station, where the incident occurred, was rebuilt in 2008.

The Transport Agency plans to conduct an operation in which we further investigate various unauthorised signals passed at danger (SPAD) with the specific aim to analyse SPADs that occurred with main dwarf signals and the reasons identified for these SPADs.

The Transport Agency is working to develop standards on location and route knowledge in order to later produce a regulation on this basis. Consequently, the requirements will be clarified and be identical for all railway undertakings.

The Railway Board's traffic regulations (JvSFS 2008:7) which came into force on 31 May 2009 contain the requirement of a route book for drivers based on the EU-common technical specifications for interoperability (TSI). In accordance with "TSD Drift" (TSI Operation), the traffic regulations point out that the responsibility for creating line books for drivers lies with the railway undertakings, based on the information provided by the infrastructure manager. It is thereby possible for every railway

undertaking, based on the requirements of the traffic regulations, to adjust the line book to its own operations and drivers.

In terms of information environments for the driver, affects include the ongoing work within the EU to develop common requirements for DMI (Driver Machine Interface) for ETCS (European Train Control System). These requirements are intended to produce a requirement specification that is aimed to be adapted to the driver as a user. At the national level in Sweden, work is underway to develop requirement specifications for a Swedish DMI for STM (Specific Transmission Module), the module that translates between ATC and ETCS. Eventually, the Transport Agency will announce the national requirements in order to make them mandatory and known to all railway undertakings.

RJ 2009:02

Case TSJ 2009-356, reply date: 25/09/2009. Case SHK J-10/06, released 23/03/2009.

Shunting accident, Hallsberg, 26/09/2006.

The Swedish Rail Agency has received the following from the Swedish Accident Investigation Board: report RJ 2009:02, Shunting accident in Hallsberg, T County, on 26 September 2006.

The aforementioned report recommends the Transport Agency to:

- In collaboration with the rail industry, evaluate whether the existing system for the monitoring of railway undertaking personnel is an effective instrument to detect shortcomings (RJ 2009:02 R1).
- Review whether there is a need to introduce a requirement for driver training to include practical emergency stop exercises (RJ 2009:02 R2).
- Review the procedures for accident alarms, checklist designs, and to what extent instructions may be necessary for accident alarms. The recommendation also includes a review of alarms and states that alarm responses need to be practised (RJ 2009:02 R3).

The Transport Agency's actions in response to the National Accident Investigation Boards' recommendations in the report RJ 2009:02

Recommendation 2009:02 R1

Because the Transport Agency is a supervisory authority, the authority does not intend to cooperate with the rail industry to assess whether monitoring of personnel is an effective instrument to detect shortcomings. According to Section 11 of the Railway Board's regulations on safety systems management, etc. for railway undertakings (JvSFS 2007:1), the railway undertaking itself shall regularly assess their safety management systems through internal system reviews. That is, the railway undertaking's own safety management system shall regulate the railway undertaking to self-evaluate whether the personnel monitoring has the desired effect as per the undertaking's planned system.

The Transport Agency monitors that the above procedures are being followed and have the intended effect, both in the regular supervisory operations and in the process of operation planning.

Recommendation 2009:02 R2

It is crucial that personnel in traffic safety services have the necessary knowledge in order to achieve good traffic safety. To ensure a high level of knowledge among personnel in traffic safety services, in accordance with Railway Inspectorate's regulations on training (BV-FS 2000:3), shall all basic training programs have a training plan which is approved by the Transport Agency.

When approving the curriculum the Transport Agency focuses on the implementation and understanding of traffic safety instructions, prevention of human errors, and training for abnormal situations.

Operators are reminded, by the Railway Board's 2008 Handbook comments on Section 4 BV-FS 2000:3, of the importance for the periodic refresher courses to illustrate situations that may be considered abnormal.

The Transport Agency will take recommendation 2009:02 R2 into consideration during the next revision of the training regulations.

Recommendation 2009:02 R3

Under Sections 7(j) and 7(1), paragraph two of the Railway Board Regulations on Safety Management Systems, etc., for infrastructure managers (JvSFS 2007:2), shall the infrastructure manager be in possession of processes for alarms in case of accidents and incidents, and also periodically conduct training exercises of said processes.

Annex 6, Section 2 of the Railway Board's traffic regulations (JvSFS 2008:7) makes known the instructions for operational emergency procedures in an accident. It is incumbent upon the dispatcher to alert the community emergency services upon receiving an alarm.

Whether or not the dispatcher will ensure the process by using an emergency checklist is left to the infrastructure manager to decide. The Transport Agency would like checklists to be used in emergency procedures as they are a great aid, but the authority does not intend to develop nor henceforth establish checklist design requirements. According to Section 11 of the Railway Board's regulations on safety systems management, etc. for infrastructure managers (JvSFS 2007:2), the infrastructure manager itself shall regularly assess their safety management systems through internal system reviews. The safety management system instructs the infrastructure manager to self-evaluate whether the checklist has the desired effect as per the undertaking's planned system.

The Transport Agency monitors that the above procedures are being followed and have the intended effect, both in the regular supervisory operations and in the process of operation planning.

A reply by letter is now published on the Transport Board's external website in order to give citizens, railway undertakings, infrastructure managers in the railway industry, transport operators, track owners within the metro and tram, and other authorities the ability to more easily access responses from the railway department of the Transport Agency in regards to targeted recommendations of the investigative reports conducted by the Swedish Accident Investigation Board.

RJ 2009:03

Case: TSJ 2009-559, reply date 30/09/2009. Case SHK J-16/08, released 30/03/2009.

Incident of level crossing accident, Stora Höga - Kode, 11/04/2008.

The Swedish Rail Agency has received the following from the Swedish Accident Investigation Board: report RJ 2009:03, Incident of level crossing accident between an HGV with trailer and passenger train 3763 on the Stora Höga - Kode line, O county, 11 April 2008.

The aforementioned report recommends the Transport Agency to:

- Urge the infrastructure manager to aim for an increased use of barrier detection systems at level crossings (RJ 2009:03 R1).
- Together with infrastructure managers and road authorities work to develop standards and practices and to develop cooperation between the municipality and other stakeholders so that traffic at level crossings is evaluated both on a regular basis and after any changes are made (RJ 2009:03 R2).
- Make information about especially troublesome level crossings readily available for the planning of various road transports (RJ 2009:03 R3).

The Transport Agency's actions in response to the National Accident Investigation Boards' recommendations in the report RJ 2009:03

Recommendation RJ 2009:03 R1

Safety devices at level crossings are under the authority of the National Rail Administration under Chapter 8 of the Traffic Sign Ordinance (SFS 2007:90) The Transport Agency has no authority to exercise oversight of the National Rail Administration under the aforementioned ordinance, and therefore cannot make requirements regarding safety devices at level crossings.

