LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère du Développement durable
et des Infrastructures

Administration des chemins de fer

GRAND-DUCHY OF LUXEMBOURG

Luxembourg Railway Authority

Annual Safety Report 2013

Luxembourg Railway Authority

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Abbreviations

ACF	Luxembourg Railway Authority
AET	Administration for Technical Investigations
NSA	National Safety Authority
RSD	Railway Safety Directive
ECM	Entity in Charge of Maintenance
RU	Railway Undertaking
MS	Member State
ERAIL	European Railway Accident Information Links
ETCS	European Train Control System
IM	Infrastructure Manager
CSI	Common Safety Indicator
MSDI	Ministry of Sustainable Development and Infrastructures
CSM	Common Safety Method
DO	Designated Organisation (competent organisation in Luxembourg)
EO	Evaluation Organisation
NIO	Luxembourg National Investigation Organisation
NO	Notified Organisation
CSO	Common Safety Objective
LC	Level Crossing
MEMORII+	Luxembourg national automatic train protection system
NSR	Luxembourg National Safety Rule
NRV	Luxembourg National Reference Value

A. INTRODUCTION

1. Object and scope of the report, other addressees

This report covers the activities of **ACF** *(**A**dministration des **C**hemins de **F**er)* [Luxembourg Railway Authority] in its capacity as **N**ational **S**afety **A**uthority **(NSA)** during the year 2013.

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

a) progress made with railway safety, including an inventory of the Common Safety Indicators (CSIs) defined in Annex 1 of Directive 2004/49/EC,
b) important amendments made to the rules applicable to railway safety,
c) changes in certification and authorisation as far as safety is concerned,
d) the results of Infrastructure Manager (IM) and Railway Undertakings (RUs) monitoring, and the lessons learnt, and
e) the dispensations which have been granted pursuant to Article 20c (see Page 9 Article 20c(5).

In compliance with Article 5 of the amended law of 22 July 2009, ACF has submitted its report to the Ministry of Sustainable Development and Infrastructures on the execution of its missions and sends it to the European Railway Agency. The report can be consulted on its website www.railinfra.lu.

ACF also provides a hardcopy version intended for restricted distribution to the national players such as the Administration for Technical Investigations, the railway undertakings that hold a Luxembourg safety certificate, other administrations, companies and interested persons.

As the above mentioned law requires ACF to organise the allocation of the paths and the access charges, this report also provides a brief overview of the services provided by ACF in this area.

2. Likely significant changes at the organisation level impacting NSA.

A new unit has been set up in the Railways Interoperability and Safety Division that will be responsible for supervising the players in the rail sector. This unit applies the obligations in the area of supervision stipulated in the various European and Luxembourg legal texts, more particularly the Commission's regulation (EU) No 1007/2012 of 16 November 2012 concerning a common safety method introduced regarding the supervision exercised by the national safety authorities after a safety certificate or approval has been issued. These regulations provide for the development and management of a strategy, supervision plans and their practical application by carrying out audits, checks and inspections on the Luxembourg railways sector.

B. GENERAL PERFORMANCE REGARDING SAFETY AND STRATEGY

B.1 Main conclusions for the reference year

Three serious accidents occurred on the national network in 2013. This led to the average for the years 2009-2013 and certain National Reference Values being exceeded. The NRVs are set by Decision of the Commission 2012/226/EU of 23 April 2012.

However, given:

- that the Common Safety Objectives (CSO) set by Decision of the Commission 2012/226/EU of 23 April 2012 were largely met,
- the size of the network,
- the extremely small number of these accidents,
- the fact that three people illicitly crossed railway tracks, two of whom at a Level Crossing (LC) and one in a station,
- that the investigations carried out by the IM with the RU concerned have demonstrated that their responsibility was not in any way engaged,
- that the investigation completed in 2014 by the Administration for Technical Investigations (AET) into one of the accidents that occurred on an LC came to the same conclusion,

we will consider, awaiting future developments, that this high value with respect to the average comes within the limits of tolerable fluctuations (the detail can be consulted in Chapter C and in Annex A).

For all the precursors a slight fall has been recorded, whereas the number of suicides totalled 4 people which represents a one-unit improvement with respect to the previous year.

The indicators relative to the infrastructure equipment (number of LCs and of MEMORII+ and ETCS automatic train protection systems) remained stable in 2013.

So, overall railway safety remained at a high level. Despite everything, we must remain prudent because of the small size of the network (275 km of lines) on which very few serious accidents occurred, which has already made itself felt for 2013.

Both the Luxembourg RUs (CFL and CFL cargo) have A and B certificates. Two other RUs from other Member States (SNCF and SNCB Logistics) have a B certificate.

Indeed, in 2013 the Luxembourg State issued a part B safety certificate to the SNCB-Logistics company in compliance with directive 2004/49/EC.

A safety approval valid for 5 years starting from 5 May 2013 was issued to the Infrastructure Manager by the Ministry for Sustainable Development and

Infrastructures (MSDI) on 3 May 2013. In order to examine the conformity of the request ACF applied the Commission's regulation (EU) No 1169/2010 of 10 December 2010 relative to a common safety method for assessing compliance with the requirements for obtaining a railway safety approval.

With the exception of the Luxembourg-Kleinbettingen line, the introduction of the infrastructure side of the ETCS level 1 system has been completed.

B.2 National safety strategy, programmes and initiatives

ACF's strategy is based on three pillars:

- Performing a detailed assessment in line with the legal framework for requesting safety certificates and approvals, authorisations to put rolling stock and infrastructure subsystems into service. The opinions submitted by ACF to the supervising ministry that is in charge of establishing safety approvals and certificates are accompanied by improvement recommendations to be implemented by the entity concerned within a well-defined time.
- Performing audits, inspections and checks to meet the obligations regarding supervision stipulated by the various legal texts. A unit within the ACF has been set up but owing to a lack of human resources these activities are still extremely limited.
- Being in permanent contact with the players in the Luxembourg railway sector, the national and European institutions and the other safety authorities, particularly those in our neighbouring countries.

Given the high level of safety on the Luxembourg network, besides the supervision plans, ACF has thus far not drawn up an actual safety programme or plan.

However, it must be mentioned that at the level of the Ministry of Sustainable Development and of the Infrastructure Manager, certain projects and programmes are currently being accomplished, along with awareness-raising campaigns that are directly linked to safety, such as:

- Replacement on the whole railway network of MEMOR II+ with ETCS, which has a much higher performance regarding safety,
- A programme to gradually remove all the LCs (according to the IM, two LCs will be done away with in 2014),
- Concerning the LCs, regular campaigns (including an annual campaign) are conducted to inform the users of the dangers linked to crossing a track where this is not authorised.

B.3 Assessment of the previous year

As already mentioned in point B1, the level of safety remains high. The safety performance details are summarised in Chapter C and Annex A.

The results of the supervision operations carried out by ACF were highly satisfactory. Nevertheless when the applications for safety approvals and certificates are assessed some improvement recommendations with implementation deadlines were made to the entities concerned.

Ultimately, the RU and the IM meet all the criteria stipulated in the respective legal texts. During the assessment of the B certificate and of the approval, ACF found some points where reviews or improvements to the procedures and/or documents are required. These points have been notified to the applicants in the form of major recommendations with deadlines for ensuring compliance.

