MINISTÈRE DU DÉVELOPPEMENT DURABLE
ET DES INFRASTRUCTURES
Département des transports

Administration des chemins de fer

MINISTRY OF SUSTAINABLE
DEVELOPMENT AND
INFRASTRUCTURE (MDDI)
Transport Department

Luxembourg Railway Authority

# Annual Report 2009
# of the Luxembourg Railway Authority

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**CONTENTS**

## A.1. OBJECTIVES OF THE REPORT

This report covers the activities of the '**ACF** (***A**dministration des **C**hemins de **F**er*) [Luxembourg Railway Authority] in its capacity as National Safety Authority (NSA) during the year 2009.

The objectives of the report are defined in Article 5 of the law of 22 July 2009 regarding railway safety. The report must contain information on:

a) progress on railway safety, including an inventory of the Common Safety Indicators (CSIs) defined in Annex I of Directive 2004/49/CE,
b) important amendments made to the rules applicable to railway safety,
c) changes in certification and authorisation as far as safety is concerned, and
d) results of the monitoring of the infrastructure manager (IM) and railway undertakings (RUs) and the lessons that have been learnt.

## A.2. SUMMARY

The National Safety Authority, known as the '**A**dministration des **C**hemins de **F**er (**ACF)**' was set up by the law of 22 July 2009 regarding railway safety. This law is the implementation of the Railway Safety Directive 2004/49/EC in Luxembourg legislation.

The year 2009 is the first time that ACF has had to prepare an annual safety report, even though it became only operational in the last quarter of the year. Thus an analysis of trends is not possible.

The ACF annual safety report 2009 describes the activities of ACF, the common safety indicators (CSIs) and the year's most significant safety-related events.

In 2009 Luxembourg issued the first safety certificate (type A and B) in accordance with the Railway Safety Directive and the following major facts were recorded:

5 Accidents at level crossings, including accidents involving pedestrians

2 Accidents to trespassers on railway premises hit by moving vehicles (suicide could not be reliably proven)

1 Employee died at work caused by vehicles in motion

4 Suicides

12 Broken rails

7 Track buckles

2 Wrong-side signalling failures

1 Signal passed at danger

| | |
|---|---|
| 100 % | of the main fixed signals and the caution fixed signals are equipped with MEMOR II+ (improvement of the crocodile system) |
| 48 % | of the main fixed signals and the caution fixed signals are equipped with ETCS level 1 |
| 142 | level crossings of which there are 107 active level crossings and 35 passive level crossings |

## B. INTRODUCTION

### 1. Introduction to the report

The annual report has been prepared in accordance with Article 18 of the Directive 2004/49/EC and Article 5 of the law of 22 July 2009 regarding railway safety. The structure of this report is in accordance with the recommendations (model and guide) of the European Railway Agency.

This safety report is the first prepared by the Grand Duchy of Luxembourg.

It has been prepared, firstly from information supplied by the railway undertakings (RU) which have a safety certificate valid in Luxembourg, and the infrastructure manager (IM) through their annual reports on safety, and secondly by adding some information produced by ACF as part of its activities.

As ACF was only established during the financial year 2009 and at present is still in the set up phase (establishment of the internal organisation and recruitment of staff), it is not yet able to meet all the obligations required by the legislation in force, in particular it has still not been able to carry out its tasks of monitoring the RUs and the IM. Thus the report does not contain data relating to the ACF regarding paragraph d) of Article 5 of the law of 22 July 2009 on railway safety. Regarding the monitoring of the RUs and the IM, the data supplied are the result of inspection actions carried out by the RUs and the IM themselves.

As far as the common safety indicators are concerned ACF has, in agreement with the European Railway Agency (ERA), applied the Commission Directive 2009/149/EC amending Directive 2004/49/EC of the European Parliament and of the Council as regards Common Safety Indicators and common methods to calculate accident costs.

In accordance with Article 5 of the law of 22 July 2009, the ACF has sent a report to the Ministry of Sustainable Development and Infrastructures on the work it has done and sent a copy to the European Railway Agency. The report can be consulted on its internet site www.railinfra.lu.

ACF also supplied a paper version for a restricted distribution to national stakeholders and other interested parties.

## 2. Information on the railway structure

- **Map of the network (see point A.1 of Appendix A)**

The information in the Appendix has been supplied by CFL [Société Nationale des Chemins de Fer Luxembourgeois – Luxembourg National Railways], the manager of the Luxembourg railway infrastructure.

- **For the list of the railway undertakings and infrastructure managers (see points A.2; A.2.1 and A2.2 of Appendix A)**

## 3. Summary - General analysis of the trends (progress of railway safety, certification, etc.)

As this is the first safety report prepared by the Grand Duchy of Luxembourg it is impossible to give details of how railway safety has evolved.

In general, the level of safety of the Luxembourg railway infrastructure has been maintained at a high level. Three serious railway accidents have occurred, each of which resulted in one death. Of these accidents, one involved the death of an employee of an RU [Railway Undertaking] and two accidents involved people in which suicide was possible but could not be proved beyond doubt. In addition to these three deaths there were four suicides.

Several legal texts have been introduced into Luxembourg law amending or adding to the existing Luxembourg legislation and, in particular, transposing the Railway Safety Directive.

In December 2009 the first Part A and Part B safety certificates in accordance with Directive 2004/49/EC were issued to an RU. At the end of 2009 three other RUs were already in possession of a safety certificate prepared, prior to, and in accordance with, Directive 2001/14/EC.

Because of a shortage of staff, ACF was not able to carry out either checks or inspections regarding the certification and application of the safety rules.

The Part A and B safety certificates have been prepared on the basis of the files presented by the applicants and discussions carried out with them. For the evaluation ACF has applied the assessment criteria given in the draft regulations of the European Commission for a common safety method for the assessment of conformity with the requirements for obtaining a safety certificate. The draft of this was prepared by ERA.

## C. ORGANISATION

### 1. Presentation of the organisation

ACF was created by Article 3 of the law of 22 July 2009 regarding railway safety. It is placed under the authority of the member of the government having the railway in his remit, at present the Ministry of Sustainable Development and Infrastructure (MDDI).

The remits of ACF are defined in Articles 4.1 and 4.2 of the law mentioned above.

***Article 4.1.*** *The Administration is responsible for the maintenance and improvement of the level of safety in the railway industry in conformity with the national and international provisions applicable. For this purpose it must carry out the following tasks in an open, non-discriminatory and transparent manner:*

*a) ensure that the rolling stock is duly registered and that the information relative to safety given in the national register prepared in accordance with the Article 14 of the amended Directive 96/48/EC and Directive 2001/16/EC, is accurate and kept up to date;*

*b) prepare the files with a view to the issue, renewal, re-examination, amendment, withdrawal and suspension by the Minister of safety certificates and authorisations in accordance with the provisions of the current law and the Grand Duchy Regulations as well as checking that the conditions of validity are fulfilled;*

*c) check the conformity with the interoperability components laid down by the legislation and the regulations in force;*

*d) authorise in application of the legislation and the regulations in force the introduction of the sub-systems of a structural nature that make up the railway system used or operated in Luxembourg, and check that they are used and maintained in accordance with the essential requirements that concern them;*

*e) carry out the tasks which are delegated to it in accordance with the current law and the regulations of the Grand Duchy for the introduction into service of the rolling stock used on the Luxembourg Railways system, in particular the authorisation of the introduction of new or substantially modified rolling stock which is not yet covered by a TSI, and check that it is operated and maintained in accordance with the essential requirements that relate to it;*

*f) carry out the tasks delegated to it in accordance with the current law and the regulations of the Grand Duchy as part of the training and certification of the staff allocated to the tasks of safety on the Luxembourg railway system;*

*g) check, promote, apply, develop and publish the regulations regarding railway safety including the system of national safety rules;*

*h) assist and advise the Minister in carrying out his duties regarding railway safety and interoperability;*

*i) provide support to studies and activities connected with railway safety;*

*j) cooperate with its opposite numbers, in particular with a view to the harmonisation of the certification criteria for railway safety.*

***Article. 4.2****. The Administration has the task of ensuring equitable and non-discriminatory access to the railway infrastructure for all railway undertakings and avoidance of any abuse of the dominant position of one or several railway undertakings to the detriment of others. For this purpose it organises the allocation of paths and the system of tariffs for the railway infrastructure as laid down respectively in Articles 22 and 25 of the amended law of 11 June 1999 regarding the access to the infrastructure and its use.*

As specified in Article 32 of the law of 22 July 2009 it was officially set up on 1 August 2009.

At 31 December 2009, ACF was made up of two divisions, one dealing with the subjects of railway safety and interoperability, and the other dealing with the allocation of paths and tariffs.

**The Interoperability and Safety Division** has three members of staff**,** two deal with the authorisation and introduction into service of rolling stock and related subjects, and a third ensures the coordination in matters of railway interoperability and safety between the European Commission (DG Move), ERA, MDDI and ACF as well as with the other railway organisations.

**The Paths Division** has three members of staff, one of whom is temporarily filling the post of Manager of the function.

The recruitment of other staff and the setting up of an organisation that meets the national and international obligations is included in the objectives for the financial year 2010.

## 2. Organisational charts

Appendix B

## 3. Activities

### Interoperability and Safety Division

As the National Safety Authority, ACF has participated in meetings of different working groups (TSI Wagons, TSI Locomotives and Passenger Vehicles, Mutual Acceptance of Rolling Stock, National Vehicle Register and Safety Rules) at the European Railway Agency.

ACF has taken part in the plenary meeting of ILGGRI (International Liaison Group of Government Railway Inspectorates). ILGGRI acts as an informal contact platform between the European safety authorities.

Together with a delegation of the Luxembourg Railways sector, ACF attended a workshop on the application of Regulation (EC) No°352/2009 regarding the adoption of a common safety method to do with the evaluation and assessment of the risks. The

workshop was organised by the European Railway Agency (ERA) and 'l'Établissement Public de Sécurité Ferroviaire' (EPSF) [The French Railway Safety Authority].

ACF manages the file related to an application by a builder for authorisation to put a new class of locomotives into service built for the account of the railway undertaking acting on the Luxembourg railway system.