The National Rail Administration has previously responded to SHK (the Swedish Accident Investigation Board, Recommendation RJ 2006:01 R3) that their previously approved type of system for obstacle detection is no longer manufactured. Consequently, in 2007 the National Rail Administration planned to do a feasibility study of obstacle detectors to illustrate how great of a need there is for obstacle detectors. The National Rail Administration then planned for a procurement of obstacle detectors in 2008.

The Transport Agency has contacted the National Rail Administration on the matter and they communicated the following: The National Rail Administration is testing an obstacle detection system in the Mälardalen (Mälaren Valley) region. The tests are in the final stage. The National Rail Administration shall obtain approval of the system from the Transport Agency; see the Railway Board regulations on approval of subsystems in railways, etc. (JvSFS 2006:1). The goal is for the new obstacle detection system to become operational in 2010.

Recommendation RJ 2009:03 R2 and R3

The National Rail Administration and the Swedish Road Administration have begun collaboration with the aim of reviewing both administrations' governing documents relating to the geometric design of level crossings, from both a road and a railway perspective.

The National Rail Administration and the Swedish Road Administration have collaborations with municipalities and other stakeholders through the Level Crossing Delegation (the National Rail Administration, the Swedish Association of Local Authorities and Regions - SALAR, the Swedish Road Administration, and Stockholm public transport - SL (adjunct)) and through the so-called Level Crossing OLA (the National Rail Administration, Bombardier, The Association of Swedish Train Operating Companies - ASTOC, The Swedish Private Roads Association - REV, SL , SALAR, the Swedish Association of Road Haulage Companies, and the Swedish Road Administration). This collaboration acts as a forum for interaction between stakeholders and for the reconciliation of submitted intentions in the context of work on Level Crossing OLA.

The National Rail Administration and the Swedish Road Administration have formed a working group with the aim of improving support for haulers during transports with exemptions. The National Rail Administration will build up a support function to aid the Swedish Road Administration and haulers. The Swedish Road Administration will publish data on level crossings on its external website under "State of the roads," so that haulers are better equipped for route planning. The National Rail Administration will offer support for transports over level crossings when necessary by stopping train traffic, for example.

The National Rail Administration, the Swedish Road Administration, and the Swedish Association of Road Haulage Companies conducted an information campaign in March 2008, and with a follow-up in February 2009, which encouraged lorry drivers to report level crossings they perceived as dangerous. The National Rail Administration surveyed 2 500 level crossings in 2008. The purpose of the survey was to identify level crossings with poor road profiles that can cause long, low vehicles to get stuck in the crossing. The results led to the installation of additional signage at 300 level crossings, 150 of which will be upgraded no later than 2010.

In light of the above, the Transport Agency does not intend to target actions in this area.

RJ 2009:04

Case TSJ 2009-567, reply date: 09/11/2009. Case SHK J-25/08, released 11/05/2009.

Near collision, Bryngenäs, 09/06/2008.

The Swedish Rail Agency has received the following from the Swedish Accident Investigation Board: report RJ 2009:04, Near collision between carriage being shunted for transport and train 3539 at Bryngenäs Station, O county, 9 June 2008.

The aforementioned report recommends the Transport Agency to:

- As soon as possible, introduce requirements for the use of train protection systems in vehicles on infrastructure which is equipped with such protection (RJ 2009:04 R1).
- Improve procedures for licensing and oversight so that any absence of essential safety provisions is discovered (RJ 2009:04 R2).

The Transport Agency's actions in response to the National Accident Investigation Boards' recommendations in the report RJ 2009:04

Recommendation RJ 2009:04 R1

In the spring of 2009, the Transport Agency issued a draft regulation for consultation on train protection systems. The comments received from the consultation body showed that further work was needed on the basis of the regulations. The Transport Agency is continuing work on developing regulations which should be brought into force in 2010.

Recommendation RJ 2009:04 R2

There has been a constant effort to improve procedures and processes within the Transport Agency. Discussing improvements is inherent in case managements, at presentations, department meetings, calibration meetings, etc. Additionally, there is ongoing work to adapt assessments and requirements to the rest of Europe.

One way to improve the authority and clarity for operators is the Transport Agency's efforts to develop so-called guides and cross reference lists, which are published on the Transport Agency's external website. The guides describe what the authority examines during the permit/licensing procedure, for example. The cross reference lists describe which procedures and processes that will be based on directives, laws, and regulations. When the candidate operator understands and knows what material should be submitted, the volume of correspondence is much smaller and the process to achieve the goal is both more efficient and faster. The authority uses checklists that are continuously updated and developed to assist in examinations and oversight.

RJ 2009:05

Case TSJ 2009-566, reply date 21/12/2009 - SHK case J-24/08, released 09/06/2009.

Near collision, Hillared-Limmared, 09/06/2008.

The Swedish Rail Agency has received the following from the Swedish Accident Investigation Board: report RJ 2009:05, Near collision between trains 7343 and 9450 on the Hillared-Limmared route, O county, 9 June 2008.

The aforementioned report recommends the Transport Agency to:

- Urge the National Rail Administration to assess how large of a monitoring area a remote dispatcher should have, in terms of traffic safety, to be able to remain in control of the area even during disruptions (RJ 2009:05 R1).
- Urge the National Rail Administration to assess which systems a train dispatcher has available that affect their ability to make important decisions that affect traffic safety (RJ2009:05 R2).
- Urge the National Rail Administration to create measures that stimulate attentiveness during monitoring work (RJ 2009:05 R3).
- Urge the National Rail Administration to create a system of follow-ups where the shortcomings and weaknesses of dispatchers can be better addressed, such as by simulating and training for various scenarios (RJ 2009:05 R4).
- Update BVFS 2000:4 so that both physical and mental ability is assessed before the return to safety services (RJ 2009:05 R5).
- Urge operators to review and improve practices and provisions to meet the requirements of BVFS 2000:4, and ensure that their own rules and routines are followed (RJ 2009:05 R6).
- Review the rules for passing signals that do not show "clear" in order to introduce safer barriers (RJ2009: 05 R7).

The Transport Agency's actions in response to the National Accident Investigation Boards' recommendations in the report RJ 2009:05

The Transport Agency has written to the National Rail Administration, in response to the recommendations R1R4. The National Rail Administration returned with responses to measures and parts of their response are reported in the Transport Agency's response to those recommendations.