B.4 Areas of interest for next year

The future areas of interest are:

- increasing the number of supervision operations,
- strengthening our cooperation with other NSAs, and
- finalising the processes and procedures applied by ACF to accomplish its tasks and meet its obligations. This finalisation will be completed with the introduction of the ISO 9001 quality management system.

C. SAFETY PERFORMANCE TRENDS

C.1 Detailed analysis of the latest trends recorded

Main Indicators		2013	2012	Average 09-13	Per NRV	Per CSO
Total number of people seriously injured or killed (excluding suicides)	Number	3	0	1.4	1.89	23.40
	Number / million train-km	0.33	0	0.16	0.21	2.59
Passengers seriously injured or killed	Number	0	0	0	0.21	1.40
	Number / million passenger train-km	0	0	0	0.02	0.17
Personnel including subcontractors seriously injured or killed	Number	0	0	0.2	0.11	0.70
	Number / million train-km	0	0	0.1	0.01	0.08
People seriously injured or killed at the level crossings including accidents involving pedestrians	Number	2	0	0.4	0.87	6.40
	Number / million train-km	0.22	0	0.05	0.10	0.71
Trespassers on railway property injured or killed	Number	1	0	0.8	0.72	18.5
	Number / million train-km	0.11	0	0.09	0.08	2.05
Suicides	Number	4	5	4.6		
	Number / million train-km	0.44	0.57	0.53		
Broken rails	Number	3	3	4.2		
	Number / million train-km	0.33	0.33	0.50		
Track buckling	Number	1	1	2.2		
	Number / million train-km	0.11	0.11	0.26		
Signalling failures affecting safety	Number	1	0	1.4		
	Number / million train-km	0.11	0	0.17		
Signals passed at danger without authorisation	Number	4	5	4.8		
	Number / million train-km	0.44	0.57	0.57		
Percentage of train-km travelled with an automatic train protection system operational	MEMOR II+	85%	86%	97%[1)]		
	ETCS*	15%	14%	2%[2)]		

[1) and 2)] *values recorded in 2009*

** The number of vehicles fitted with ETCS stagnated in 2013, this was because:*

- *The Luxembourg RUs' traffic for a major part consists of interoperable traffic and certain infrastructure managers from bordering railway networks have difficulties accepting vehicles fitted with ETCS.*
- *Up until now ACF has still not received any applications for authorisation for entry into service from the IM. Therefore it cannot establish authorisations for entry into service for rolling stock. Only vehicles operated by the national RUs and the IM are authorised to run in the framework of a commercial trial with the ETCS activated. The fact that it is not possible to initiate authorisation procedures for rolling stock fitted with ETCS with the foreign RUs simply because the ETCS part on the infrastructure side cannot be authorised as there are no dossiers is most regrettable, even distressing for ACF. There is no need to add that the deadline for bringing the ETCS into service for the Luxembourg part of Corridor C is set at 31/12/2015 by the Decision of the Commission 2012/88/EU of 25 January 2012 relative to the interoperability technical specification concerning the trans-European railways' "control, command and signalling" subsystems.*

People seriously injured or killed (including personnel working for the players in the railways sector and their subcontractors)

A total of three serious accidents were recorded: one was linked to the presence of a person trespassing on railway property and two accidents occurred on level crossings. The latter were the tragic consequence of pedestrians crossing the track illegally and this explains why this indicator greatly exceeds (fourfold) the average values recorded for 2009 to 2013. This also caused a significant increase (twofold) in the total number of accidents in which people were killed or seriously injured.

The scale of these increases is due to the size of the network and the very limited number of such accidents recorded in the past. The European statistics for 2009 to 2012 count around 330 deaths on LCs every year, which represents 25% of the total number of fatal accidents, not counting suicides. At the European level no improvement has been noted for the period under consideration.

The fact that during the 2009 to 2012 period there were only four victims in the Grand-Duchy of Luxembourg, none of whom were on LCs, and awaiting future years, we will consider to begin with that this poor result with respect to the average values is exceptional and linked to the size of the network and the very limited number of fatal accidents (3 deaths in 2009 and 1 death in 2011).

In view of the initiatives taken by the CFL in the area of preventive campaigns, and of the fact that the third fatality was due to an unauthorised crossing of the tracks, we consider it would be difficult to ask CFL to take additional measures. Nevertheless, the annual campaigns must be continued rigorously and it would be appropriate to review the current concept and modify it if necessary. For instance, the installation of large billboards close to the LCs with posters, or even shock photographs, similarly to what is done for road safety, might be worthwhile for better showing the users the dramatic consequences of illicitly crossing the tracks.

Suicides

Comparable with the victims at LCs, suicides are also a scourge faced by railways everywhere in Europe. According to Eurostat they represent 70% of fatalities in the rail sector (2,973 suicides for 2012 with a 3% annual growth trend).

Despite a downwards trend in the Grand-Duchy, the number peaked in 2011 with no less than 7, and then went down to 5 in 2012, we will consider the 4 suicides in 2013 as being close to the average which stands at 5.75 a year.

Passengers and personnel, including subcontractors

There have been no serious accidents involving passengers since 2009.

Regarding the personnel employed by the sector and the subcontractors there has been only one accidental death.

Accident precursors

The number rail breakages, cases of buckling and signalling failures affecting safety remains stable.

It must also be noted that since 2009 no axle or wheel breakages have been reported.

Infrastructure characteristics		2013	2012	2009
Tracks fitted with the MEMORII+ automatic train protection system	percentage	100%	100%	100%
Main fixed signals and advanced fixed signals fitted with MEMORII+	percentage	100%	100%	100%
Lines fitted with ETCS level 1	percentage	94%	94%	59%
Main fixed signals and advanced fixed signals fitted with ETCS level 1	percentage	93%	93%	48%
Level crossings with active equipment	number	106	106	107
	Number / track-km	0.17	0.17	0.17
Level crossings with passive equipment	number	31	31	35
	Number / track-km	0.05	0.05	0.06

Insofar as the IM has decided to wait for the new command posts to be installed on the Luxembourg-Kleinbettingen line (the only one still to be equipped with ETCS), we have been informed that this line will be equipped with ETCS by the end of 2014. This will leave just one year for meeting the deadline set by the Decision of the Commission 2012/88/EU of 25 January 2012 (TSI for the "Control, Command and Signalling" subsystems) in which the IM must draw up the complete dossier and meet the requirements for the authorisation for entry into service and ACF must deliver its decision.

Since 2009 the number of LCs has been cut by 5 units. For 2014 the IM has notified us in its report that 2 additional LCs will be done away with.

C.2 Results of safety-related recommendations

Zoufftgen rail accident report (2009)

The Administration for Technical Investigations (AET) was created by the law of 19 May 2008. Together with the BEA-TT France (Accident Investigation Bureau – Terrestrial Transport), it published its first safety recommendations in 2009 in the framework of the technical report on the Zoufftgen railway accident, which occurred in 2006 and which led to the death of six people.

Following this accident, 21 recommendations were made, 15 of which have been implemented or are in the process of being implemented, 5 were rejected and 1 did not concern the Luxembourg railway sector. All of these recommendations were included in the report for 2009.

Below you will find a report on the implementation of recommendation R8:

Recommendation R8 (CFL, SNCF, RFF): examine the feasibility of bringing SAAT (SNCF Automatic Train Announcement System) as far as Bettembourg, displaying the first train announced on the OCP (Optical Control Panel).

The automatic train announcement systems such as the CFL's ZNL 800 or SNCF's SAAT are simply operating aids and are never involved in railway traffic safety. They can therefore only contribute indirectly to improving safety.