It has also carried out an analysis of the files and taken the decisions regarding requests for authorisation of rolling stock to run on a particular occasion on the Luxembourg railway network (91 cases dealt with).

ACF participates in the preparation of an 'Agreement to introduce mutual recognition procedures for authorisations for both conventional and high speed locomotives and passenger rolling stock' applicable between Germany, Belgium and Luxembourg.

It has drawn up the authorisation to run and the registration of special wagons required for the railway motorway from Bettembourg - Le Boulou while waiting for the completion of the definitive authorisation procedure.

ACF represents the Minister of Sustainable Development and Infrastructure in the meetings of the committee set up in accordance with Article 29 of the Directive 2008/57/EC (Railway Interoperability and Safety Committee 'RISC Committee') and in the working groups and the 'Workshops' relating to it.

In 2009 ACF carried out the evaluation of a file for renewing the certification of CFL (Railway Undertaking)

**Paths Division**

ACF, as the organisation responsible for setting the tariffs and allocating the paths, has joined RailNetEurope (RNE) and participates in the work and the meetings of this group. It is in discussion with the managers of the paths of the neighbouring railways to prepare the timetables for the international trains and those that cross frontiers.

For the 2009 timetable that was valid from 13.12.2008 to 12.12.2009, the 'Cellule CDT-Accès Réseau' [Cellule de Diffusion Technologique – technology distribution unit, network access section] , which was integrated into ACF from 1 August 2009, had allocated 1 700 paths of which 68 % were for passenger traffic, 15 % for freight traffic and 17 % for light locomotives and empty stock. These 1 700 paths represent some 345 000 trains planned to run about 8.3 million km.

There were 25 timetables regarding 1 005 modifications, creations or cancellations of paths, have been published during the monthly updates of the 2009 timetable.

There 504 traffic advices concerning 22 495 modifications, creations or cancellations of trains at short notice (request up to day five) have been prepared.

A total of 336 462 trains actually ran and covered 8.06 million km in 2009.

## D. PROGRESS OF RAILWAY SAFETY

### 1. Initiatives aimed at maintaining/improving the safety performance

*Table D.1.1 – Safety measures taken as a result of accidents / or signs that herald accidents*

| **Accidents/situations that led to measures** | | | **Safety measures taken** |
|---|---|---|---|
| **Date** | **Place** | **Description of the event** | |
| 11/10/2006 | Zoufftgen | Head on collision between a freight train and a regional passenger train | - The measures taken are listed in Chapter: **3. Results of the safety recommendations** |
| 03/02/2009 | Differdange | During a propelling shunting movement the shunter fell under the wheels of a wagon and had both legs severed under the knees. He died on 27 February 2009 | - Reminder to the staff of the RU in question of the rules in force<br>- Removal of the steps in the area of the shunting zones<br>- Request made to fit the steps with side ramps with an anti-slip surface |
| 03/02/2009 | Belvaux/ Soleuvre | As it was impossible for an SNCF driver to start his train he requested assistance. An HLP locomotive of CFL cargo was sent to propel the train from the back. No discussion took place between the two drivers due to linguistic problems | - During an interview with the manager of CFL cargo, he confirmed his intention to organise some French lessons for their German drivers as French is the principle operating language. |
| 10/11/2009 | Bettembourg marshalling yard | A wagon had been uncoupled on a track while it was being recorded by the examiner (protection of the track) | - Validation of a new safety instruction |
| 10/12/2009 | Luxembourg | Passing a fixed signal at danger | - A safety campaign has been launched and a poster has been published by the RU involved |

*Table D.1.2 – Safety measures resulting from other reasons*

| **Description of what gave rise to the measure** | **Description of field concerned** | **Safety measures taken** |
|---|---|---|
| - Introduction of new technique by the IM<br>- Results of audits carried out by the IM<br>- Feedback of IM experience | – General Regulations for Technical Operation (GRO) | - Introduction of a new edition of:<br>GRO 01 General<br>GRO 02 Signals and references<br>GRO 07 Formation of trains<br>GRO 08 Braking of trains<br>GRO 09 Driving and accompanying of trains Appendix to the GRO<br>- Adaptation of GRO by the IM (in progress):<br>- GRO 04 Running of the trains at the operating places<br>- GRO 05 Work on the track or close to the track |
| | – Methods of communication | - Adaptation of the regulations regarding the use of certain means of telecommunication by electromagnetic waves (in progress) |
| | – Training of IM staff | - Adaptation of the regulations regarding the training of IM's staff (in progress)<br>- Revision course |
| | – Level crossings | - Adaptation of the regulations regarding level crossings (in progress) |
| | – System to help drivers MEMORII+ | - Improvement in the use of MEMORII+ during the crossing of the frontier and during shunting |
| - Introduction of new rules by the IM | – Regulation | - Training of staff of the IM and the RUs<br>- Preparation of new rules by the RUs to satisfy the new regulations of the IM |

## 2. Detailed information on the analysis of the trends

**Important remark:**

The values of the Luxembourg CSIs and the calculation of the accident costs have been prepared in accordance with Commission Directive 2009/149/EC of 27 November 2009 amending Directive 2004/49/EC of the European Parliament and of the Council.

During the financial year 2009 the following salient facts were noted:

5 accidents at level crossings including the accidents involving pedestrians

2 fatal accidents to trespassers on railway property, struck by moving rolling stock (it was not possible to be 100 % sure that they were suicides)

1 fatal staff accident

4 suicides

12 broken rails

7 cases of track buckling

2 signalling failures that affected safety

1 signal passed at danger without authorisation

100 % of the main fixed signals and advanced fixed signals are fitted with MEMORII+ (a system to help the driver, and improve the brush crocodile system)

48% of the main fixed signals and advanced fixed signals are fitted with ETCS level 1

142 level crossings of which 107 have active equipment and 35 passive equipment.

As this is the first report of the Luxembourg national safety authority, and thus the first exercise for which the joint safety indicators have been listed, ACF is not able to prepare an analysis of the trends in the safety levelof the Luxembourg railway system.

## 3. Results of the safety recommendations

'L'Administration des Enquêtes Techniques' (AET) [Technical Investigations Administration] was set up by the law of 19 May 2008. Together with the 'Bureau d'Enquêtes sur les Accidents de Transport Terrestre' (BEA-TT France) [Land Transport Accident Investigation Bureau], it has just published in 2009 its first safety recommendations, as part of the technical report on the railway accident at Zoufftgen, an accident which occurred in 2006 and resulted in the death of six people.

Following this accident, 21 recommendations have been made:

Recommendation R1 (CFL): remind all signal box staff that they must be certain before issuing an order to pass a signal that has remained set at danger after selecting the route for which it is the origin signal that the reason it stays in the danger position is, in fact, due to a malfunction of the installations.

Recommendation implemented by the creation, in November 2006, of a guideline sheet to be filled in before issuing an order to pass a signal at danger. Some active check lists specific to signal boxes have been in a trial phase since February 2009.

Recommendation R2 (CFL): from the feedback on the causes of faults at Bettembourg CCP leading to the issuing of an order to pass a signal at danger following the non-opening of an MFS (main fixed signal) specify and introduce a programme of measures to reduce the frequency of these events.

The recommendation was rejected by CFL, they disputed the statement that there are frequent faults and habitual malfunctions. The safety technical installations of Bettembourg CCP (Centralised Control Post) had not suffered any situation which would no longer guaranteed the safety of trains since they had been put into service.

Recommendation R3 (CFL): investigate the causes of the failures to set the MFSs to 'proceed' at Bettembourg CCP encountered at the first attempt at route setting and adopt measures to eradicate them.

An analysis of 93 written A orders issued by Bettembourg CCP for the period of 1 July to 30 September 2006 gave the following results:

For 29 written orders (31.2 %) the traffic controllers had made no entry in the defect report book (for reasons which were indeterminable later)

For the 64 others which were entered in the defect report book, the technical staff were able to carry out a search and eradication of the cause of the fault in question (for example, a track circuit, level crossing, etc.)

The recommendation has not been implemented because the fact that these ‘faults’ are not reported is the result of a lack of attention to detail by the staff and not a sign of doubt of the reliability of the system.

Recommendation R4 (CFL): examine the possibility of creating documents to aid decision making of the traffic controllers to guide them through the process of issuing a pass-through order.

This recommendation does not take account of certain documents (technical notice, noting the routes of the trains) which exist at all the CFL signal boxes or specifically at the Bettembourg control post. These documents are constantly being updated. For the creation of a guideline sheet and check lists see Recommendation R 1.

Recommendation R5 (CFL): examine the possibility of eliminating the risk of confusion associated with the differences in meaning of the VCP (visual control panel) area lights, between the tracks on the French side and the other tracks involved.

Following an investigation, CFL have decided to leave the VCP as it is.

Recommendation R6 (CFL): explore how to make the VCP more uniform by bringing all the information shown on the IPCS [Installations Permanentes de ContreSens SNCF (SNCF fixed equipment for working on the opposite track) module into the area of the VCP where the tracks to Thionville appear and by using the same symbols as those that exist elsewhere on the VCP (two-position arrows along the path of the tracks).

As the physical separation of the IPCS module of the trace of exit lines is consistent with the ergonomic concept of the FCO and is not liable to figure in the causes, even indirectly, which might have made the accident more likely, this recommendation was rejected by CFL.

Recommendation R7 (CFL): re-train the Bettembourg CCP staff on the use of IPCS by adapting this training to suit the current practices at CFL and to ensure that their knowledge is regularly updated.

The initial IPCS training was provided by the SNCF Training Centre. The local managers of Bettembourg station attended this course in 2009 and subsequently carried out the specific training adapted to Bettembourg signal box. They now monitor that the knowledge is maintained.

Recommendation R8 (CFL, SNCF, RFF [Réseau Ferré de France (national public railway company in France)]): examine the feasibility of extending SAAT [Système d'Annonce Automatique des Trains SNCF (SNCF Automatic Train Announcement System)] to Bettembourg, by displaying the first train announced on the VCP.