Recommendation RJ 2009:05 R1

The Transport Agency's assessment is based on the National Rail Administration's response that they plan to develop a decision support on the operational level of traffic controllers and operational managers. The decision support is to be introduced for use during various types of disturbances in train traffic. The aim is to make momentary reorganisations more easily recognisable and hence make decisions on the backing of a dispatcher with a high workload situation. The National Rail Administration is also working to open up the climate of the operations control centre so that it is seen as natural to express a need for help during heavy workloads.

The Transport Agency chooses to follow the ongoing provision work, of the train operators' monitoring area during disruptions, by bringing the matter to the agenda of the so called Corporate Meetings conducted with the National Rail Administration (in future; The Swedish Transport Administration).

Recommendation RJ 2009:05 R2

The National Rail Administration announced that it plans to implement a follow-up and analysis of the operational environment in which the dispatcher works, both from a safety and work environment perspective. They have also announced that a test with a checklist will be introduced and evaluated. The Transport Agency deems the checklist to be an attempt to introduce a support for the dispatcher regarding, for example, checks that shall be made prior to giving pass consent of a stop signal. The checklist is in addition to the form provided by the Railway Board's traffic regulations (JTF).

The Transport Agency chooses to follow the ongoing provision work, partly of the operational environment and partly of the tests/evaluations of the checklist, by bringing the matter to the agenda of the so called Corporate Meetings conducted with the National Rail Administration (in future; The Swedish Transport Administration).

Recommendation RJ 2009:05 R3

The National Rail Administration announces that a new planning and management tool for dispatchers has been developed and tested. This is based on the results of the research project at Uppsala University, ''Future Train Traffic Management," which was partially funded by the National Rail Administration. A prototype facility is currently at the operations control centre in Norrköping and another prototype facility is planned for implementation in 2010 at the operations control centre in Boden. The results and experiences from these will serve as important input in the work on a new so-called national train control system and is expected to provide ideas for improvement measures in the existing technology and environment.

Based on the information the Transport Agency has noted from the project's website (http://www.it.uu.se/research/project/ftts, 16/12/2009), we perceive that the ongoing work in the area will lead to changes for traffic management. While the current control system focuses on operating the infrastructure, the "Future Train Traffic Management" system provides support for making complex decisions during disruptions. The Transport Agency is fully aware that this is ongoing research work, but because the prototype systems are introduced, the Transport Agency elects to take no action.

Recommendation RJ 2009:05 R4

The National Rail Administration announces that during the coming years it plans to assess and evaluate the utility value of the results and experiences from the use of the simulation facilities for dispatchers that are available and in use at the operations control centres in Malmö and Stockholm.

As a result of the above, the Transport Agency deems the recommendation met.

Recommendation RJ 2009:05 R5

The Transport Agency is working to develop new health regulations. As does Section 9 BVFS 2000:4, the new health regulations will include rules stating that both physical and mental abilities shall be assessed before the return to safety services after involvement in an accident or incident. In working

on the new health regulations, the aims of the Transport Agency include efforts on clarifying the rules in this respect.

The new health regulations are partly based on what is presented in the so-called "Train Drivers Directive" (2007/59/EC), the forthcoming Swedish legislation, and the provisions of the technical specification for interoperability (TSI) for subsystems, "Traffic Operation and Management" (2006/920/EC).

The Transport Agency believes that the new health regulations are expected to take effect in late 2010.

Recommendation RJ 2009:05 R1

The Transport Agency has received a similar recommendation from SHK in the report "Near-miss, Umeå Brännland, 17/06/2008" (RJ 2009:07 R3).

On the basis of both reports, the Transport Agency intends to provide information on the recommendation in connection with the reply to the report RJ 2009:07.

Recommendation RJ 2009:05 R7

The Transport Agency's administration group for the Railway Board traffic regulations (JTF) takes the recommendation into account and has included it as a basis for assessment in future revisions of the regulatory framework.

The Transport Agency also elects to follow the Swedish Rail Administration's test and evaluation of a checklist for dispatchers (see response RJ 2009:05 R2).

SHK letter - Regarding recommendations submitted following investigations RJ 2008:02, 2008:04, and RJ 2009:01.

Case TSJ 2009-2631, reply date: 12/02/2010. Cases SHK J-17/07, J-02/08, J-11/07, date 09/12/2009.

Reply regarding the SHK view that recommendations were not addressed.

The Transport Agency, after the National Accident Investigation Board (SHK) investigation reports on *Incident on the route Stenungsund - Ytterby, Incident on the route Alby - Ångebyn,* and *incident at Stockholm Central,* has received notice that SHK does not consider the given recommendations to have been addressed. Below is the Transport Agency's response and additions.

RJ 2008:02 Stenungssund – Ytterby

SHK does not find a link between the reported measures and the barriers that can prevent a signal being set to "clear" when there are obstacles on the line. The recommendation can therefore not be considered addressed.

The Transport Agency's view is that the strategy of the Swedish Rail Administration is to eliminate traffic management systems with manual blocking (system M) rather than trying to develop the system to prevent "clear" signals when there are obstacles on the line. For this reason, the recommendation is not to be addressed as it is worded.

Additional barriers in system M to prevent a dispatcher from accidentally setting a signal to "clear" require technical solutions such as track circuits for block systems.

The Swedish Rail Administration announces that a major expansion of the block system has taken place in recent years. The section where the incident occurred is now running a system with centralised traffic control (system H). During 2010, the ERTMS-Regional traffic system is planned for introduction on a similar track that is currently run on system M. ERTMS-Regional will then be introduced on additional routes where a block system is currently lacking.

In response to the above, the Transport Agency deems no other action to be required.

RJ 2008:04 Alby – Ångebyn

The reply focuses on vehicle braking. The recommendation does not concern this and is therefore not deemed addressed.

The Transport Agency has failed to understand what decisions within the National Rail Administration that SHK would like the Transport Agency to monitor the implementation of. The Transport Agency has sought justification in the investigation report on Alby - Ångebyn and submitted a reply in relation to the contents of the report.

After phoning SHK, the Transport Agency has learned that the aim of the given recommendation is that SHK wants the Transport Agency to react if and when the National Rail Administration deviates from a given plan on the expansion of traffic management systems with centralised traffic control (system H) and train protection systems.

Without this clarifying phone call, the Transport Agency would not have been able to determine the intentions of SHK. SHK needs to be more specific in its recommendations if we are to understand them.

The Transport Agency would like the submitted recommendations to be clearly linked to both the factual section and the analysis section of the relevant inspection report. This is in order for the link between recommendations and observations from SHK to be clear.

The Transport Agency follows the National Rail Administrations' safety-enhancing measures through regular corporate meetings.

RJ 2009:01 Stockholm Central.

The reply refers to the driver's information environment concerning the interior equipment. The reply does not address the external information environment. The recommendation can therefore not be considered addressed.