The CFL and SNCF have decided to develop an interconnection interface between the ZNL 800 and SAAT systems, and it is in the test phase between Longwy (SNCF) and Rodange (CFL).

Entry into service of the CFL's ZNL 800 and SNCF's SAAT systems interconnection installation between Bettembourg and Thionville is planned for the end of 2014.

Industrial accident at Differdange in 2009

In 2012, in its final report on the industrial accident of 3 February 2009 on the former industrial network that is now part of the National Rail Network, the AET made three recommendations. Only one has not yet been closed (Extracts from the AET's technical report):

R3: Ensure that in the case of the remote control box being sharply tilted the rapid braking activation time must be configured in such a way as to trigger emergency braking as quickly as possible after the box is tilted.

Only one RU uses the remote control on the national rail network. Regarding the type of remote control used in the case of this accident, the emergency braking activation time is configurable between 3 and 5 seconds (values given by the manufacturer and not modifiable by the user). This function avoids triggering braking when the shunting driver has to bend down to enter or leave the Berne space between two vehicles. The RU in question decided to set the delay at 4 seconds making it possible to:

- guarantee emergency braking within a safe length of time on the one hand, and
- avoid untimely triggering owing to a delay that is too short during coupling operations on the other hand, as that would expose the personnel to other safety hazards.

Regarding the other remote controls used on the national railway network (the values vary between 2.2 and 5 seconds), a study is currently being carried out on the standardisation of the response time.

C.3 Measures taken unrelated to the safety recommendations

Safety measures taken following accidents/accident precursors

Accidents/precursors behind the measures taken			Safety measures taken
Date	**Place**	**Description of the event**	
29/01/2013	Troisvierges	Further to a hydraulic failure, the arm of a mini-digger entered the gauge of track 901	• The incident was presented at the time of the safety refresher courses. • The safety officer had been informed of the works and of the means implemented to allow him to choose or accept the safety measures to be applied.
19/03/2013	Bettembourg	SMA located in a non-blocked section of track	Investigation meeting with the people concerned to: • elucidate the sequence of events and the problems encountered during the preparation of the works, • recall the importance of checking the agreement between the applicable documents and the needs of the worksite before starting the works.
19/04/2013	Bettembourg	An undeclared subcontractor's lorry working close to track 235 entered the free passage gauge.	•Letter sent to the company that won the tender for the works to prohibit work being carried out by undeclared subcontractors that have not received training on railway hazards.
18/06/2013	Esch-sur-Alzette	Condition of platform 002, edges dislocated	• Emergency repair of the edge. • Inspection of the site with a view to carrying out the necessary works in order to prevent any future incident of this type.
23/04/2013	Kleinbettingen	Trackmobile 1032 derailment at derailing stop Sd III/IV	• Reminder to the driver of the trackmobile on compliance with the communication methodology described in service memo IS 99.
20/06/2013	Luxembourg	Passing of SFVb 253II by Robel 704 inspection trolley	• Immediate relieving of the driver. • Refresher course with the Training Dept. • Check-up by the Workplace Health Department's Psychological Unit.
10/07/2013	Bettembourg – Esch/Alzette	At the time of an urgent tree-pruning operation, branches fell on the catenary causing a power cutout and placing train 6932 in distress.	• Analysis of the incident • Scheduling of pruning on the embankments between Bt and Es next winter. • Accomplishment of works with blocking of the track adjacent to the works and cutting out of the catenary. • IM debriefing to improve the quality of the information provided to the passengers blocked in trains and to have a replacement service put in place and have trains in distress disengaged.

Accidents/precursors behind the measures taken			Safety measures taken
Date	**Place**	**Description of the event**	
27/07/2013	Esch/Alzette – Belval/Usines	Wooden worksite fence installed in the framework of the installation of the anti-noise wall fell on the Bu-Es track	• On-site analysis with the design offices and companies concerned. • Adaptation of the fence attachment. • Given that it was found that the fence cannot fulfil the function of guard rail, alighting from the trains on the worksite side has been prohibited by inclusion in the RAL table.
03/10/2013	Wasserbillig-Secteur Mertert/Port	Untimely entry into a basic section subject to protection	• Relieving of the staff member from his functions as traffic controller • Retraining before resuming his functions. • Specific instruction and qualification regarding the dangers relative to the protection of the contact lines in the case of loss of power. • Awareness-raising for all the staff regarding the circumstances of this incident and the conclusions of the incident report.
23/10/2013	Bifurcation de Brucherbierg	Collision between trm. 26501 and a road vehicle	• Contact with the Civil Engineering Administration in order to make the bend in CR 166 Schifflange-Kayl secure.
28/10/2013	Ligne 6f Bettembourg – Esch/Alzette	Car stopped inappropriately on LC 91	• Train stopped by a member of the safety team. • Car removed by the people on the spot after the train had stopped.
22/04/2013 and 16/08/2013 29/08/2013 and 16/12/2013	Luxembourg Luxembourg Luxembourg Luxembourg	Passing of signal Passing of signal Passing of signal Passing of signal	• Suspension of both drivers. Owing to the special circumstances (imminent retirement) the driver of the partner RU's train has not been re-approved to drive on the Luxembourg rail network. • Suspension of the driver. Medical aptitude checkup, psychological assessment, check of professional knowledge by an approved instructor, practical test on the driving simulator. • After re-approval: 1st work session accompanied by an approved instructor, extra supervision for 1 year. • Further to 2nd incident on the Fixed Main Signal in question (1st = 16/08/2003) introduction of additional measures, awareness poster for train drivers Cleaning of the lenses and adjustment of the panel supporting the Fixed Main Signal by the IM Lowering of the ETCS 'release speed' from 40 km/h to 15 km/h on the Fixed Main Signal in question and on other Fixed Main Signals that have a shortened overstopping rail, due to geographical circumstances

Safety measures taken for other reasons

Description of the cause	Description of the area concerned	Safety measures taken
Feedback from RU	It has been found that the number of MEMOR II+ incidents is higher with SNCF drivers than with the drivers at CFL and the other partner RUs.	• A reminder of the provisions for driving with MEMOR II+ according to Instruction № 76 TM / EF CFL will be given in the framework of continuous training for SNCF drivers.
RU preventive measure	Risk of untimely opening of an access door in the event of unscheduled stopping along the line.	• Installation of an additional warning sign inside the access doors indicating that it is prohibited to alight without the prior authorisation of CFL personnel and transmission of a pre-recorded message in the case of unscheduled stops.
Feedback from RU	Poor visibility of certain signals owing to overgrowth.	• Information submitted to IM case by case with a view to pruning.
Feedback from IM	Non-observation of the regulatory instructions when guarding a level crossing.	• Disciplinary measure against the staff member concerned. • Example chosen to be examined during the refresher courses on LC guarding.
Feedback from IM	Untimely passing of an Fixed Main Signal at the release speed of 40km/h.	• Modification of the release speed for the signal in question. • Examining possibility of redefining the release speed for all the signals in the Luxembourg network.
Feedback from IM	A rail-road mechanical digger touched a powered tertiary network contact wire.	• Note drawn up recalling the power cutout procedure.

D. SUPERVISION

D.1 Strategy and plan(s)

Pursuant to regulation (EU) No 1007/2012 of the Commission of 16 November 2012 concerning a common safety method to be used for the supervision exercised by the national safety authorities after a safety certificate or a safety approval has been issued, the development of a supervision strategy and of a management procedure covering, among other things, the organisation and accomplishment of supervision operations has been initiated and will be completed in 2014.