The automatic train announcement systems such as the ZNL 800 [Zugnummernmeldeanlage – train number announcement system] of CFL or the SAAT of SNCF are only aids to operation and never affect the safety of train running. They can only contribute indirectly to the improvement of safety.

CFL and SNCF have taken the decision to develop an interface to connect the ZNL 800 and SAAT systems. This interface is in the trial phase between Longwy (SCNF) and Rodange (CFL).

Recommendation R9 (CFL): review the wiring of the direct telephone connections to Bettembourg CCP and ensure that emergency lines run simultaneously to the desks of the Traffic Controller and the Announcer so that they can receive messages which may have an emergency nature; also provide a means of immediately contacting Headquarters, under any circumstances, in the event of an emergency.

A new digital telephone installation was been put into service on 10 June 2007 as part of a modernisation programme independent of the accident on 11 October 2006.

Recommendation R10 (CFL): introduce maintenance procedures and a check of the operation of the radio warning system to ensure that it works properly.

Due to the conclusions of the legal proceedings this recommendation should be deleted.

Recommendation R11 (CFL, SNCF, RFF): change the ground-train radio systems so that radio warnings and radiotelephonic communications sent by Bettembourg or Thionville Control Posts can be received on the systems of the radio blocks located on the other side of the border.

An SNCF mobile block GRT (ground-train radio) was put into service at Bettembourg PCC on 19 October 2006 and replaced by a fixed block on 30 April 2007. With the introduction of SNCF GSM-R, the automatic alarm report on the frontier section, by the IANA (Interface Analogique et Numérique d'Alerte radio) [Analogue and Digital Interface of the Radio Alert System] has been operational since 14 September 2009.

Recommendation R12 (SNCF, RFF, EPSF): consider tightening the regulations in the event of a radio fault, by stipulating that the fault must be remedied (by changing the traction unit, providing a portable radio set, etc.) according to stricter criteria.

This recommendation does not affect the Luxembourg railway staff.

Recommendation R13 (CFL): provide Bettembourg CCP staff (and if necessary staff elsewhere using similar systems) with further training on electric traction and ensure that their skills are kept up to date.

The question of how to make an emergency power cut has been raised with the traffic managers regularly in the training courses. A note on this subject was published in April 2008.

Recommendation R14 (CFL, SNCF, RFF): install the telephone links required to cut off the power quickly on request from the Bettembourg CCP in the event of an emergency on the French border-Thionville section of line.

The telephone links were up and running from 19 October 2006.

Recommendation R15 (CFL): based on an analysis of staff activity, examine the safety regulations so that the division of the safety tasks to be performed in a signal box like the one at Bettembourg CCP, by the different employees in the box (traffic controller, train announcer and signalmen), corresponds both to the employee responsibilities and to operational constraints.

A new organisation at Bettembourg CCP was introduced on 16 July 2007.

Recommendation R16 (CFL): implement the relief protocol, ensuring, in particular, that handover is done directly between the two employees that occupy the relevant position , as the regulations require.

More verifications and checks have been done at the control centres and systematic audits have been carried out.

Recommendation R17 (CFL): examine the possibility, when passing on safety information at handover, of using standardised documents (on the national or local level), to ensure that this information can be traced and provides comprehensive coverage of all the information (and only that information) required by the person taking over.

The different registers and note books used at signal boxes are standardised documents and their use is obligatory. The direct handover as well as the correct annotation of the documents are checked.

Recommendation R18 (CFL, SNCF and RFF): prepare staff responsible for safety to deal with the emergency situations that are most likely to occur, including in particular:

- identifying the risks to be dealt with;
- formalising possible reaction scenarios;
- training and staging exercises.

Multifunctional exercises take place twice a year between SNCF and CFL and this is done in the context of a serious situation.

Since September 2006, CFL has a computerised control post simulator that can be used by the control post operators during their re-training, which, among other things, can simulate the measures to be applied during serious operating situations. From the feedback of experience received from the operators and trainers, the use of this simulator clearly increases the quality of the continuous training.

Recommendation R19 (CFL): revise the General Regulations for Technical Operations (GRO) and the Station Instructions, with a view to adapting the reference documents to the actual rail traffic control conditions and to providing staff with operational documents that guide their actions in real time.

The new sections 01, 02, 07, 08 and 09 of the GRO came into force on 2 February 2009 and the sections 04 and 10 are now being finalised. A new version of the Bettembourg station instructions has been in force since September 2009.

Recommendation R20 (CFL): consider changing the arrangements for operators to submit feedback reports and build them into the safety management system procedures that provide reliable feedback reports, in a non-punitive context.

Take into account, when analysing accidents and near misses, aspects connected with the work context and organisation.

During safety audits, the auditors have always looked for constructive dialogue in order to detect irregularities and quasi-incidents. CFL has for the last fifteen years had an allocated person to whom the staff can speak anonymously and in confidence.

In the system of safety management, which is now being finalised, a procedure will ensure that the information coming from operators is dealt with at a high level.

Recommendation R21 (CFL): enable local managers to be on the spot and have the necessary means to check and monitor the staff on the ground.

Since February 2009 a reorganisation of the operational zones has been put in place with the creation of a railway safety assistance section which has the particular job of supervising and managing the control posts from the point of view of safety.

Of the 21 recommendations, 15 have been implemented, five have been rejected and one does not concern Luxembourg railway staff.

## E. IMPORTANT MODIFICATIONS IN THE LEGISLATION AND THE REGULATIONS

### 1. Legislation

**- The law of 22 July 2009 regarding railway safety**

The object of this law is:

A) to transpose into national law the Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways;

B) to create a regulatory framework for railway safety;

C) to set up an ACF [Luxembourg Railway Authority] and

D) to modify

a) the amended law of 11 June 1999 regarding access to the railway infrastructure and its utilisation and

b) the modified law of 29 June 2004 on public transport.

It determines among other things, the requirements in safety matters applicable to the Luxembourg railway system, including the safe management of the infrastructure and the traffic, as well as the interaction between the railway undertakings and infrastructure manager. The law also includes some requirements regarding the certification of railway undertakings and the railway infrastructure manager, some requirements regarding the qualification of the staff allocated to the safety tasks and the certification of the rolling stock.

- **Grand Duchy Regulation (RGD) of 21 September 2009 on the certification regarding safety of the railway Infrastructure Manager**
  The RGD contains provisions regarding the conditions for obtaining and validating safety authorisations.

- **Grand Duchy Regulation (RGD) of 21 September 2009 on the certification regarding safety of railway undertakings**
  This RGD firstly contains some provisions regarding the conditions for obtaining and validating safety certificates, and secondly modifies the following RGDs;
  1) the modified Grand Duchy Regulation of 31 March 2003 defining the procedures for the application of the charges for the Luxembourg railway infrastructure
  2) the Grand Duchy Regulation dated 3 October 2006
     a) defines the procedures for access to the tracks and other services of the Luxembourg railway infrastructure and
     b) modifies the Grand Duchy Regulation dated 31 March 2003 defining the procedure for the application of the charges for the Luxembourg railway infrastructure
     and repeals the Grand Duchy Regulation of 24 October 2003 on the conditions of issue and validity of the safety certificates for railway undertakings.

## 2. Regulations

Several documents regarding the technical operation of the system of which certain parts of the General Regulations for Technical Operation (GRO) have been modified by the infrastructure manager and new versions have been distributed to the staff concerned:

- **New version of GRO 01 General**
  GRO 01 contains the fundamental definitions for the operation and the general principles for railway operation.

- **New edition of GRO 02 Signals and markers**
  GRO 02 contains the description and meaning of the signals and markers used by the Luxembourg railway network.

- **New edition of GRO 07 Formation of trains**
  GRO 07 contains provisions regarding the formation of passenger trains and freight trains and provisions for technical operation regarding the carriage of dangerous goods and exceptional loads.

- **New edition of GRO 08 Braking of trains**
  GRO 08 contains basic information and definitions regarding braking. It also contains regulations regarding the braking of trains and brakes of wagons being shunted and the immobilisation of stationary wagons without a locomotive.

- **New edition of GRO 09 Drivers and train crew**
  GRO 09 contains provisions regarding drivers and train crew.

- **New edition of the Appendix to the GRO**
  This document contains additional information and details for application of the provisions of the General Regulations for Technical Operation (GRO).

- **New edition of the special instruction regarding the operation of short dead end lines**
  The instruction contains the provisions regarding the operation of short dead end lines of Luxembourg National Railways.

- **New frontier instruction Pétange – Athus/Aubange**
  The instruction contains a description of the cross-border section and specifies certain operating conditions.

- **New frontier instruction Pétange – Longwy**
  The instruction contains a description of the cross-border section and specifies certain operating conditions.

- **Modification of the cross-border instruction Wasserbillig – Igel**
  The instruction contains a description of the cross-border section and specifies certain operating conditions.

## F. DEVELOPMENT OF SAFETY CERTIFICATION AND SAFETY APPROVAL

### 1. National legislation - dates of introduction - availability

1.1. Date from which safety certificates (Part A and Part B) were issued in accordance with Article 10 of Directive 2004/49/EC.

Chapter IV of the law of 22 July 2009 regarding railway safety contains the general provisions for obtaining a safety certificate Part A and Part B. The law was published on 27 July 2009 in the 'Mémorial' (The Official Journal of the Grand Duchy of Luxembourg). This law came into force on 1 August 2009.
The Grand Duchy Regulation of 21 September 2009 on the certification of the safety of railway undertakings specifies the details of the conditions for obtaining and validating safety certificates as well as the procedures for their preparation. It also lays down the conditions and the procedure for renewing, re-examining and withdrawal of the certificates. The date when the regulation in question came into force was 5 October 2009, the date of its publication in the Mémorial.

1.2. Date from which safety authorisations were issued in accordance with Article 11 of Directive 2004/49/CE.

Chapter V of the law of 22 July 2009 regarding railway safety contains the general provisions for obtaining a safety authorisation. This law came into force on 1 August 2009.

The Grand Duchy Regulation of 21 September 2009 on the certification of the safety of railway undertakings specifies the conditions for obtaining and validating the safety authorisation, as well as the procedures for its preparation. It also lays down the conditions and procedure for renewing, re-examining and withdrawal of the authorisations. The regulation in question came into force on 5 October 2009, the date of its publication in the Mémorial.