The Transport Agency has followed up the National Rail Administration's continued work on the design of the external information environment. The National Rail Administration is currently able to replace the covers for red lamps of head dwarf signals with covers with larger openings. The National Rail Administration will replace the covers on the main dwarf signals where needed.

The location of the incident, Stockholm Central, is complex in the sense that the external information environment does not comply with normal standards for the placement of signs and plaques, etc., due to space limitations. It must not be forgotten that the drivers undergo selection tests to be able to drive in the intensive and information-rich environment. In addition, there are site knowledge requirements. The external information environment will eventually change with the new construction of railway facilities. Not least on the sections equipped with the ETCS train protection system in which all information is provided through cab signalling (see the Transport Agency's earlier reply to the recommendation).

Based on the above, The Transport Agency does not require further action.

E IMPORTANT CHANGES IN LEGISLATION AND REGULATORY FRAMEWORK

The European Parliament and Council Directive 2008/57/EC of 17 June 2008 on the interoperability of the rail system within the Community and the European Parliament and Council Directive 2008/110/EC of 16 December 2008 amending Directive 2004/49/EC on railway safety within the Community has not yet been implemented in Swedish law. However, a commission is appointed and in August 2010 shall submit proposals on how the directives should be implemented in Swedish law.

During 2009, no major changes were made to the Swedish Railway Act (2004:519). However, several provisions were amended/established in the Railway Ordinance (2004:526). The amendments to the Railway Ordinance through SFS 2008:1287 and which came into force on 1 January 2009 entail the following, in brief. "Swedish Rail Agency" has been replaced with "Transport Agency" because the Railway Agency was merged into the Transport Agency on 1 January 2009. Rules have also been introduced which state that the Transport Agency shall submit an annual report to SHK regarding safety recommendations addressed to the board, handle cases where a safety recommendation has been issued by an authority or body in another EEA country or Switzerland and addressed to Sweden, collect information on the CSIs, and annually prepare and publish a report on their safety work in the railway sector. The report shall be submitted to the European Railway Agency by 30 September. In addition, the Transport Agency shall notify the EC Commission of adopted amendments to existing authority regulations on safety in the railway sector, follow the market for railway training, and act as examining authority under Section 13 Act (1945:119) on the fencing requirement for the railways, etc. The changes are based largely on the European Parliament and Council Directive 2004/49/EC of 29 April 2004 on safety on the Community's railways, the amendment to Council Directive 95/18/EC on the licensing of railway undertakings, Directive 2001/14/EC on the allocation of infrastructure capacity and the levying of charges for use of railway infrastructure and safety certification (Railway Safety Directive). The Railway Ordinance has also been amended hereafter under SFS 2009:692 which is included as an issue in the opening of the passenger market. These amendments, in respect of certain provisions, entered into force on 1 July 2009 and otherwise on 1 August 2009.

The Swedish Railway Board’s traffic regulations (JvSFS 2008:7) and regulations (JvSFS 2008:8) on railway safety provisions 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 their own traffic rules which railway undertakings were forced to follow. The Railway Board's traffic regulations (JvSFS 2008:7) have been updated twice in 2009 (by TSFS 2009:27 and 2009:86). Furthermore, the Transport Agency has established regulations (TSFS 2009:28) for exemption from the Railway Board's traffic regulations (JvSFS 2008:7) for test runs and the Transport Agency regulations (TSFS 2009:29) on traffic operations during extraordinary circumstances. The latter two regulations were adopted on 5 May 2009 and came into force on 31 May 2009. See also Annex D.

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 now be found in Chapter 3, Section 3 respectively Chapter 3, Section 7 of the Railway Act. 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 was implemented in Sweden 01/07/ 2007. Annex E presents relevant numerical data.

F.3 Procedural aspects

F.3.1 Queries, Part A safety certificates

3.1.1. Reasons to update/amend safety certificates in respect to Part A
(possibly due to changes in service offerings, scope of service or size of company).

3.1.2. Main reasons for the average processing time for Part A safety certificate applications surpassing 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 Part A safety certificate validity throughout the EC

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

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

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

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

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

Replies

3.1.1. An amended Part A safety certificate due to an increase of hazardous materials.

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 operations of the Swedish Transport Agency's Railways Department are currently 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. In 2009/2010, the Transport Agency developed a proposal for regulations concerning charges that will apply from 1 January 2011. The proposal has been submitted for referral to concerned parties for comment. The Transport Agency does not believe it appropriate to introduce an operational system entirely funded by charges in the rail sector by 2011 and suggests that the charges are introduced in three stages: 2011, 2012 and 2013. The proposal is to levy charges for record keeping and reviews of applications for approval of technical systems from 2011. Read part of the referral here:
http://www.transportstyrelsen.se/sv/Regler/Remisser/Remiss-av-Transportstyrelsens-foreskrifter-om-avgifter/.

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 the possibility to lodge complaints on the authority's decisions. For larger railway undertakings, there are frequent corporate meetings.

F.3.2 3.2 Queries, Part B safety certificates

3.2.1. Reasons to update/amend safety authorisations in respect to Part B
(possibly due to 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 for the average processing time for Part B safety certificate applications surpassing the four months specified in Article 12(1) of the Safety Directive (restricted to the

authorisations referred to in Annex E. Average processing time calculated from the date when all the required information was received by the authority).

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

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

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

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

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

Replies

3.2.1 Two amended Part B authorisations; one amendment arose from increases in the volume of dangerous goods, and the other relating to the inclusion of passenger traffic.

3.2.2. The average processing time was not more than the four months specified.

3.2.3. See reply to 3.1.5.

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.

F.3.3 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 for the average processing time for safety authorisation applications surpassing the four months specified in Article 12(1) of the Safety Directive (restricted to the authorisations referred to in Annex E. Average processing time calculated from the date when all the required information was received by the authority).

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

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

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

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

Replies
3.3.1 New head of the state administrator (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 Updates of road safety instructions due to the introduction of the Transport Agency's regulation on traffic safety instruction.

3.3.4 Nothing in particular other than that the smaller infrastructure managers consider it bureaucratic.

3.3.5 All decisions can be appealed. For the larger infrastructure managers, there are frequent corporate meetings.

3.3.6 See reply to 3.1.5.

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 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 quarter 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.

All audits are carried out by the Swedish Rail Agency's own staff. Approximately 6.0 AWU (annual work units) are spent on safety oversight. This represents approximately 10% of the Railway Department's total workforce. Supervision cost approximately SEK 5,857,000 (approximately EUR 629,784) in 2009.

During 2009, the Swedish Transport Agency began mapping out how the supervision of roads, railways, maritime, and aviation is performed; this may lead to new methods. A first result of this project is a common basic training.