In the first phase, priority has been given over to train driving (9 prohibited passings of signals in 2011) and to the rolling stock used by the IM and the RUs because, according to our experience, that is where the most serious risks lie. Naturally the IM's control centres could be another source of risks especially in the case of degraded situations or traffic disruptions. As at present we do not have any experts in this area, the means available for conducting supervision operations are extremely limited.

Other sources of information and the main contributions used to initiate supervision operations have been taken from the above-mentioned regulations. The supervision plans will be drawn up in compliance with said regulations for the forthcoming years.

D.2 Human Resources

The number of staff members available for supervision missions remains critical. At the present time this unit does not have anyone who holds this position, and the activities are shared between several staff members from other units of the Interoperability and Safety Division.

A key goal is to recruit a full-time staff member to deal with updating the strategy, supervision plans, organisation of the supervision operations and to serve as the main auditor. The hiring of a staff member with a good knowledge of traffic operations and management is, in this respect, necessary if we are to ensure satisfactory accomplishment of the missions in this area.

In 2013, ACF devoted around 180 hours to monitoring-related missions.

D.3 Skills

The supervision operations are carried out by an audit team, consisting of a team leader and technical experts. When there is only one auditor, he/she fulfils all the applicable functions, but this is not the ideal solution.

The team leader is appointed from among the qualified ACF auditors in compliance with the requirements of the EN ISO 19011:2011 standard (certifications issued in 2014).

ACF ensures that everyone in the audit team has the skills required for carrying out audits or in the area being audited, or both.

The staff member in charge of performing the audit ensures that each auditor and the audit team leaders improve their skills continuously. As may be required, he/she may propose continuous training in order to maintain and improve the auditors' know-how.

D.4 Decision-making

During the supervision operation, each element audited is subject to an assessment by ACF. The remarks made are classified in four levels of compliance:

Conclusion	Opinion on compliance	Explanation
A	Basis for a qualified opinion	Blocking non-compliance preventing the safety certificate, approval, authorisation for entry into service, or the train driver's license from being maintained. Blocking point that does not meet the legal and/or regulatory requirements in a satisfactory way.
B	Major recommendation	Non-blocking point that must be made conform within a given time.
C	Minor recommendation	Non-blocking point that could be improved within a given time.
D	No remarks	Conform. Point validated without any objections or recommendations.

The non-conformities are analysed with the representative of the entity being supervised, who can then provide additional information or suggest immediate measures that could, in a wider context, make it possible to reclassify the remark in a different category.

If the deviation cannot be eliminated, the non-conformity is then formalised on a non-conformity sheet:

- In the case of blocking points, ACF demands immediate measures from the supervised entity to ensure that dangerous situations do not occur again or are no longer repeated. ACF may exceptionally allow a period of 10 working days at the most in which to eliminate the deviation. If ACF does not receive proof of corrective measures having been taken within this deadline, it will initiate procedures that may lead to the suspension of the safety certificate or approval.
- For a non-blocking point, ACF allocates a time in which it must be corrected. If ACF does not receive proof of corrective measures having been taken within this deadline it can initiate procedures that may lead to the suspension of the safety certificate or approval

Non-conformities classified A, B or C and those on the non-conformity sheets are appended to the report on the supervision operation, and must always meet the following three criteria:

- Be objective and justified by non-compliance with a regulatory baseline requirement or with a provision included in the RU or IM's Safety Management System.
- Be based on facts and in no event on presumptions.
- Be explained in the presence of the RU or IM.

The non-conformity sheet is issued to the representative of the supervised entity at the end of the supervision activity. It is signed by the staff who carried out the supervision operation and by the representative of the supervised entity.

From that moment, the RUs or the IM must initiate the corrective actions (action plans) to resolve points A, B or C. At the request of the RUs or of the IM the ACF auditors determine whether the corrective actions they propose to implement are acceptable.

ACF determines to what extent an RU or IM has drawn up and implemented one or more action plans that are suitable for correcting the non-conformities within the deadlines set by ACF.

The non-conformity sheets are completed by action plans by the Undertaking and returned to ACF. There are several types of corrective actions:

- Corrective action implemented during the supervision operation.
- Corrective action that may be covered by documentary proof from the RU or IM. In this case the non-conformity is closed by ACF.
- Corrective action whose implementation must be observed on the spot. The additional supervision operation is proposed to the RU or IM. The steps taken to resolve the deviations are verified in the field by the person in charge of the supervision operation before he/she closes the non-conformity.

The corrective action plan must be implemented by the RU or IM within a time set by ACF that will run from the supervision operation closing meeting. If this deadline is not met, ACF will initiate procedures that may lead to the suspension of the safety certificate or approval.

The report must provide the following information in particular:

- Dates
- Auditors
- Scope of the supervision operation
- People audited
- Processes audited
- Strong points and non-conformities

D.5 Coordination and cooperation

Starting in 2014, the first contacts will be made with EPSF (FR NSA) and ISSCF (BE NSA). The idea is to arrive at a tripartite contract on coordination and cooperation to avoid having a

multitude of agreements. We prefer to initiate the work with our French-speaking neighbours, and once an agreement and in particular its contents reach a more concrete stage, negotiations will be initiated with EBA (DE NSA).

D.6 Conclusion drawn from the measures taken

The action plans submitted to us following supervision operations contained measures for achieving compliance with our recommendations. According to the indications given by the entities concerned, they have already been or will be introduced within the deadlines.

E. CERTIFICATION AND AUTHORISATION

E.1 Guidance

In the framework of obtaining ISO 9001 certification, ACF has drawn up processes that will be finalised in 2014. They contain the details relative to issuing and publishing certificates and authorisations. Updating of the processes will be guaranteed by a general revision process in the quality manual.

E.2 Contacts with other NSAs

Contacts with other NSAs are rare in the area of certificates, for the following reasons:

- very small number of Luxembourg certificates (2A+2B issued to the Grand-Duchy's RUs CFL and CFL cargo, and 2B issued to the two foreign RUs SCNF and SNCB Logistics),
- very small number of foreign B certificates held by the Luxembourg RUs (1 B for the CFLs + 2 for CFL cargo),
- applicants who, in the past, have shown significant expertise in the area of rail transport,
- correct application by the neighbouring NSAs and by ourselves of the legal provisions relative to the recognition of A certificates.

E.3 Procedural issues

The very strict link between the period of validity of the B certificate and that of the A certificate, and the fact that diverging limit dates often require renewals – which in most cases serve no real purpose – of B certificates that are still valid. The legislation should leave the NSAs a greater degree of flexibility on this subject. The RU that has renewed its A certificate would send a copy of the new A certificate, along with a report on the modifications made to it, to the NSA that established the B certificate. It would then be up to the latter to determine whether it is necessary to renew the B certificate or not.

E.4 Response

The certification process put in place by ACF leaves the RUs the possibility of submitting their differences of opinion regarding the results of the assessment. It is then up to ACF to analyse the arguments put forward by the RU and to take a decision on whether to review or maintain the assessment.

In practice any differences of opinion are settled at the time of meetings, exchanges of correspondence or emails with the RU concerned. On the basis of well-founded explanations and/or additional documents ACF often finds itself in a position where it can reclassify the non-conformity in another category.