1.3. Provision of national safety rules or other relevant legislation to railway undertakings and infrastructure managers.

The Luxembourg legal texts are officially published in the Mémorial (The Official Journal of the Grand Duchy of Luxembourg). They can also be consulted at any time on the Legilux website (http://legilux.public.lu/).

The national safety rules relative to Annex II of Directive 2004/49/EC are distributed on request to interested parties by ACF. The manager of the CFL infrastructure supplies its documents containing the operating rules to railway undertakings that have a safety certificate for the Luxembourg railway infrastructure.

Certain technical rules regarding the authorisation to introduce rolling stock into service are published on www.railinfra.lu.

## 2. Figures (Appendix E)

## 3. Procedural aspects

### 3.1. Part A safety certificates

3.1.1. Reasons for which a revision/amendment of Part A certificates has been requested (for example, for a change of the type of service, an extension of the traffic or the size of the company).

No request was recorded in 2009.

3.1.2. Principle reasons for exceeding the time of four months for the issue of part A certificates. (The time specified in Article 12(1) Railway Safety Directive which starts after the receipt of all the necessary information).

No case in 2009.

3.1.3. Details of the requests of the foreign national safety authorities with a view to checking or accessing information regarding the Part A certificate of a railway undertaking certified in Luxembourg, requesting a Part B certificate in another Member State.

No request was recorded in 2009.

3.1.4. Summary of the problems of mutual recognition of Part A certificates valid throughout the European Union.

No case in 2009.

3.1.5. Fee to be paid to the National Safety Authority for the issue of a Part A certificate.

At present no fee is due for the issue of a Part A certificate, but this matter is being considered.

3.1.6. Summary of the problems related to the use of harmonised formats for the Part A certificates in relation to the types and the extensions of services.

No case in 2009.

3.1.7. Summary of the problems/difficulties frequently met by the National Safety Authority in the procedures for application for Part A certificates.

The evaluation of whether the application meets the criteria given in the draft regulations of the European Commission prepared by ERA, for a method of common safety to assess if the application conforms with the requirements to obtain a safety certificate is not straight forward as there is no 'European Check list' of the documents to be supplied.

Without a detailed examination of the application, it is impossible to establish whether or not the file is complete which results in a long delay.

3.1.8. Summary of the problems reported by the railway undertakings during their application for a Part A certificate.

No case reported in 2009.

3.1.9. Feed-back procedure (for example a questionnaire) which enables railway undertakings to express their opinion on the procedures/practices regarding the issuing of the certificates or to register a complaint.

There is no feedback procedure; each railway undertaking can contact ACF to make their views known on the matter. No feedback was received in 2009.

### 3.2. Part B safety certificates

3.2.1. Reasons for which a revision/amendment of Part B certificates was requested (for example, for a change regarding the types of services, the amount of traffic, the lines to be operated, the type of rolling stock, the category of staff, etc.).

No request recorded in 2009.

3.2.2. Principle reasons for exceeding the time of four months for the issue of Part B certificates. (The time specified in Article 12(1)Railway Safety Directive which starts after the receipt of all the necessary information).

No case in 2009.

3.2.3. Fee to be paid to the National Safety Authority for the issue of a Part B certificate.

At present no fee is due for the issue of a Part B certificate, but this matter is being considered.

3.2.4. Summary of the problems connected with the use of harmonised formats for the Part B certificates in general and in particular in connection with the types of service or the extension of services.

No problem in 2009.

3.2.5. Summary of the problems/difficulties frequently met by the National Safety Authority in the procedures for requesting Part B certificates.

The evaluation of whether the application meets the criteria given in the draft regulations of the European Commission prepared by ERA, for a method of common safety to assess if the application conforms with the requirements to obtain a safety certificate is not straight forward as there is no ‘European Check list’ of the documents to be supplied.

Without a detailed examination of the application, it is impossible to establish whether or not the file is complete which results in a big delay.

3.2.6. Summary of the problems reported by the railway undertakings during their application for a part B certificate.

No case reported in 2009.

3.2.7. Feed-back procedure (for example a questionnaire) which enables railway undertakings to express their opinion on the procedures/practices regarding the issuing of the certificates or to register a complaint.

There is no feedback procedure; any railway undertaking can contact ACF to make their views known on the matter. No feedback was received in 2009.

### 3.3. Safety authorisations:

No safety authorisation had been issued up to the end of 2009.

3.3.1. Reasons for the revision/amendment of safety authorisations.

/

3.3.2. Main reasons for exceeding the time of four months for the issue of safety authorisations. (Time specified in Article 12(1)Railway Safety Directive which starts after the receipt of all the necessary information).

/

3.3.3. Summary of the problems/difficulties frequently met by the National Safety Authority in the procedures for applying for safety authorisation.

ACF considers that it will meet the same problems as in the evaluation of the applications for safety certificates (points 3.1.7 and 3.2.5).

3.3.4. Summary of the problems reported by the infrastructure managers during their application for a safety authorisation.

/

3.3.5. Feedback procedure (for example, a questionnaire) enabling the Infrastructure Manager to express his opinion on the procedures/practices regarding the issue of the certificates or to register a complaint.

There is no feedback procedure; the infrastructure manager can contact ACF to make his views known on the matter.

3.3.6. Fee to be paid to the National Safety Authority for the issue of a safety authorisation.

At present no fee is due for the issue of a safety authorisation, but this matter is being considered.

## G. MONITORING OF THE RAILWAY UNDERTAKINGS AND INFRASTRUCTURE MANAGERS

As ACF was only set up in August 2009, and as it does not have staff to carry out the monitoring of the RUs and the IM, it has not been able to fulfil its obligations as far as inspections are concerned.

## 1. Monitoring of the railway undertakings and infrastructure managers

1.1. Audits/Inspections/Lists of inspections

/

1.2. Points to check/key points to follow up

/

## 2. Description of the treatment of the legal aspects in the annual reports of the infrastructure managers and railway undertakings – Availability of the annual reports before 30 June (in accordance with Article 9(4)Railway Safety Directive)

ACF has received, within the time limit, the annual report of CFL as manager of the infrastructure and all the other railway undertakings that have a safety certificate for the Luxembourg railway infrastructure, i.e.

- CFL (railway undertaking / passenger business management)
- CFL cargo
- SNCF (SNCF 'Fret' – SNCF Freight)
- SNCB (B-CARGO OPERATIONS)

## 3. Number of inspections carried out at the IM and RUs in 2009

| INSPECTIONS | At RUs that have a Part A safety certificate | At RUs that have a Part B safety certificate | At IMs that have a safety authorisation | At RUs that have a safety certificate 2001/14 |
|---|---|---|---|---|
| Planned | 0 | 0 | 0 | 0 |
| Unplanned | 0 | 0 | 0 | 0 |
| Carried out | 0 | 0 | 0 | 0 |

### 4. Number of audits carried out at the IMs and RUs in 2009

| AUDITS | At RUs that have a Part A safety certificate | At RUs that have a Part B safety certificate | At IMs that have a safety authorisation | At RUs that have a safety certificate 2001/14 |
|---|---|---|---|---|
| Planned | 0 | 0 | 0 | 0 |
| Unplanned | 0 | 0 | 0 | 0 |
| Carried out | 0 | 0 | 0 | 0 |

### 5. Summary of the measures/corrective actions (amendment, withdrawal, suspension, serious warning, etc.) connected to safety aspects following these audits/inspections

/

### 6. Summary/brief description of the complaints of infrastructure managers on the subject of the railway undertakings, linked with the conditions stipulated in their certificate Part A/Part B

No complaint recorded in 2009.

### 7. Summary/brief description of the complaints of the railway undertakings on the subject of the infrastructure managers, linked with the conditions stipulated in their authorisation

No complaint recorded in 2009.

## H. REPORT ON THE APPLICATION OF THE CMSS TO THE RISK ASSESSMENT

The Commission Regulation (EC) No 352/2009 of 24 April 2009 onthe adoption of a common safety method (CMS) on riskevaluation will only apply from 1 July 2012.

However it applies from 19 July 2010;
a) to all significant technical modifications to vehicles, such as are defined in Article 2© Directive 2008/57/EC.
b) to all significant modifications to the structural sub-systems, when Article 15(1)Directive 2008/57/CE or an TSI require it.

Since the regulations in question will only become mandatory in 2010 or 2012 respectively, we have not recorded any application of the common safety methods in 2009.

## I. CONCLUSIONS – PRIORITIES

Due to its recent creation ACF is not able to plot the progress of the level of safety in accordance with Directive 2004/49/EC on the Luxembourg railway infrastructure, and is thus not able to draw conclusions regarding how it has evolved.

However, in view of the number of accidents which occurred in 2009, the level of safety can be considered as high. The principle objective of ACF is at least to maintain this level, and indeed to improve it in conjunction with all the stakeholders concerned.

The progressive implementation of ETCS on the whole of the Luxembourg railway system and on the tractive units can considerably increase the level of safety, for example by reducing the risk of passing signals at danger.

A major priority for ACF in 2010 is the development of an organisation which enables it to meet better its national and international obligations.

There is a very limited number of people who have the necessary experience and ability to carry out the tasks of monitoring, auditing and advising in the railway sector and this is the main difficulty in recruiting suitable candidates. It will be necessary to find a solution in the short term so that ACF is fully able to play the part that is required by law.