Number of inspections carried out by the Swedish Transport Agency

		Part A safety certificates issued	Part B safety certificates issued	Safety authorisations issued	Other activities (specified)
3. Number of inspections by RU/IM during 2009	**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**
	Completed	**0**	**2 (deficiencies found on vehicles in connection with supervision of dangerous goods)**	**0**	**0**

Table 8: Number of inspections planned, unplanned and carried out in 2009.

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. That is a performance rate of 100%. Most of the Transport Agency's supervision consists of audits. The Transport Agency applies four types of audits:

- 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 Transport 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 2009	**Planned**	**76**	**76**	**63**	**0**
	Completed	**113**	**113**	**99**	**0**

Table 9: Number of audits planned and carried out in 2009.

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 Transport 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	1
	Orders	41
	Prosecutions	0

Table 10: Summary of results from supervision activities in 2009.

As can be seen in Table 10, supervision activities carried out in 2009 resulted in 42 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 in good time following an inspection of the track system. Another common deficiency is that the traffic safety instructions of undertakings are not updated.

When it comes to the railway undertakings, deficiencies have been identified in the application of the undertakings' SMS. Furthermore, the securing of timber transports is a persistent problem. The Swedish Transport Agency has embarked on action to overcome this problem.

H REPORTING OF THE IMPLEMENTATION OF COMMON SAFETY METHODS

There is nothing is to report for 2009 (Reporting is optional until 2010).

I CONCLUSIONS AND PRIORITIES

There have been no major changes in accident statistics over the four years for which reporting has been in effect. The number of reported accidents in 2009 is the same as in 2008 and ten fewer than in 2007. The common safety indicators show that relatively few accidents take place in which people are killed or suffer serious injuries.

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 accidents involve the rail system encountering other parts of society. For a few years now, the state infrastructure manager has financed research on suicide and suicide prevention on the railway and in 2009 also started a new research project on unauthorised track access. The state infrastructure manager performs a systematic review of level crossings in respect of design and signage with the aim of improving safety. The reduction in the number of level crossings continues. The railway undertakings also take the initiative. One of the larger railway undertakings stated in their safety report that they perform an in-depth causal analysis of boarding accidents and injuries to passengers onboard the train.

Unlike the accident data, the deviation information sought in the safety reports is relatively new for operators, and a greater number of reported deviations entailing signals passed at danger, track geometry faults, and broken rails may therefore just as well indicate an improved ability to detect deviations and apply definitions as an actual increase in the number of deviations. Of significance though is that the number of reported unauthorised SPADs has increased every year since reporting began. In 2009, the state infrastructure manager began a collaboration with the major carriers which examines all available evidence and jointly analyses the causes of unauthorised SPADs.

The Swedish Transport Agency has issued safety certificates and safety authorisations and exercised supervision chiefly in the form of audits in accordance with the Safety Directive. The inspections performed by the Transport Agency in 2009 resulted in 41 orders and 1 ban. 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 in good time following an inspection of the track system. Another common deficiency is that the traffic safety instructions of undertakings are not updated.

When it comes to the railway undertakings, deficiencies have been identified in the application of the undertakings' SMS. Furthermore, the securing of timber transports is a persistent problem. The Swedish Transport Agency has embarked on action to overcome this problem. These activities include an intermodal project within the Transport Agency for securing loads. On 1 September 2010 more than one hundred stakeholders met to discuss the current and future state of the rules for securing loads in all modes of traffic. Two issues came into focus: who is responsible for correctly securing the load and how we are to get better and more uniform rules.

With the formation of the Swedish Transport Agency, other intermodal projects have also been launched, including a review of supervisory methods and a mapping out of the operations regarding damages, accidents, and incidents in all four modes of transport. Here is an opportunity for the Swedish Transport Agency's Railways Department to both inspire and be inspired by the departments covering the other three forms of transport; maritime, air, and road. The review of supervisory practices has thus far resulted in the development of a common basic education. The mapping out of the operations regarding damages, accidents, and incidents has resulted in the decision to undertake projects to develop comparative intermodal accident indicators and to allow the publication of comparative statistics on the Transport Agency website.

Prior to the merging of the Railway Department and the Road Department on 01/04/2011, the Transport Agency has established 16 working groups which, during the autumn of 2010, will work to map out the current procedures of standardisation, licensing, supervision and record-keeping, and to make proposals for both road and rail to be in concert on said procedures.

In 2008, the Railway Board adopted common traffic rules for the entire Swedish Railway; these came into force in 2009. A challenge and priority for the Transport Agency is to administer the regulatory framework for a dynamic market.

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. The former SIKA's (Swedish Institute for Transport and Communications Analysis) PM 2008:3 Socio-economic principles and calculation values for the transport sector: ASEK 4 *2005:16* has been used as the source for calculated values for lives – see below for further details. Data on Transport Agency operations in 2009 were acquired from unit managers for the Transport Agency's railway department's various units and the internal registers.

Definitions:

The definitions below are mostly taken from the Transport 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. vandalism and sabotage are excluded.
- Comment: suicides are presented separately.
- Have not occurred in workshops, warehouses or depots (e.g. engine sheds).

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

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

  National definition: in relation to serious injury, in years prior to 2008 the national definition of 14 days' sick leave was used. In the case of 2009, 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 Ordinance 1192/2003/EC)

Differences compared with the accident statistics supplied to Eurostat

Because 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, accidents on local and regional networks that are independent and intended solely for passenger or museum traffic, such as Saltsjöbanan and Roslagsbanan, are excluded from this report. The figures for the number of deaths and serious injuries are therefore different from the figures provided annually by Sweden to Eurostat and from the figures that are published annually in Traffic Analysis's official statistics publication, "Bantrafikskador."

Definitions relating to accident categories

Trains
One or more locomotives or rail cars, with or without carriages connected, running according to timetable under a given number designation. A single locomotive in motion is considered to be a train.

Train collisions, including train impact with objects within the clearance gauge
Collisions are divided into two sub-groups for reporting of indicators: train collision and train impact.
Train collision refers to any type of collision between a train and another railway vehicle, e.g. between a train and

- the front 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 impacts with animals if this leads to a significant accident. A collision only between vehicles which are not run as trains is reported under the category of "other." Impact with an object which has been dropped by a road user on a level crossing is reported as a "level-crossing accident."

Derailment
An accident in which at least one wheel leaves the rail.

Note:

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

Fire in rolling stock
Accidents involving fires or explosions occurring inside a moving railway vehicle (including the cargo). Fires or explosions 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 source. Neither arson fires nor fires occurring during siding or shunting at railway yards are included.