The Grand-Duchy's regulations regarding certification give the applicant the possibility of addressing the Administrative Court.

F. CHANGES TO THE LAW

F.1 Rail Safety Directive

1. The applicable legislation transposing the safety directive

The basic directive 2004/49 EC has been transposed to the Grand-Duchy of Luxembourg by the following legal texts:

Law of 30 April 2008 on the creation of the Administration for Technical Investigations
Publication in the Official Journal - Mémorial A No 65 of 19/05/2008

Grand-Duchy regulation of 7 November 2008 on the additional specifications relative to accidents and incidents in the railway sector.
Publication in the Official Journal - Mémorial A No 172 of 28/11/2008

Modified law of 22 July 2009 concerning Community railway safety (Railway Safety Directive)
Publication in the Official Journal - Mémorial A No 169 of 27/07/2009
and modified by the law of 14 December 2011 – consolidated version published in the Official Journal - Mémorial A No 273 of 27 December 2011 (see post)

Grand-Duchy regulation of 21 September 2009 on certification in the area of safety for railway undertakings.
Publication in the Official Journal - Mémorial A No 273 of 05/10/2009

Grand-Duchy regulation of 21 September 2009 on certification in the area of safety for the railway infrastructure manager.
Publication in the Official Journal - Mémorial A No 273 of 05/10/2009

Grand-Duchy regulation of 1 June 2010 relative to railway system interoperability:

- Modifying the Grand-Duchy regulation of 21 September 2009 relative to certification in the area safety for railway undertakings (Art. 36).
- Modifying the Grand-Duchy regulation of 21 September 2009 relative to certification in the area safety for the railway infrastructure manager (Art. 37).

Publication in the Official Journal - Mémorial A No 91 of 14 June 2010

2. Situation regarding the transposition of the amendments made to the safety directive

Directive 2008/57/EC

As it was only possible to complete transposition of Directive 2004/49/EC on 27/07/2009 (date of publication in the Official Journal - Mémorial A No 269 of the law of 22 July 2009 on railway safety), this took into account Article 40 of the interoperability directive, repealing Article 14 of Directive 2004/49/EC.

Directive 2008/110/EC

Law of 14 December 2011 on the transposition of the European Parliament and the Council's directive 2008/110/EC of 16 December 2008 modifying directive 2004/49/EC concerning the safety of Community railways.
Publication in the Official Journal - Mémorial A No 273 of 27/12/2011

The Commission's Directive 2009/149/EC

This directive modifies the Annex and its Appendix concerning the common safety indicators and the common methods for calculating the cost of accidents. As Luxembourg's transposition of the basic text refers to the Annexes of the actual directive, without including them textually, these modifications are automatically applicable in Luxembourg once Directive 2009/149/EC comes into force.

F.2 Important changes to the law and regulations

The Grand-Duchy regulation of 8 November 2013 modifying the Grand-Duchy regulation of 16 August 2010 (corrected in the Official Journal - Mémorial A No 7 of 16/1/14) whose purpose was to:

a) transpose into national law Directive 2007/59/EC of the European Parliament and of the Council of 23 October 2007 relative to the certification of train drivers driving locomotives and trains on the Community railway system;

b) create a regulatory framework relative to the certification of train drivers driving locomotives and trains on the Luxembourg railway network.

G. APPLICATION OF THE CSM IN RELATION TO RISK EVALUATION AND ASSESSMENT

G.1 Experience of the NSA

In view of the growth in the number of times this is applied by the Luxembourg railway players (1 only in 2011, then 11 in 2012, and no fewer than 26 for 2013) we can conclude that the Common Safety Method relative to risk evaluation and assessment has now become an accepted and useful tool for the IM and the RUs that hold Luxembourg safety certificates.

There is a problem at the level of the independence of the evaluation organisations in the sense that on the one hand there are only a very few competent organisations, above all at the level of infrastructure projects, and on the other hand the Luxembourg IM and RUs are of a small size with a very limited number of experts in each area, and they are therefore having difficulties at the organisational level in order to guarantee the independence of the staff performing the assessment that must be carried out when significant changes are made.

G.2 Stakeholders' reactions

The number of times regulation EC No 352/2009 is applied by the Commission increased considerably in 2013 as shown in the table below:

	Type of modification	2009	2010	2011	2012	2013
Number of applications	Vehicles and Structural Systems	N/A	0	1	3	11*
	Operational changes and Organisational changes	N/A			8	15
	Total	N/A	0	1	11	26*
Number of applications considered significant	Vehicles and Structural Systems	N/A	0	0	1	3
	Operational changes and Organisational changes	N/A	0	0	0	0
	Total	N/A	0	0	1	3

*The number recorded contains:

- one application that began in 2012 and ended in the past year, and
- one application that has just been initiated in 2013 and is currently being assessed

G.3 Revision of the NSRs for taking into account the EC regulation concerning CSM relative to risk evaluation and assessment

A process for reviewing the National Safety Rules is in progress and will take this EC regulation into account. Among other things, this will have serious repercussions at the level of the General Regulations on Technical Operations (GRTO) established by the IM. Some rules will no longer be included in the next edition of the Regulatory Manuals. These will now be drawn up under the responsibility of the RUs. The IM will only set the operating conditions to be observed, and the rules will have to be developed by the RUs, while respecting the legal framework and the regulatory framework laid down by the IM.

The rules listed by the IM that will no longer be included in the actual GRTO will nevertheless be grouped together in another document. This will allow the RUs to choose freely between using these rules and developing their own on the basis of the CSM relative to risk evaluation and assessment. The main goal of applying the CSM will be to provide proof that the new rules developed guarantee at least the current level of safety.

H. EXEMPTIONS CONCERNING THE ECM CERTIFICATION SYSTEM

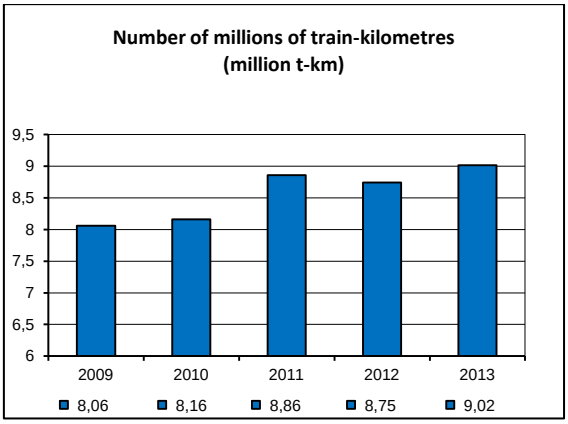
No exemptions have been granted concerning the certification of the Entities in Charge of Maintenance (ECM) of goods wagons.