## J. SOURCES OF INFORMATION

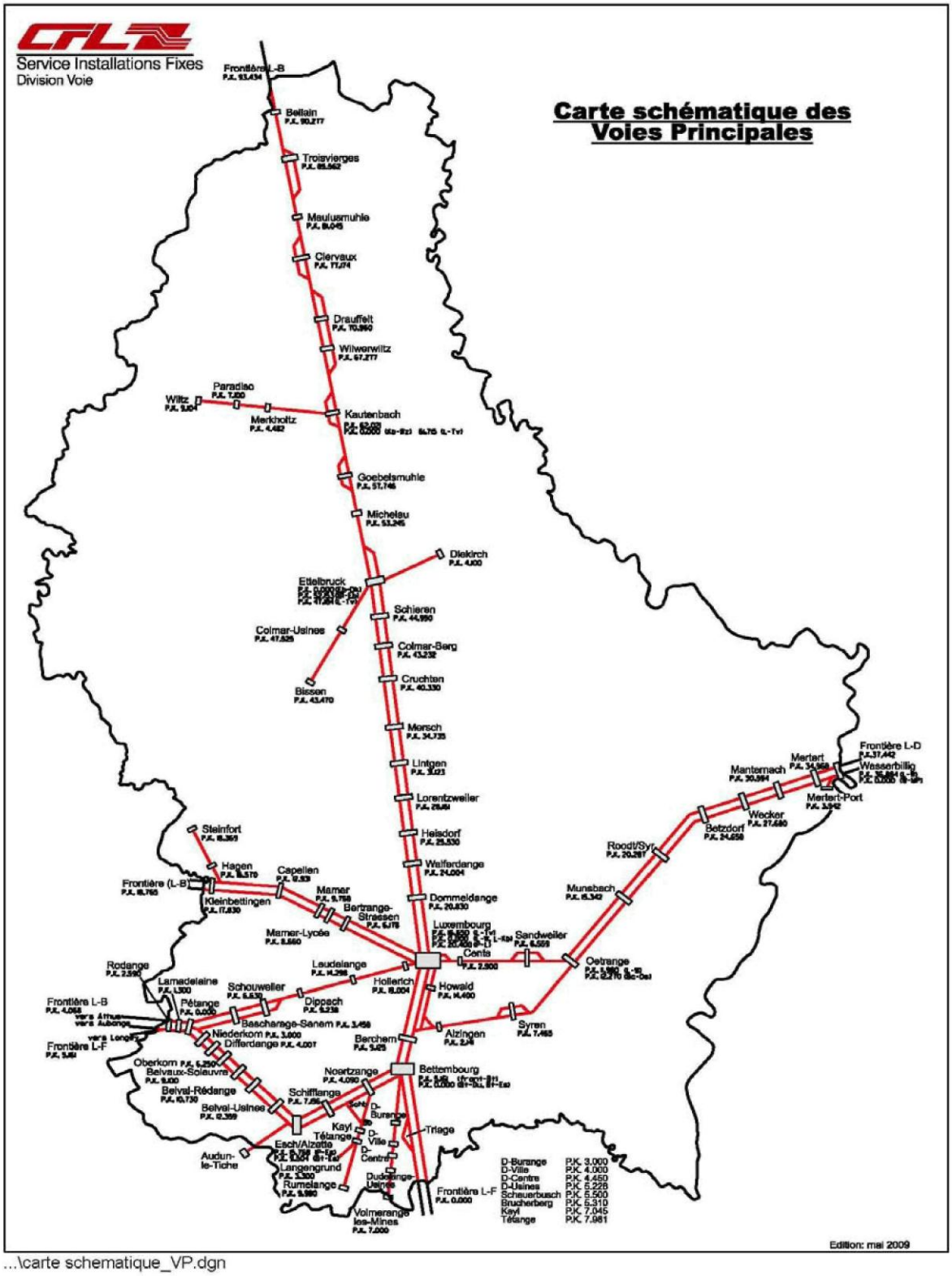
- Publications in the MEMORIAL (The Official Journal of the Grand Duchy of Luxembourg)
- ACF internal information
- Information received from the infrastructure manager and railway undertakings
- The reports of the Administration for Technical Investigations (AET)

## K. APPENDICES

| | |
|---|---|
| Appendix A: | Information on the railway structure |
| Appendix B: | Organisation charts of the National Safety Authority |
| Appendix C: | Information on Common Safety Indicators CSI – Definitions used |
| Appendix D: | Important amendments to the legislation and the regulations |
| Appendix E: | The changes in the certification and safety authorisation in figures |

## Appendix A: Information on the railway structure

### A.1. Map of the network




...\carte schematique_VP.dgn

**Carte schématique des Voies Principales = Map of the main lines**

## A.2 List of railway undertakings and infrastructure managers

**Infrastructure manager (at 31 December 2009)**

| | |
|---|---|
| Name: | CFL |
| Address: | 9, place de la Gare, L-1616 Luxembourg |
| Website: | www.cfl.lu |

**Railway undertakings (at 31 December 2009)**

**a. Carriage of passengers and freight**

| | |
|---|---|
| Name: | CFL |
| Address: | 9, place de la Gare, L-1616 Luxembourg |
| Website: | www.cfl.lu |
| Safety certificate: | No 001 and 003 certificates in accordance with Directive 2001/14/EC. |
| Valid until: | 16 September 2009 (out of date) |

At 31 December 2009 no RU had a certificate to carry passengers and freight.

**b. Carriage of passengers**

| | |
|---|---|
| Name: | CFL |
| Address: | 9, place de la Gare, L-1616 Luxembourg |
| Website: | www.cfl.lu |
| Safety Certificate Part A | LU 11200090001 |
| Valid until: | 16 September 2014 |
| Safety Certificate Part B | LU 12200090001 |
| Valid until: | 16 September 2014 |

**c. Carriage of freight**

| | |
|---|---|
| Name: | SNCF |
| Address: | 34, rue du Commandant Mouchotte, F-75699 Paris Cedex 14 |
| Website: | www.sncf.com |
| Safety certificate: | No 002 certificate in accordance with Directive 2001/14/EC. |
| Valid until: | 08 November 2010 |

| | |
|---|---|
| Name: | CFL cargo SA |
| Address: | 11, boulevard J.F. Kennedy, L-4170 Esch-sur-Alzette |
| Website: | www.cfl.lu (tab 'Espace CFL cargo') |
| Safety certificate: | No 004 certificate in accordance with Directive 2001/14/EC. |
| Valid until: | 05 December 2011 |

| | |
|---|---|
| Name: | SNCB (B-Cargo OPERATIONS) |
| Address: | Avenue de la Porte de Hal, 40, B-1060 Bruxelles |
| Website: | www.sncb.be |
| Safety certificate: | No 005 certificate in accordance with Directive 2001/14/EC. |
| Valid until: | 10 March 2013 |

## A.2.1. Infrastructure Manager

| | |
|---|---|
| **Name** | Société Nationale des Chemins de Fer Luxembourgeois [Luxembourg National Railways] (CFL) |
| **Address:** | 9, place de la Gare,<br>L-1616 Luxembourg |
| **Website:** | www.cfl.lu |
| **Link to the system reference document** | www.railinfra.lu |
| ***Safety authorisation (number/date)*** | -- / - |
| ***Date of start of commercial activity*** | Law of 10 May 1995 regarding the management of the infrastructure |
| ***Total length of the railway/gauge*** | 619 km / 1435 mm |
| ***Length of the railway electrified/voltage*** | 48 km / 3kV<br>528 km / 25kV |
| ***Total length of double track/single track*** | 147 km / 128 km |
| ***Total length of high speed lines (HS lines)*** | 0 km |
| ***ATP equipment used*** | MEMOR II+ / ETCS level 1 |
| ***Number of level crossing (PN)s*** | 142 |
| ***Number of main colour light signals*** | 518 |

Key: ATP = Automatic Train Protection

## A.2.2. Railway undertakings

### A.2.2.1. CFL

| | |
|---|---|
| **Name** | Luxembourg National Railways (CFL) |
| **Address:** | 9, place de la Gare,<br>L-1616 Luxembourg |
| **Website:** | www.cfl.lu |
| ***Safety certificate as per 2001/14/EC (number/date)*** | No 001 / 20-12-2004<br>No 003 / 07-09-2005 |
| ***Date of start of commercial activity*** | Law of 16 June 1947 |
| ***Safety Certificate Part A - B as per 2004/49/EC (number/date)*** | A - No LU 1120090001 / 20-12-2009<br>B - No LU 1220090001 / 20-12-2009 |
| ***Type of carriage (freight, etc.)*** | Passengers to the exclusion of high speed services<br>Freight until 16-09-2009 |
| ***Number of locomotives*** | 70 |
| ***Number of electric multiple units/sets diesel railcars*** | 36 diesel railcars |
| ***Number of coaches*** | 92 coaches<br>20 driving trailers |
| ***Number of wagons*** | |
| ***Number of train drivers*** | 250 |
| ***Number of staff on board trains carrying out safety tasks (excluding drivers)*** | 230 (train crew) |
| ***Volume of passenger traffic*** | 332.88 million passenger kilometres<br>7.13 million passenger train kilometres |
| ***Volume of freight traffic*** | 113.87 million gross tonne-kilometres hauled |

## A.2.2. Railway undertakings

### A.2.2.2. SNCF

| | |
|---|---|
| **Name** | SNCF |
| **Address** | 34, rue du Commandant Mouchotte<br>F-75699 Paris Cedex 14 |
| **Website:** | www.sncf.com |
| ***Safety certificate as per 2001/14/EC (number/date)*** | No 002 / 08/11/2005 |
| ***Date of start of commercial activity*** | |
| ***Part A – B Safety Certificate as per 2004/49/EC (number/date)*** | |
| ***Type of carriage (freight, etc.)*** | Freight |
| ***Number of locomotives*** | |
| ***Number of electric multiple units/sets<br>diesel railcars*** | |
| ***Number of coaches*** | |
| ***Number of wagons*** | |
| ***Number of train drivers*** | |
| ***Number of staff on board trains carrying out safety tasks (excluding drivers)*** | |
| ***Volume of passenger traffic*** | |
| ***Volume of freight traffic*** | |

## A.2.2. Railway undertakings

### A.2.2.3. CFL cargo SA

| | |
|---|---|
| **Name** | CFL cargo SA |
| **Address** | 11, boulevard J.F. Kennedy,<br>L-4170 Esch-sur-Alzette |
| **Website:** | www.cfl.lu (tab 'Espace CFL cargo') |
| ***Safety certificate as per 2001/14/EC (number/date)*** | No 004 / 11-12-2006 |
| ***Date of start of commercial activity*** | |

| | |
|---|---|
| ***Part A – B Safety Certificate as per 2004/49/EC (number/date)*** | |
| ***Type of carriage (freight, etc.)*** | Freight |
| ***Number of locomotives*** | |
| ***Number of electric multiple units/sets<br>diesel railcars*** | |
| ***Number of coaches*** | |
| ***Number of wagons*** | |
| ***Number of train drivers*** | |
| ***Number of staff on board trains carrying out safety tasks (excluding drivers)*** | |
| ***Volume of passenger traffic*** | |
| ***Volume of freight traffic*** | |