Accidents with persons caused by rolling stock in motion
Accidents in which 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 intentionally self destructive act resulting in death or serious injury; the Transport Agency verifies the details with police authorities.

Level crossing accident
An accident which occurs on a level crossing and involves 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 accidents
All accidents related to railway vehicles in motion but which cannot be classified as a train collision, train derailment, level-crossing accident, accident involving a person, suicide, or fire.
Note:
The main types of accident in this category should be:

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

Definitions for death and serious injury

Passengers

A person travelling on the train and who is not part of the train crew. When accidents are reported, persons boarding or alighting from a moving train are also included in the category of "passengers."
Note:
A person who crosses the tracks at a station in a place where it is prohibited is classified

as an "unauthorised," in other cases this is classified as "other." Individuals on the platform, for example waiting for a train, are classified as "other."

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

Unauthorised persons on railway premises
A person who, without permission, is on railway premises where forbidden.

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

Definitions for deviations

If any of the deviations result in an accident that must be reported then the deviation is also reported as an accident. If a SPAD leads to a collision, for example, this should be reported as 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 passage 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 broken wheel which created a risk of derailment or caused a derailment.

Broken axle
A broken axle which created a risk of derailment or caused a derailment.

Broken rail
Any rail which is separated in two or more pieces, or any rail from which a piece of metal becomes detached, causing a gap of more than 50 mm in length and more than 10 mm in depth on the running surface.

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

Signalling faults which lead to less certain signalling information than required
Any failure of the signalling system (both infrastructure and vehicles) which leads to signal information that is less restrictive 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 fatalities and serious injuries is based on calculated values for deaths and serious injuries from a socio-economic perspective, produced by SIKA in PM 2008:3 Socio-economic principles and calculation values for the transport sector: ASEK 4 *2005:16.* The calculated values are then multiplied by the number of fatalities and serious injuries.

The data on costs of environmental damage and the costs of replacement or repair of railway infrastructure and rolling stock is based on the reporting operator's experience with actual costs. The reporting operators have stated that this information is uncertain. ERA has developed new methods for reporting the costs of delays due to accidents that will be implemented for reporting as of 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.

Costs related to fatalities and injuries
The number of fatalities is multiplied by the recommended value for traffic fatalities.
The number of serious injuries is multiplied by the recommended value for traffic injuries.
Calculation method including reference to source:
The figures are based on calculated values for deaths and injuries from a socio-economic perspective, compiled by SIKA in PM 2008:3 Socio-economic principles and calculation values for the transport sector: ASEK 4[13]. The calculated values are then multiplied by the number of fatalities and serious injuries. The numbers of fatalities and serious injuries are taken from the table in Annex C. The information for previous years has been updated so that it no longer includes minor injuries as these are excluded from ERA's new proposal for Annex 1 to the Railway Safety Directive. All figures on costs are converted into Euro at an exchange rate of SEK 9.3 to EUR 1.

Compensation for environmental damage

[13] http://www.sika-institute.se/Templates/FileInfo.aspx?filepath=/Doclib/2008/PM/pm 2008 3.pdf, 30/10/2010.

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 the release of pollutants; transported substances such as dangerous goods as well as other environmentally hazardous substances such as fuel, for example.

Costs for replacement or repair of railway infrastructure or rolling stock
The costs for acquiring new railway infrastructure or rolling stock with the same functionality and technical performance as equipment that cannot be repaired, and the costs for restoring damaged railway infrastructure or rolling stock to the same level as 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 in which a vehicle is unavailable due to an accident.

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

Trains
One or more locomotives or rail cars, with or without carriages connected, running according to timetable under a given number designation. A single locomotive in motion is considered to be a train.

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

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

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

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-tracks is therefore 200 kilometres of rail.

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

Level crossings
Level crossing = a crossing on the same level between a road[14] and a railway, designated 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

Certain elements of the operator's safety management system[15] and the outcome of certain activities related to the safety management system shall be described. The elements described are safety targets, action plans and system audits. The operators must also report any deficiencies and faults discovered in relation to the safety of railway operations and infrastructure management in general.

Safety targets
Indicate the long-term safety targets for 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 shall also be 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 developed and the reason for adopting these safety-enhancing activities. Also describe the results of the action plans. Describe the reason for developing 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 on a general level, e.g. the type of accident, incident, major fault or major deficiency, the circumstances surrounding the event(s), and the consequence(s) that could have occurred and which are the reason for the safety-enhancing measures.

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 the 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

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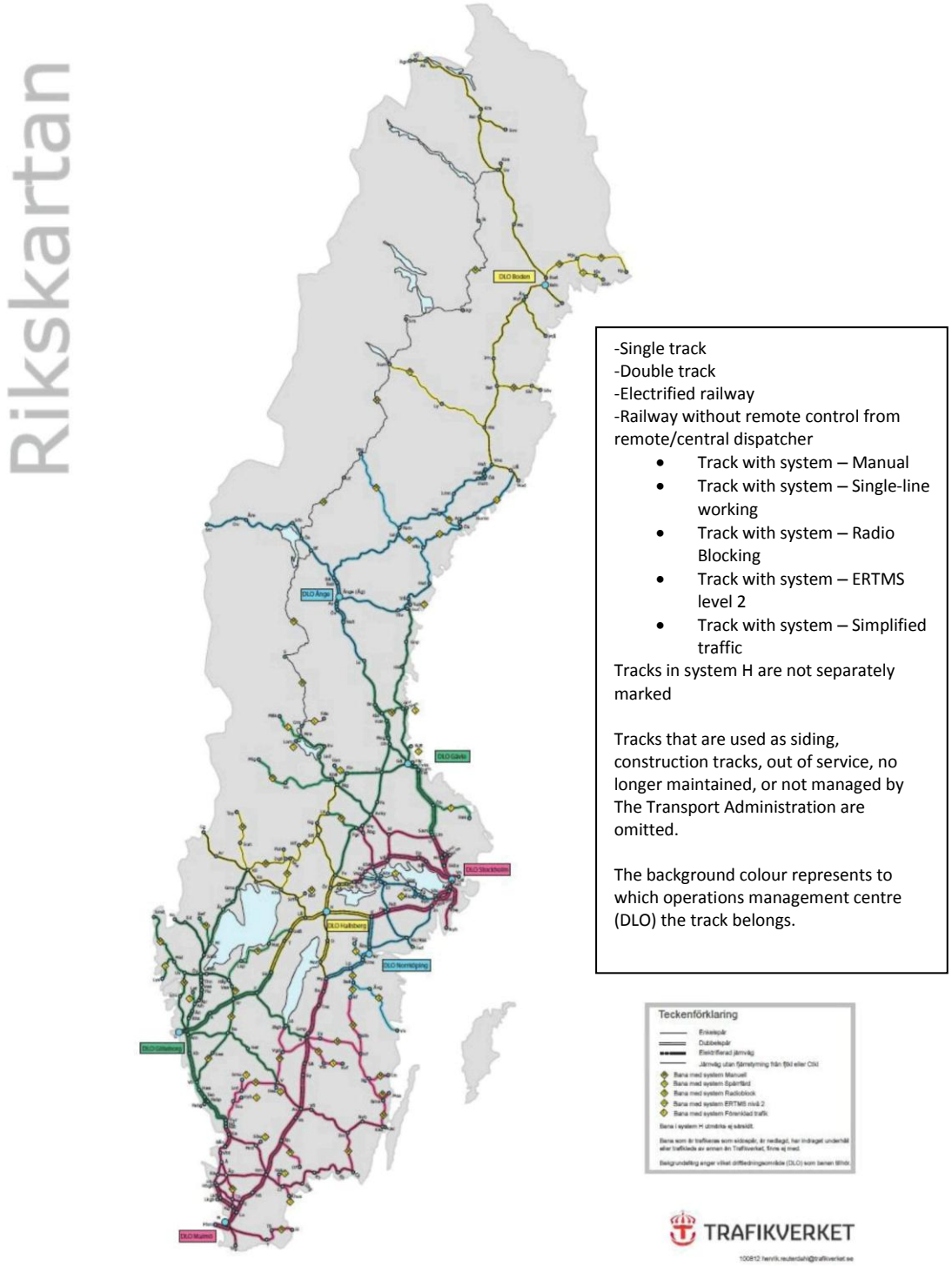
[14] Public or private road or street, including footpaths and cycle paths.