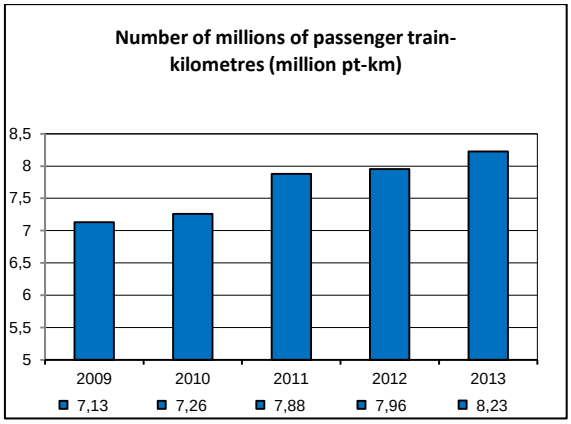
ANNEX A

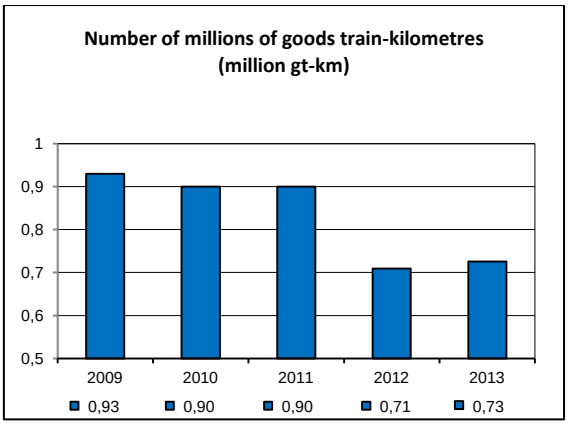
COMMON SAFETY INDICATORS

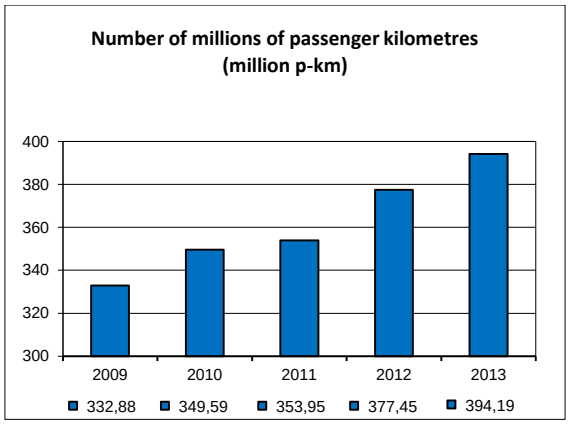
A.1 ISC reference data

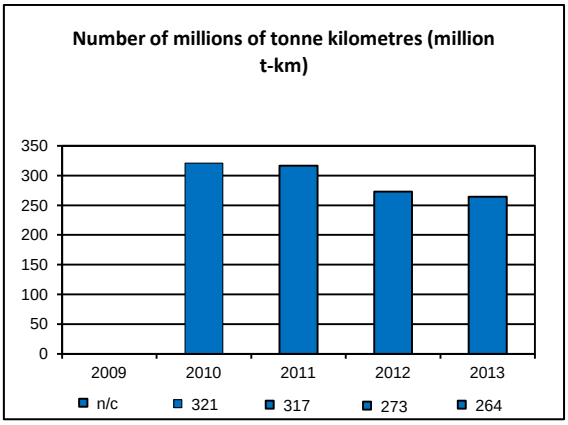
2013 reference data	
Number of millions of train-kilometres (million t-km)	9.02
Number of millions of passenger train-kilometres (million pt-km)	8.23
Number of millions of goods train-kilometres (million gt-km)	0.73
Number of millions of other train-kilometres (million ot-km)	0.07
Number of millions of passenger kilometres (million p-km)	394.19
Number of millions of tonne kilometres (million t-km)	264.348











* For the year 2009, the number of tonne kilometers was not notified to ACF.

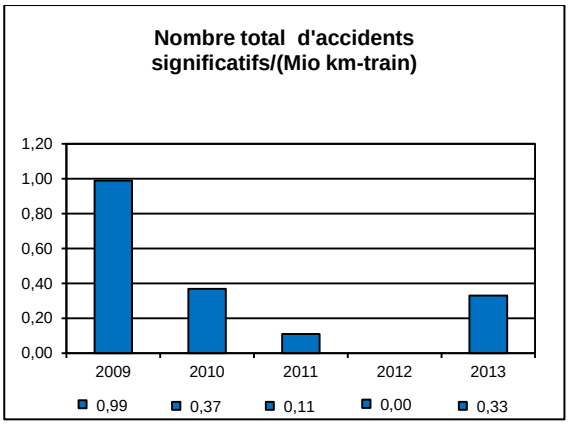
Legend

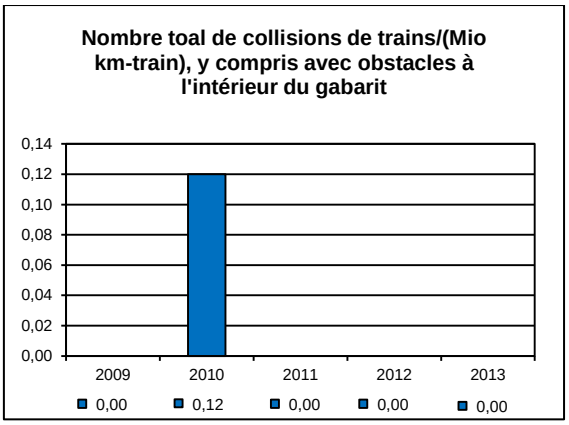
Nombre de millions kilomètre train (million km-t)	Number of millions of train-kilometres (million t-km)
Nombre de millions kilomètre-train voyageurs (millions km-tv)	Number of millions of passenger train-kilometres (million pt-km)
Nombre de millions kilomètre-train marchandises (millions km-tm)	Number of millions of goods train-kilometres (million gt-km)
Nombre de millions de passagers kilomètre (millions p-km)	Number of millions of passenger kilometres (million p-km)
Nombre de millions de tonnes kilomètres (million t-km)	Number of millions of tonne kilometres (million t-km)

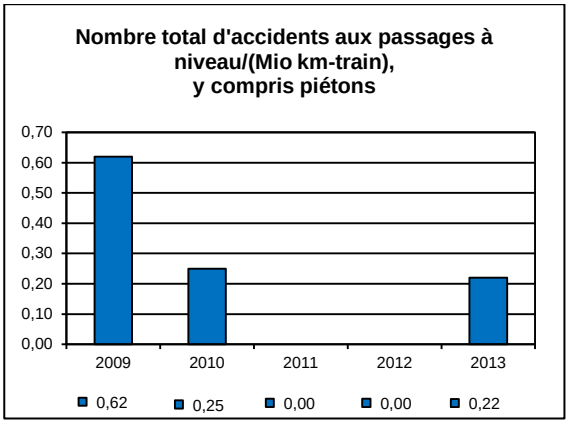
A.1.1 Accident-related indicators

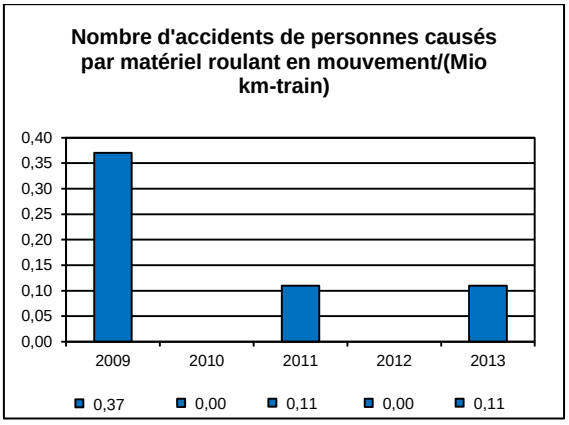
A.1.1.1 Total and relative number of significant accidents per million train-kilometers (million t-km) and breakdown per type of accident.