## A.2.2. Railway undertakings

### A.2.2.4. SNCB

| | |
|---|---|
| **Name** | SNCB |
| **Address** | Avenue de la Porte de Hal, 40<br>B-1060 Bruxelles |
| **Website:** | www.sncb.be |
| ***Safety certificate as per 2001/14/EC (number/date)*** | No005 / 10-03-2008 |
| ***Date of start of commercial activity*** | |
| ***Safety Certificate Part A - B as per 2004/49/EC (number/date)*** | |
| ***Type of carriage (freight, etc.)*** | Freight |
| ***Number of locomotives*** | |
| ***Number of electric multiple units/sets<br>diesel railcars*** | |
| ***Number of coaches*** | |
| ***Number of wagons*** | |
| ***Number of train drivers*** | |
| ***Number of staff on board trains carrying out safety tasks (excluding drivers)*** | |
| ***Volume of passenger traffic*** | |
| ***Volume of freight traffic*** | |

## Appendix B: Organisation chart of the National Safety Authority

**B.1. Internal organisation**

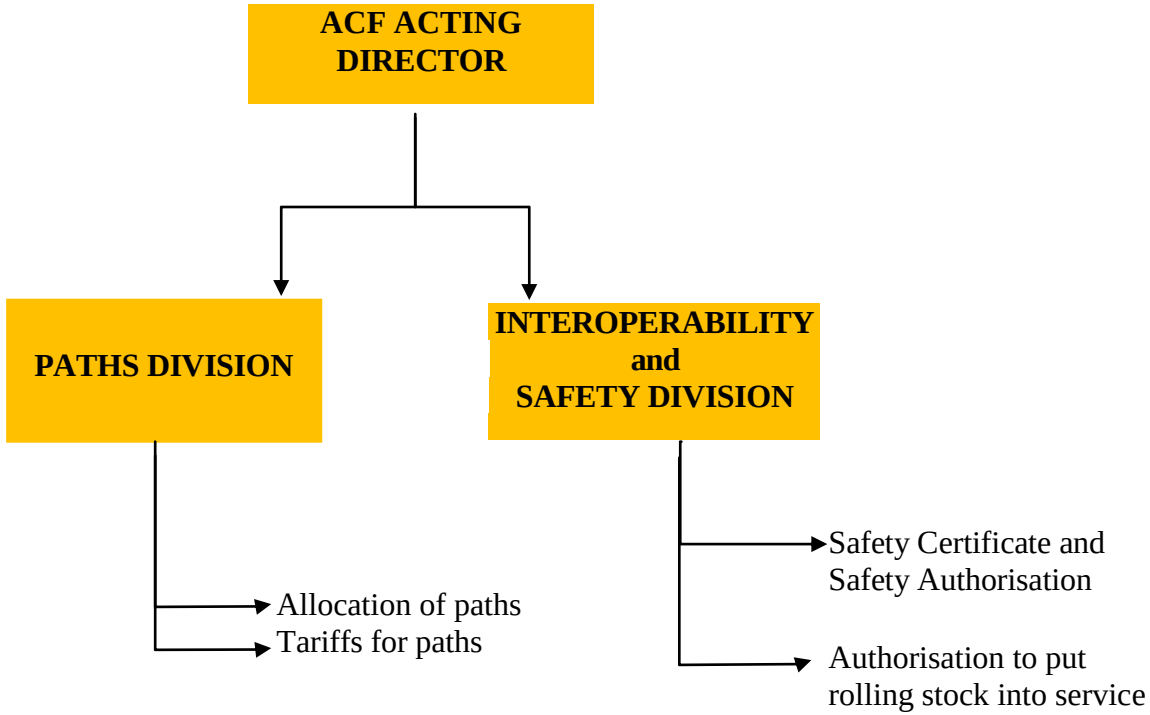
**B.2. Relations with other national authorities**

## Appendix B: Organisation chart of the National Safety Authority

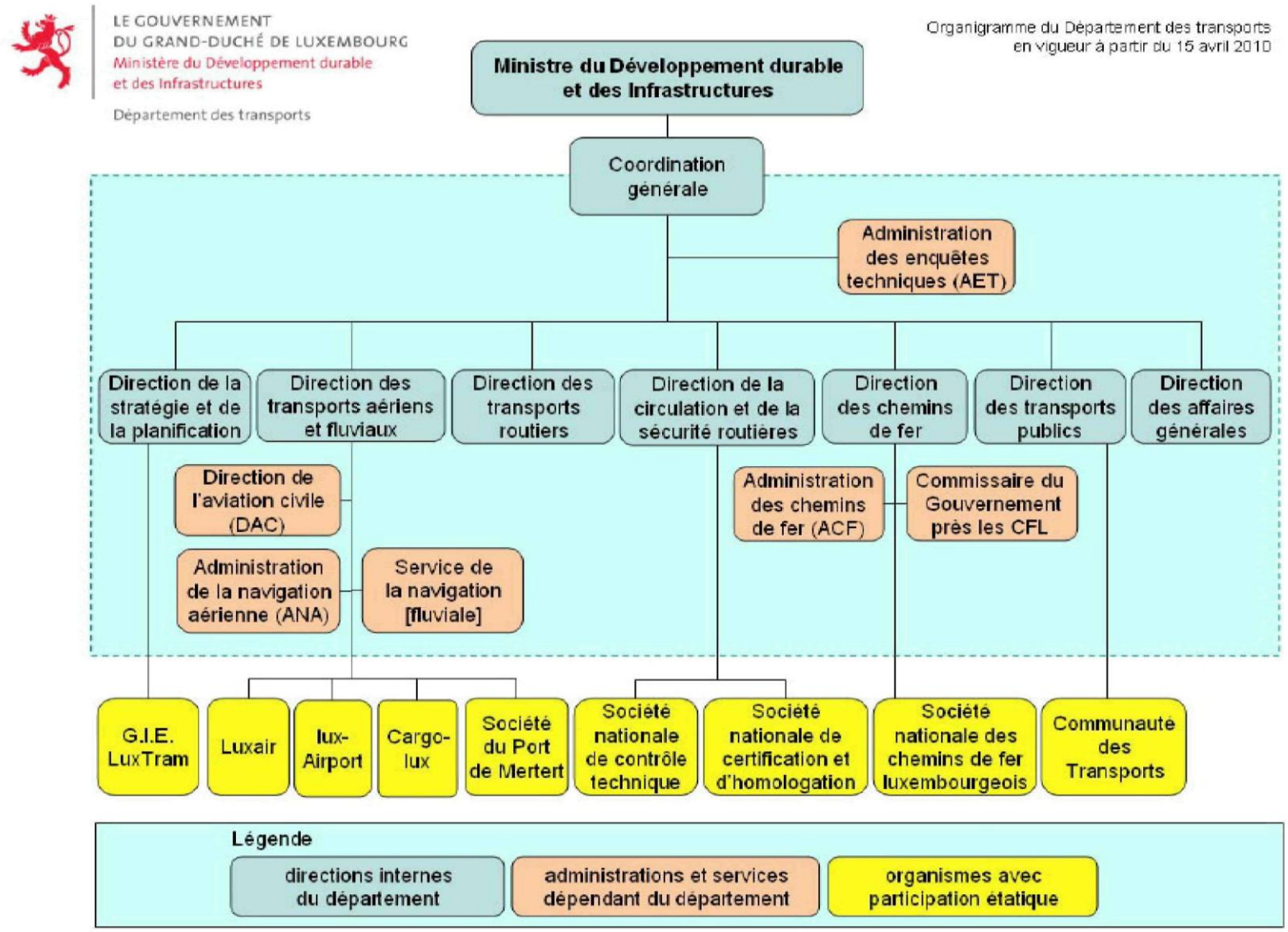
### B.1. Internal organisation at 31 December 2009

MINISTÈRE DU DÉVELOPPEMENT DURABLE
ET DES INFRASTRUCTURES
Département des transports

Administration des chemins de fer



## B2. Relations with other national authorities



## Key for page 38

## B2 Relations with other national authorities

THE GOVERNMENT OF THE
GRAND DUCHY OF LUXEMBOURG
Ministry of Sustainable Development
and Infrastructure

Transport Department

Organisational chart of the Transport Department
from 15 April 2010

**Ministry of Sustainable Development and Infrastructure**

General Coordination

Administration of Technical Investigations (AET)

| | | | | | | |
|---|---|---|---|---|---|---|
| Department for Strategy and Planning | Department for Air and Waterway Transport | Department for Road Transport | Department for Traffic and Road Safety | Department for Railways | Department for Public Transport | Department for General Affairs |

| | |
|---|---|
| Department for Civil Aviation (DAC) | |
| Administration of Aerial Navigation | River Navigation Service |

| | |
|---|---|
| Luxembourg Railway Authority (ACF) | Government Commissioner at CFL |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GIE Lux Tram | Luxair | Lux-Airport | Cargo-lux | Mertert Port Company | National Body for Testing Vehicle Safety and Roadworthiness | National Certification and Type Approval Company | Luxembourg National Railways | Community Transport |

Key

| | | |
|---|---|---|
| Internal sections in the Department | Administration and Services in the Department | Organisations with state participation |

## Appendix C: CSI Information - Definitions used

(CSI Common Safety Indicators)

### C.1. CSI Information

Reference information

| Reference information | |
|---|---|
| Number of million train kilometres (train-km millions) | 8.06 |
| Number of million passenger train-kilometres (passenger train-km) | 7.13 |
| Number of million freight train-kilometres (freight train-km) | 0.93 |
| | |
| Number of million passenger-kilometres (p-km millions) | 332.88 |