[15] 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 provisions for infrastructure managers.

- 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: Transport Agency website http://www.trafikverket.se/Foretag/Trafikera-och-transportera/Jarnvag/Trafikera/Driftsomradeskartor/ 30/09/2010.

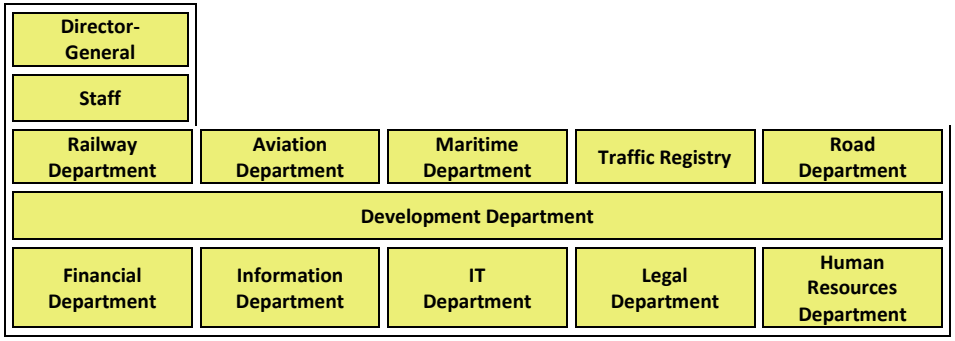
Annex A.2: List of active infrastructure managers at the turn of 2008/2009

Because this encompasses so many railway undertakings and infrastructure managers, the complete list is not attached to this report. However, contact us and we'll prepare such a list.

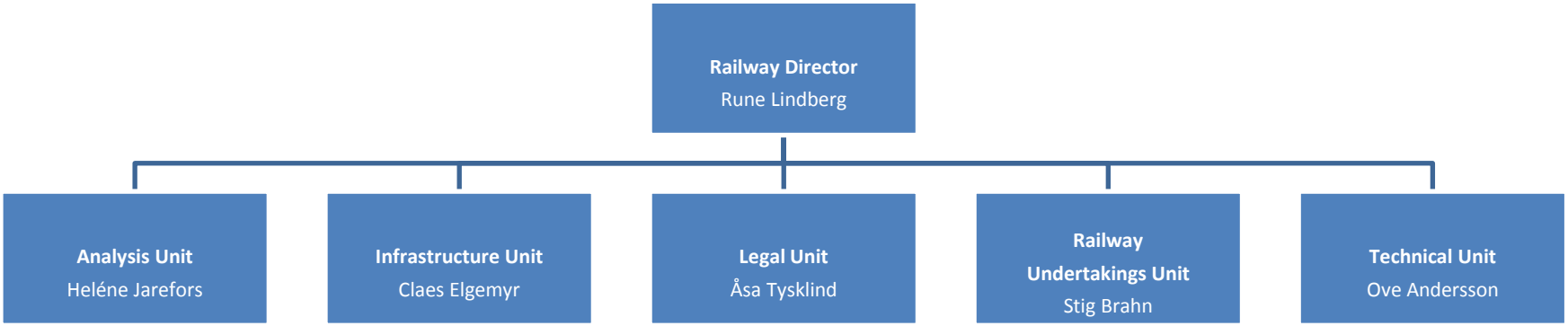
Permit holders	**2009**
Railway undertakings	99
Infrastructure manager	425
Total	**524**

Table 1: Data on number of operators in 2009, see list in Annex A.2.1 and A.2.2. The figures do not include transport operators and track owners that operate trams or subways unless they also are the railway undertaking or infrastructure manager.

Annex B.1: Organisation Chart of the Transport Agency 2009



Annex B.2: Organisation Chart of the Transport Agency's Railway Department 2009



Annex C: Statistical data, common safety indicators

See the Excel file "2010 Swedish CSI data form."

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

	Legal reference	**Date legislation enters into force**	**Reason for introduction** (specify new law or amendment to existing legislation)	**Description**
General national legislation on railway safety				
Legislation concerning NSA	Ordinance (2008:1300) with instructions for the Swedish Transport Agency.	01/01/2009	Ordinance (2008:1300) with instructions for the Swedish Transport Agency. .	The Swedish Transport Agency assumed the Swedish Rail Agency's responsibilities on 1 January 2009. Section 4(2) of the Ordinance states that the Transport Agency, within its area of responsibility, shall perform duties in accordance with EU acts, for example Directive 2004/49/EC.
	Chapter 2, Section 1(a) of the Railway Ordinance (2004:526)	01/01/2009	Section 15(b) Ordinance (1990:717) on the investigating of accidents. Art. 25(2) of Directive 2004/49/EC.	According to Directive 2004/49/EC (Art. 25.2), safety recommendations shall be made to the NSA and possibly to other agencies or authorities in the Member State or to other Member States. Member States and their safety agencies shall take necessary actions based on these safety recommendations. Under the Railway Ordinance, the Transport Agency shall report annually to the Accident Investigation Board