2013 accident types	Number	Number per million t-km
Train collisions, including with obstacles inside the track gauge	0	0.00
Train derailments	0	0.00
Accidents at level crossings, including those involving pedestrians	2	0.22
Accidents to people caused by rolling stock in movement	1	0.11
Fires in rolling stock	0	0.00
Other	0	0.00
Total	3	0.33









Since the first annual report was drawn up in 2009, there have not been any significant accidents in the "train derailment", "fires in rolling stock" and "other" categories.

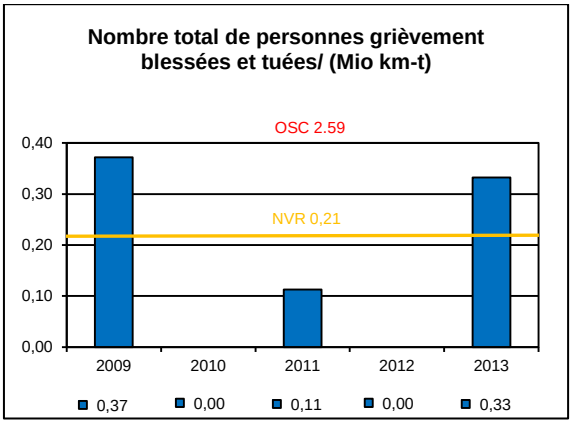
Legend

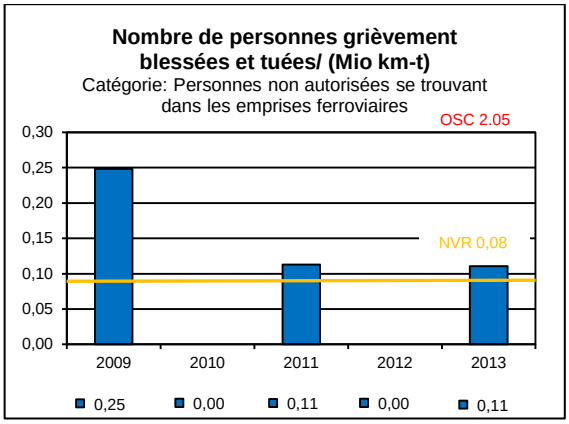
Nombre total d'accidents significatifs (Mio km-train)	Total number of significant accidents (million t-km)
Nombre total de collisions de trains (Mio km-train), y compris avec obstacles à l'intérieur du gabarit	Total number of train collisions (million t-km), including with obstacles inside the track gauge
Nombre total d'accidents aux passagers à niveau (Mio km-train), y compris piétons	Total number of accidents at level crossings (million t-km), including with pedestrians
Nombre d'accidents de personnes causées par matériel roulant en mouvement (Mio km-train)	Total number of accidents to people caused by rolling stock in movement (million t-km)

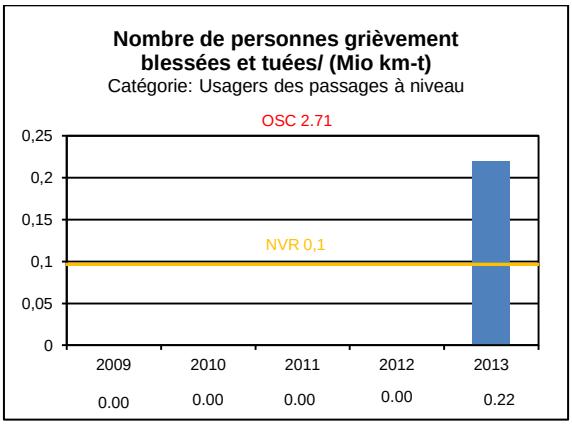
A.1.1.2 Total and relative number per million train-kilometres (million t-km) of people seriously injured and of people killed per type of person and type of accident.

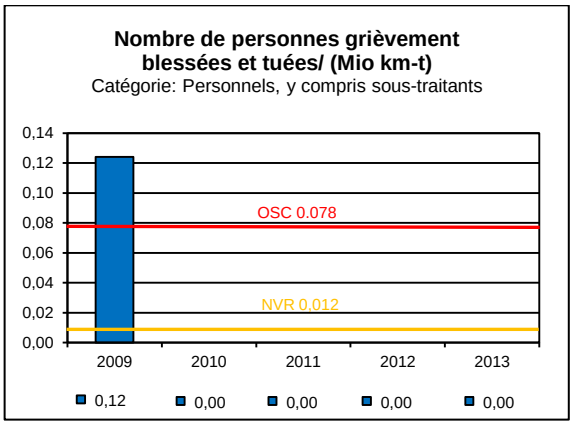
2013 people types	Number	Number per million t-km	Number per million p-km	Number per million pt-km
Passengers	0	0.00	0.00	0.00
Personnel, including subcontractors	0	0.00		
Level-crossing users	2	0.22		
People trespassing on railway property	1	0.11		
Other	0	0.00		
Total	3	0.33		

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









There were no serious passenger accidents between 2009 and 2013.

Legend

Nombre total de personnes grièvement blessées et tuées (Mio km-t)	Total number of people seriously injured or killed (million t-km)
Nombre total de personnes grièvement blessées et tuées (Mio km-t) Catégorie : Personnes non autorisées se trouvant dans les emprises ferroviaires	Total number of people seriously injured or killed (million t-km) Category: people trespassing on railway property
Nombre total de personnes grièvement blessées et tuées (Mio km-t) Catégorie : Usagers des passages à niveau	Total number of people seriously injured or killed (million t-km) Category: level-crossing users
Nombre total de personnes grièvement blessées et tuées (Mio km-t) Catégorie : Personnels, y compris sous-traitants	Total number of people seriously injured or killed (million t-km) Category: personnel, including subcontractors

A.1.2 Indicators relative to dangerous goods

Total and relative number per million train-kilometres (million t-km) of accidents relative to the transport of dangerous goods:

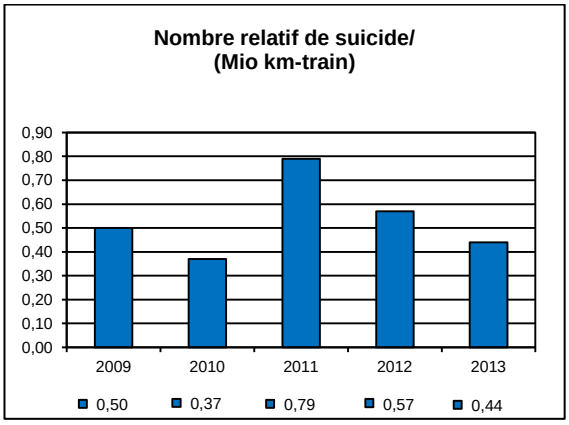
Accidents with dangerous goods in 2013	Number	Number per million t-km
Accidents involving a railway vehicle transporting dangerous goods	0	0.00
Accidents of this type leading to release of dangerous substance	0	0.00
Total	0	0.00

Since the first annual report was drawn up in 2009, there have not been any significant accidents when transporting dangerous goods.