C.1.1 Indicators regarding accidents

C.1.1.1 Total and number per million train-kilometres (million t-km) of significant accidents and breakdown according to the types of accidents

| Types of accident | Number | Number per million t-km |
|---|---|---|
| Train collisions, including those with obstacles within the loading gauge | 0 | 0.00 |
| Derailments of trains | 0 | 0.00 |
| Accidents at level crossings including pedestrians | 5 | 0.62 |
| Accidents to persons caused by moving rolling stock | 3 | 0.37 |
| Fires in rolling stock | 0 | 0.00 |
| Others | 0 | 0.00 |
| Total | 8 | 0.99 |

C.1.1.2 Total and number per million train-kilometres (million t-km) of persons seriously injured and persons killed by types of person and by type of accident

| Types of persons | Number | Number per million train-km | Number per million p-km | Number per million km-tv |
|---|---|---|---|---|
| Passengers | 0 | 0.00 | 0.00 | 0.00 |
| Persons, including sub-contractors | 1 | 0.12 | | |
| Users of level crossings | 0 | 0.00 | | |
| Unauthorised persons found in railway premises | 2 | 0.25 | | |
| Others | 0 | 0.00 | | |
| Total | 3 | 0.37 | | |

All the people were killed by moving rolling stock

Number per million p-km = Number per million passenger-km

Number per million pt-km = Number per million passenger train-km

## C.1.2 Indicators relating to dangerous goods

Total and number per million train kilometres (million t-km) of accidents during the carriage of dangerous goods

| Accidents with dangerous goods | Number | Number per million t-km |
|---|---|---|
| Accidents implicating at least one railway vehicle carrying dangerous goods | 0 | 0.00 |
| Accidents of this type involving the release of dangerous substances | 0 | 0.00 |
| Total | 0 | 0.00 |

## C.1.3 Indicators regarding suicides

Total and number of suicides per million train-kilometres (million t-km)

| Suicides | Number | Number per million t-km |
|---|---|---|
| Total | 4 | 0.50 |

## C.1.4 Indicators regarding the precursors of accidents

Total and number of precursors per million train kilometres (million t-km)

| Types of precursor | Number | Number per million t-km |
|---|---|---|
| Broken rails | 12 | 1.49 |
| Cases of track buckling | 7 | 0.87 |
| Signalling failures that affected safety | 2 | 0.25 |
| Signals at danger passed without authorisation | 1 | 0.12 |
| Broken wheels and axles of rolling stock in service | 0 | 0.00 |
| Total | 22 | 2.73 |

## C.1.5 Indicators regarding the economic aspects of accidents

Total and cost per million train-kilometres (million t-km) in euros and by type of cost. Only the economic impact of **significant accidents** (to number 3) is taken into account in the table below.

| Types of cost | € thousands | € thousands per million t-km |
|---|---|---|
| Number of deaths and serious injuries multiplied by the value of prevention of a death or serious injury. | 8163.3 | 1012.7 |
| Costs and damage caused to the environment | 0.0 | 0.0 |
| Costs of the damage caused to rolling stock or to the infrastructure | 0.0 | 0.0 |
| Signals at danger passed without authorisation | 0.0 | 0.0 |
| Costs of delays following accidents | 6.6 | 0.8 |
| Total | 8169.9 | 1013.5 |

## C.1.6 Indicators relative to technical safety of the infrastructure and its implementation

### C.1.6.1 System of Automatic Train Protection (ATP)

| Indicators | MEMOR II+ | ETCS |
|---|---|---|
| Percentage of tracks fitted with a ATP system in service | 100% | 59% |
| Percentage of main fixed signals and fixed advanced signals fitted with a ATP system in service | 100% | 48% |
| Percentage of train-kilometres run with operational ATP systems (estimate) | 97% | 2% |

### C.1.6.2 Number of level crossings (total, per line-kilometre and track kilometre) and by types of level crossing

| a) Active level crossings by type | Number | per km of line (275 km) | per km of track (619 km) |
|---|---|---|---|
| i) Automatic warning on the users side | 3 | 0.0109 | 0.0048 |
| ii) Automatic protection on the users side | 0 | 0.0000 | 0.0000 |
| iii) Automatic protection and warning on the users side | 83 | 0.3018 | 0.1341 |
| iv) Automatic protection and warning on the users side and protection on the rail side | 0 | 0.0000 | 0.0000 |
| v) Manual warning on the users side | 18 | 0.0655 | 0.0291 |
| vi) Manual protection on the users side | 2 | 0.0073 | 0.0032 |
| vii) Manual protection and warning on the users side | 1 | 0.0036 | 0.0016 |
| Total | 107 | 0.3891 | 0.1729 |

| b) Passive level crossings | Number | per km of line (275 km) | per km of track (619 km) |
|---|---|---|---|
| Total | 35 | 0.1273 | 0.0565 |

| c) Active and passive level crossings | Number | per km of line (275 km) | per km of line (619 km) |
|---|---|---|---|
| Total | 142 | 0.5164 | 0.2246 |

### C.1.7 Indicators regarding safety management

Internal audits carried out by the infrastructure manager and railway undertakings such as are defined in the documentation of the system of safety management. Total number of audits carried out and percentage of the audits required (and/or planned).

| Internal audits | CFL/IM | CFL/RU | CFL cargo | SNCF |
|---|---|---|---|---|
| Number | 87 | 89 | 141 | |
| Percentage of those planned carried out | | 79 % | | |

| Total number of audits | 317 |
|---|---|

## C.2. Definitions used in the annual report

The common safety indicators supplied and the definitions used in this report are as given in Appendix 1 and the Annex to Directive 2004/49/EC as amended by Directive 2009/149/EC of 27 November 2009.

## C.3. Abbreviations

| | |
|---|---|
| ACF | Luxembourg Railway Authority |
| AET | Administration for Technical Investigations |
| ANS | National Safety Authority |
| CFL/GI | CFL Infrastructure Manager |
| CFL/EF | CFL Railway undertaking |
| BEA-TT | Land Transport Accident Investigation Bureau (France) |
| EF | Railway Undertaking |
| ERA | European Railway Agency |
| ETCS | European Train Control System |
| IM | Infrastructure Manager |
| CSI | Common Safety Indicator |
| MDDI | Ministry of Sustainable Development and Infrastructure |
| MEMOR II+ | System to assist drivers, improvement of the crocodile system |
| Mémorial | The Official Journal of the Grand Duchy |
| MR | Rolling stock |
| PN | Level crossing |
| RGD | Grand Duchy Regulation |
| GRO | General Regulations for Technical Operation |
| RNE | RailNetEurope |
| TSI | Technical Specification for Interoperability |

## Appendix D: Important amendments to the legislation and the regulations

| | Legal reference | Date of entry into force | Reason for the introduction (state whether it is a new law or an amendment of the existing legislation) | Description |
|---|---|---|---|---|
| **General national legislation on the safety of the railways** | | | | |
| Legislation regarding the National Safety Authority. | The law of 22 July 2009 regarding railway safety | 01/08/2009 | New law<br>The object of this law is:<br>1. the transposition into national law of the Directive 2004/49/EC of the European Parliament and the Council of 29 April 2004 on safety on the Community's railways;<br>2. to create a regulatory framework in the field of railway safety;<br>3. to set up an ACF, and<br>4. to amend the modified law of 11 June 1999 regarding the access to the railway infrastructure and its use and the modified law of 29 June 2004 on public transport. | The law determines the requirements in safety matters applicable to the Luxembourg railway system, including the safe management of the infrastructure and the traffic, as well as the interaction between the railway undertakings and infrastructure manager.<br>The law also includes requirements regarding the certification of railway undertakings and the railway infrastructure manager, requirements regarding the qualification of the staff allocated to the safety tasks and the certification of the rolling stock. |
| Legislation concerning the certification of the infrastructure manager | Grand Duchy Regulation (RGD) of 21 September 2009 on the certification regarding safety of the railway infrastructure manager | 05/10/2010 | New (RGD)<br>This RGD fixes the procedure for the application of the law of 22 July 2009 regarding the security authorisation of the infrastructure manager. | The RGD contains the details of the conditions for obtaining and validating safety authorisations as well as the procedures for renewal, re-examination and withdrawal. |
| Legislation concerning certification of railway undertakings | Grand Duchy Regulation (RGD) of 21 September 2009 on the certification regarding safety of the railway undertakings | 05/10/2010 | New Grand Duchy regulation repealing the RGD of 24 October 2003 on the conditions of issue and validity of the safety certificates for railway undertakings. | The RGD contains the details of the conditions for obtaining and validating safety certificates as well as the procedures for renewal, re-examination and withdrawal. |

| | Legal reference | Date of entry into force | Reason for the introduction (state whether it is a new law or an amendment of the existing legislation) | Description |
|---|---|---|---|---|
| | | | This RGD fixes the procedure for the application of the law of 22 July 2009 regarding the safety certificates of the railway undertakings. | |
| Legislation concerning the notifies bodies, the assessors and the third parties charged with the recording, the checks, etc. | No new rule | | | |
| **National Rules for Railway Safety** | | | | |
| Rules regarding the objectives and methods of existing national safety | No new rule | | | |
| Rules regarding the requirements applicable to the management of the safety systems and the safety certification of the railway undertakings | The law of 22 July 2009 regarding railway safety | 01/08/2009 | New law<br>Transposition of the Railway Safety Directive 2004/49/EC into Luxembourg law | The law includes among other things some requirements regarding certification of railway undertakings. |
| | Grand Duchy Regulation (RGD) of 21 September 2009 on the certification regarding safety of the railway undertakings | 05/10/2010 | New Grand Duchy Regulation repealing the RGD of 24 October 2003 on the conditions of issue and validity of the safety certificates for railway undertakings.<br>This RGD fixes the procedure for the application of the law of 22 July 2009 regarding the safety certificates of the railway undertakings. | The RGD contains the details of the conditions for obtaining and validating safety certificates as well as the procedures for renewal, re-examination and withdrawal. |