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
				regarding the measures taken in response to safety recommendations addressed to the Agency during the past year.
	Chapter 2, Section 3(a) of the Railway Ordinance	01/01/2009	Art. 5 and Annex I of Directive 2004/49/EC	The Transport Agency shall administer, take actions, etc., on behalf of Sweden in regards to safety recommendations received from an authority or body in another EEA country or Switzerland
	Chapter 2, Section 3(b) of the Railway Ordinance	01/01/2009	Art. 18 Directive 2004/49/EC	According to Directive 2004/49/EC (Art. 5 and Annex I), Member States shall collect information on CSIs. According to The Railway Ordinance, the Transport Agency shall collect this information.
	Chapter 2, Section 3(c) of the Railway Ordinance	01/01/2009	Art. 8 Directive 2004/49/EC	According to Directive 2004/49/EC (Art. 18), the NSA shall annually publish a report on its operations and submit said report to the ERA no later than 30 September. According to The Railway Ordinance, the Transport

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
	Chapter 3, Section 11(a) of the Railway Ordinance	01/01/2009	Art. 13.1 Directive 2004/49/EC	Agency shall administer this reporting According to Directive 2004/49/EC (Art. 8), Member States shall establish binding national safety provisions and notify the Commission. Art. 8.4 states that Member States shall immediately report to the Commission all reported changes to safety provisions and all new such provisions that may be adopted, unless the provision only refers to the application of TSI. According to The Railway Ordinance, the Transport Agency shall administer this reporting Directive 2004/49/EC, Art. 13, states that Member States shall ensure access to education/education. According to Chapter 3, Section 11(a) of the Railway Ordinance, the Transport Agency shall follow the market for rail training and inform the responsible ministry in the Cabinet Office

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
				if there is a risk that training will be lacking.
Legislation concerning notified body, assessor, third parties' bodies for registration, examination, etc.	No change			
National provisions concerning rail safety				
Provisions concerning national safety targets and safety practices	No change			
Provisions concerning requirements of safety management systems and the issuing of safety certificates to railway undertakings.	No change			

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
Provisions concerning requirements of safety management systems and the issuing of safety authorisations	No change			
Provisions concerning requirements of vehicle owners	No change			
Provisions concerning requirements of maintenance workshops	No change			
Provisions concerning requirements for authorisation to place in service and maintain new or significantly altered rolling stock, including provisions on the exchange of rolling stock between railway undertakings, registration systems and requirements for	No change			
Common rules for operating the railway network, including provisions affecting procedures for signalling and traffic.	Railway Board's traffic regulations (JvSFS 2008:7) Transport Agency's regulations (TSFS 2009:27) amending the Railway Board's traffic regulations (JvSFS 2008:7) Transport Agency's regulations (TSFS 2009:86) amending the Railway Board's traffic regulations (JvSFS 2008:7) Transport Agency's regulations (TSFS 2009:28) on exceptions from the Railway Board's traffic regulations (JvSFS	31/05/2009 31/05/2009 15/10/2009 31/05/2009		The regulation means that common traffic rules apply on the entirety of Swedish infrastructure, with some exceptions. In the past, each infrastructure manager had in principle their own traffic rules which railway undertakings were forced to follow.

	Legal reference	Date legislation enters into force	Reason for introduction (specify new law or amendment to existing legislation)	Description
	2008:7) for test runs Transport Agency's regulations (TSFS 2009:29) on traffic operations in extraordinary circumstances	31/05/2009		
	Railway Board's regulations (JvSFS 2008:8) on railway safety provisions in terms of traffic and on-track work.	31/05/2009		The regulation has replaced BV-FS 1995:3 and contains provisions for the infrastructure managers' safety provisions on traffic operation and on-track work (traffic safety instructions)
Provisions concerning requirements for additional internal operational provisions that must be established by the railway undertakings and infrastructure managers.	Railway Board's regulations (JvSFS 2008:8) on railway safety provisions in terms of traffic and on-track work.	31/05/2009		The regulation has replaced BV-FS 1995:3 and contains provisions for the infrastructure managers' safety provisions on traffic operation and on-track work (traffic safety instructions). Section 2 states what a traffic safety instruction shall contain. Section 3 states that for traffic and work covered by the Railway Board's traffic regulations (2008:7), only the necessary additional provisions are required to be included in the traffic safety instruction.

	Legal reference	**Date legislation enters into force**	**Reason for introduction** (specify new law or amendment to existing legislation)	**Description**
Provisions concerning requirements of staff with duties that are important for traffic safety, including selection criteria, health requirements, occupational training and certification.	No change			
Provisions concerning the investigation of accidents and incidents, including recommendations	No change			
Provisions concerning requirements for CSIs, including reporting and analysis.	No change			
Provisions concerning requirements for authorisation to place in service rail infrastructure (tracks, bridges, tunnels, ATC, radio, signalling, interlocking, level crossings, platforms etc.).	No change			

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 2009	in own country	0
	in another Member State	0

Comments on E.2-E.6: A "?" has been placed in those boxes where the Swedish Transport 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 2009	in Sweden	3	1	0
	registered in another Member State	?	?	?

		New	**Updated / Amended**	**Renewed**
E.2.2. Number of valid Part B safety certificates held by railway undertakings registered in 2009	in own country	3	2	0
	In another member country	0	0	0

			Accepted	Refusal	Pending
E.2.3. Number of applications for **Part A safety certificates** submitted by railway undertakings registered in 2009	registered in Sweden	New certificates	3	0	0
		Updated/amended certificates	1	0	0
		Renewed certificates	0	0	0
	registered in another Member State	New certificates	?	?	?
		Updated / amended certificate	?	?	?
		Renewed certificates	?	?	?

			Accepted	Refusal	Pending
E.2.4. Number of applications for **Part B safety certificates** submitted by railway undertakings in 2008	registered in Sweden	New certificates	3	0	0
		Updated/amended certificates	2	0	0
		Renewed certificates	0	0	0
	registered 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 2009 in Sweden.	93	32	24

		Accepted	Refusal	Pending
E.3.2. Number of applications for safety authorisations submitted by infrastructure managers registered in Sweden in 2009	New authorisation	93	0	0
	Updated/amended authorisation	32	0	0
	Renewed authorisation	24	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 2009 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 two weeks concerns the average time between the receipt of all necessary information and a safety certificate decision, while two-three months and one month concern the average time between the first application and a safety certificate decision.

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	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 an application and the final decision of safety authorisation for	A certificate issued by Sweden	2 weeks/ 2-3 months	2 weeks/2-3 months	-
	A certificate issued by another Member State	?	?	?