| | Legal reference | Date of entry into force | Reason for the introduction (state whether it is a new law or an amendment of the existing legislation) | Description |
|---|---|---|---|---|
| Rules regarding the requirements for the authorisation of the introduction into service and the maintenance of new or substantially modified rolling stock which is not yet covered by a TSI. It is also appropriate to notify the rules applicable to the exchange of rolling stock between railway undertakings, the systems of registration and the requirements applicable to the test procedures. | General Regulations for Technical Operation (GRO) Part 01, 2009 edition - General paragraph 09. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 01, 1991 edition.<br>The new Part modifies or replaces certain existing operational procedures. | General regulation regarding the certificate to run. |
| | General Regulations for Technical Operation (GRO) Part 07, 2009 edition -Train formations para.03, para.06, para.10. Article 01-05, 08, para.15. Articles 01 and 18 | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 07, 1999 edition – Train formation.<br>The new Part modifies or replaces certain existing operational procedures. | Provisions regarding speed limits for rolling stock, the technical examination of hauled vehicles, the technical conditions applicable to hauled stock and the technical conditions applicable to wagons loaded with dangerous goods. |
| | General Regulations for Technical Operation (GRO) Part 08, 2009 edition - Braking para.04. Article 03,<br>para.05, and para.06. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 08, 1999 edition - Braking.<br>The new Part modifies or replaces certain existing operational procedures. | Regulations regarding the braking systems, the compressed air brake equipment, continuous and automatic and the inscriptions, the marks and the signs relative to the brake equipment.. |
| | General Regulations for Technical Operation (GRO) Part 09 issue 2009 - Driving and train crew para.03. Article 06. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 09, 1999 edition.<br>The new Part modifies or replaces certain existing operational procedures. | Regulations concerning the automatic warning device DVA |

| | Legal reference | Date of entry into force | Reason for the introduction (state whether it is a new law or an amendment of the existing legislation) | Description |
|---|---|---|---|---|
| | General Regulations for Technical Operation (GRO) Appendix I 2009 edition -Additional information and details of application regarding the provisions of the GRO Chapter 28. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) 2000 edition.<br>Adaptation resulting from the new provisions introduced by GRO 01, 02, 07, 08 and 09. | Characteristics of the tractive units permitted to run on the lines of the Luxembourg railway system. |
| Common rules for operating the railway network which are not yet covered by the TSIs, including the rules regarding the signalling system and traffic management | General Regulations for Technical Operation (GRO) Part 01, 2009 edition. General | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 01, 1991 edition.<br>The new Part modifies or replaces certain existing operational procedures. | Fundamental definitions for operating and general principles for train running. |
| | General Regulations for Technical Operation (GRO) Part 02, 2009 edition - Signals and markers. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 02, 1999 edition.<br>The new Part modifies or replaces certain existing operational procedures. | Signals and markers used on the Luxembourg railway system - description and significance. |
| | General Regulations for Technical Operation (GRO) Part 07, 2009 edition - Formation of trains. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 07 1999 edition.<br>The new Part modifies or replaces certain existing operational procedures. | Provisions regarding the formation of passenger trains and freight trains. Regulations for technical operation regarding the carriage of dangerous goods and exceptional loads. |

| | Legal reference | Date of entry into force | Reason for the introduction (state whether it is a new law or an amendment of the existing legislation) | Description |
|---|---|---|---|---|
| | General Regulations for Technical Operation (GRO) Part 08, 2009 edition - Braking. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 08, 1999 edition.<br>The new Part modifies or replaces certain existing operational procedures. | Fundamental ideas and definitions regarding braking, the braking of trains and rakes of vehicles being shunted and the stabling of trainsets left without a motive power unit. |
| | General Regulations for Technical Operation (GRO) Part 09, 2009 edition – Driving and accompanying trains. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 09, 1999 edition.<br>The new Part modifies or replaces certain existing operational procedures. | Regulations regarding the driving and accompanying of trains. |
| | General Regulations for Technical Operation (GRO) Appendix 1, 2009 edition - Additional information and details of application regarding the provisions of the GRO. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Appendix, 2000 edition.<br>Adaptation resulting from the new provisions introduced by GRO 01, 02, 07, 08, and 09. | The document contains additional information and details of application regarding the provisions of the General Regulations for Technical Operation (GRO). |
| | Special instruction regarding the operation of short dead end lines, 2009 edition. | 02/02/2009 | Cancel and replace the special instruction regarding the operation of short dead end lines 2001 edition.<br>Adaptation resulting from the new provisions introduced by GRO 01, 02, 07, 08 and 09. | Regulations regarding the operation of short dead end lines. |

| | Legal reference | Date of entry into force | Reason for the introduction (state whether it is a new law or an amendment of the existing legislation) | Description |
|---|---|---|---|---|
| Rules defining the requirements applicable to additional internal rules (statutes of the company) which must be prepared by the infrastructure managers and the railway undertakings | General Regulations for Technical Operation (GRO) Part 01, 2009 edition - General para.06. | | Cancel and replace the General Regulations for Technical Operation (GRO) Part 01, 1991 edition.<br>The new Part modifies or replaces certain existing operational procedures. | Regulations for the preparation of documents additional to the General Regulations for Technical Operation (GRO). |
| Rules concerning the requirements applicable to the staff who carry out critical safety tasks, including the selection criteria, the state of health, the professional training and the certification, if they are not yet covered by an TSI. | General Regulations for Technical Operation (GRO) Part 01, 2009 edition - General paras.07 and 21. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 01, 1991 edition.<br>The new Part modifies or replaces certain existing operational procedures. | Definitions and provisions regarding the qualities and aptitudes of technical operating staff. |
| | General Regulations for Technical Operation (GRO) Part 09, 2009 edition - Drivers and train crew para.03. | 02/02/2009 | Cancel and replace the General Regulations for Technical Operation (GRO) Part 09, 1999 edition.<br>The new Part modifies or replaces certain existing operational procedures. | General provisions regarding the aptitudes and the certification of the drivers and train crew and pilotmen. |
| Rules relating to the investigations into accidents and incidents | No new rule | | | |

## Appendix E: The changes in the certification and safety authorisation in figures

### E.1 Safety certificates issued in accordance with Directive 2001/14/EC

| | | |
|---|---|---|
| Number of certificates held in 2009 by railway undertakings that had a licence issued | by the GD of Luxembourg | 2 |
| | by another Member State | 2 |

### E.2 Safety certificates issued in accordance with the Directive 2004/49/EC

| | | New | Revised / modified | Renewed |
|---|---|---|---|---|
| E.2.1. Number of valid **Part A** certificates held in 2009 by railway undertakings registered | in the Grand Duchy of Luxembourg | 0 | 0 | 1 |
| | by another Member State | 0 | 0 | 0 |

| | | New | Revised / modified | Renewed |
|---|---|---|---|---|
| E.2.2. Number of valid **Part B** certificates held in 2009 by railway undertakings registered | in the Grand Duchy of Luxembourg | 0 | 0 | 1 |
| | by another Member State | 0 | 0 | 0 |

| | | | A | R | I |
|---|---|---|---|---|---|
| E.2.3. Number of applications for **Part A** certificates submitted in 2009 by registered railway undertakings | in the Grand Duchy of Luxembourg | New certificates | 0 | 0 | 0 |
| | | Certificates revised / amended | 0 | 0 | 0 |
| | | Certificates renewed | 1 | 0 | 0 |
| | in another Member State | New certificates | 0 | 0 | 0 |
| | | Certificates revised / amended | 0 | 0 | 0 |
| | | Certificates renewed | 0 | 0 | 0 |

| | | | A | R | I |
|---|---|---|---|---|---|
| E.2.4. Number of applications for **Part B** certificates submitted in 2009 by registered railway undertakings | in the Grand Duchy of Luxembourg | New certificates | 0 | 0 | 0 |
| | | Certificates revised / amended | 0 | 0 | 0 |
| | | Certificates renewed | 1 | 0 | 0 |
| | by another Member State | New certificates | 0 | 0 | 0 |
| | | Certificates revised / amended | 0 | 0 | 0 |
| | | Certificates renewed | 0 | 0 | 0 |

A = Application accepted, the certificate is already issued.
R = Application refused, no certificate has been issued.
I = The matter is still under consideration, no certificate has yet been issued.

E.2.5. List of the countries where the RUs applying for a Part B certificate in your Member State have already obtained their safety certificate Part A.

In 2009 no request of this type has been recorded.

## E.3. Safety authorisations issued in accordance with the Directive 2004/49/EC

| | New | Revised / amended | Renewed |
|---|---|---|---|
| E.3.1. Number of valid safety authorisations held in 2009 by infrastructure managers registered in the Grand Duchy of Luxembourg | 0 | 0 | 0 |

| | | A | R | I |
|---|---|---|---|---|
| E.3.2. Number of applications for safety authorisations submitted in 2009 by infrastructure managers registered in the Grand Duchy of Luxembourg | New authorisations | 0 | 0 | 0 |
| | Certificates revised / amended | 0 | 0 | 0 |
| | Authorisations renewed | 0 | 0 | 0 |

A = Application accepted, the authorisation is already issued.
R = Application refused, no authorisation has been issued.
I = The matter is still under consideration, no authorisation has yet been issued.

## E.4. Procedural aspects - Part A safety certificates

| | | New | Revised / modified | Renewed |
|---|---|---|---|---|
| Mean time between receipt of the application (after receipt of all the necessary information) and the final issue of a **Part A** safety certificate in 2009 for RUs holding a | licence issued by the Grand Duchy of Luxembourg | | | 80 working days |
| | licence issued by another member State | | | |

## E.5. Procedural aspects - Part B safety certificates

| | | New | Revised / amended | Renewed |
|---|---|---|---|---|
| Mean time between receipt of an application (after receipt of all the necessary information) and the final issue of a **Part B** safety certificate in 2009 for RUs holding a | licence issued by the Grand Duchy of Luxembourg | | | 80 working days |
| | licence issued by another member State | | | |

## E.6. Procedural aspects - Safety authorisations

| | | New | Revised / modified | Renewed |
|---|---|---|---|---|
| Mean time between receipt of a application (after receipt of all the necessary information) and the final issue of a safety authorisation in 2009 for the infrastructure managers | registered in the Grand Duchy of Luxembourg | | | |
| | registered in another member State | | | |