A.1.3 Indicators relative to suicides

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

Suicides in 2013	Number	Number per million t-km
Total	4	0.44



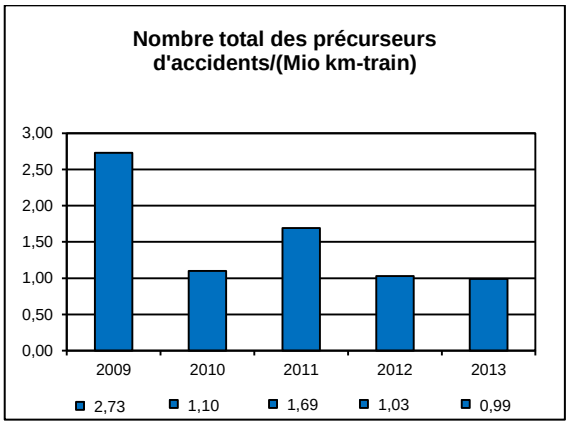
Legend

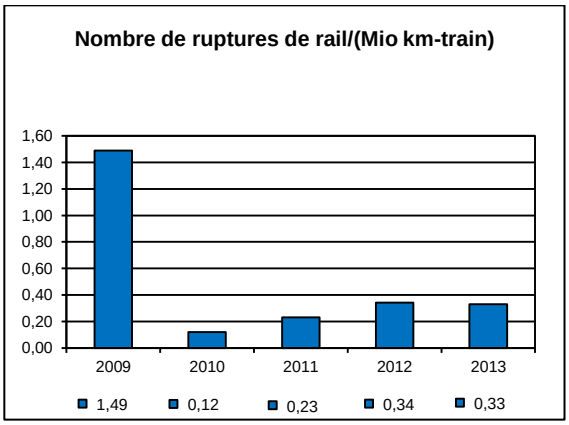
Nombre relatif de suicide/ (Mio km-train)	Relative number of suicides / (million train-km)

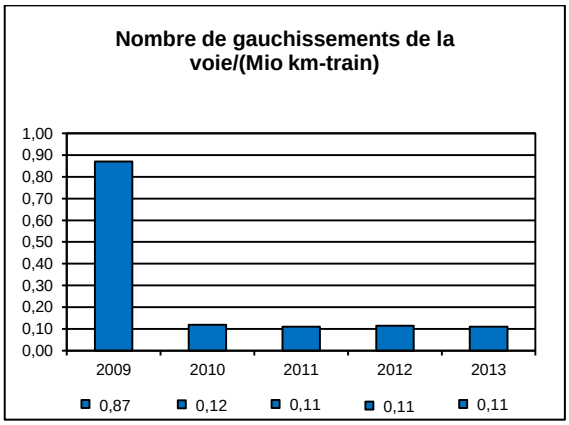
A.1.4 Indicators relative to accident precursors

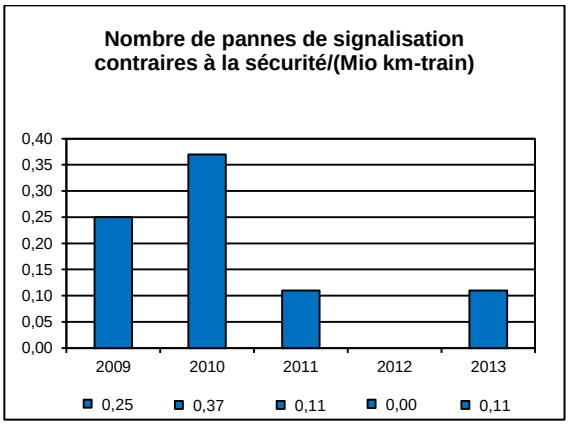
Total and relative number per million train-kilometres (million t-km) and per type of precursor:

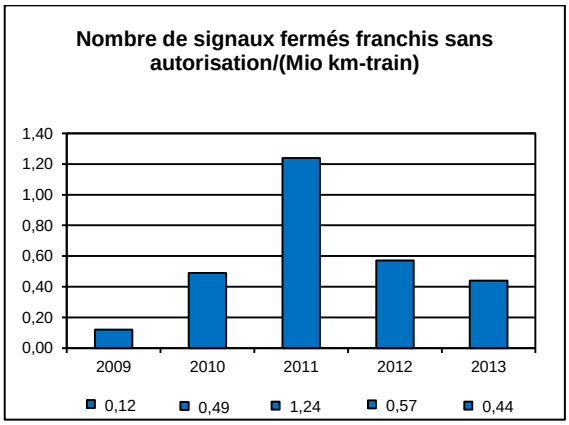
Precursor types	Number	Number per million t-km
Broken rails	3	0.33
Track buckling	1	0.11
Signalling failures affecting safety	1	0.11
Closed signals crossed without authorisation	4	0.44
Broken wheels and axles on rolling stock in service	0	0.00
Total	9	0.99











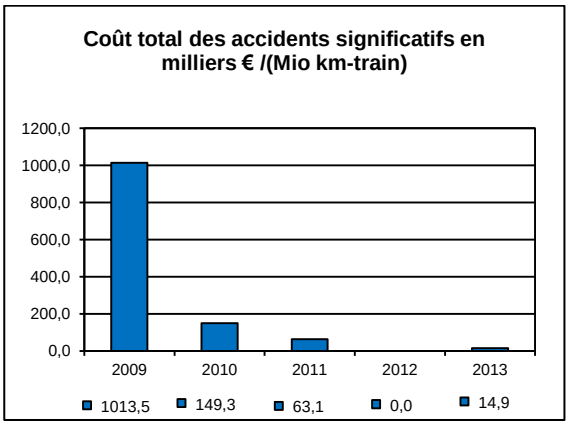
Legend

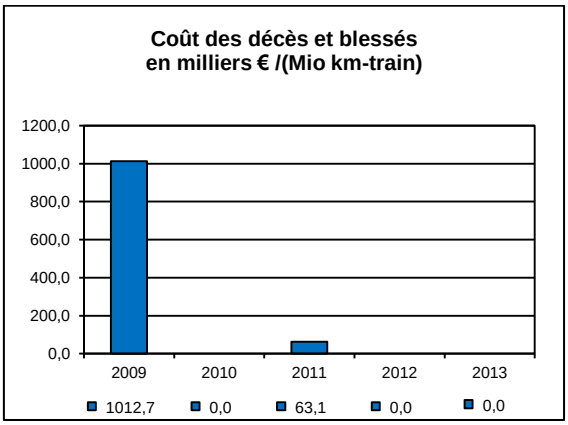
Nombre total des précurseurs d'accidents (Mio km-train)	Total number of accident precursors (million t-km)
Nombre de rupture de rail (Mio km-train)	Number of broken rails (million t-km)
Nombre de gauchissements de la voie (Mio km-train)	Number of cases of track buckling (million t-km)
Nombre de pannes de signalisation contraires à la sécurité (Mio km-train)	Number of signalling failures affecting safety (million t-km)
Nombre de signaux franchis sans autorisation voie (Mio km-train)	Number of closed signals crossed without authorisation (million t-km)

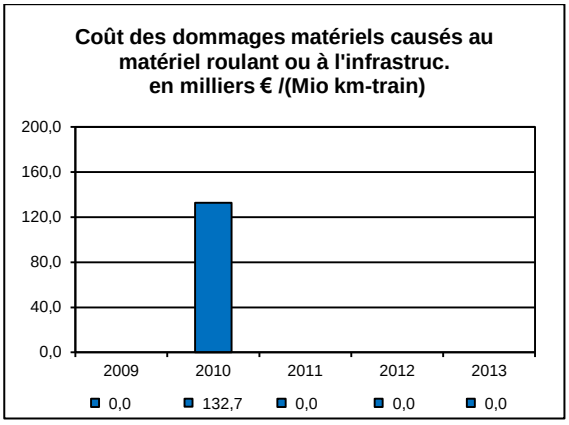
A.1.5 Indicators relative to the economic impact of accidents

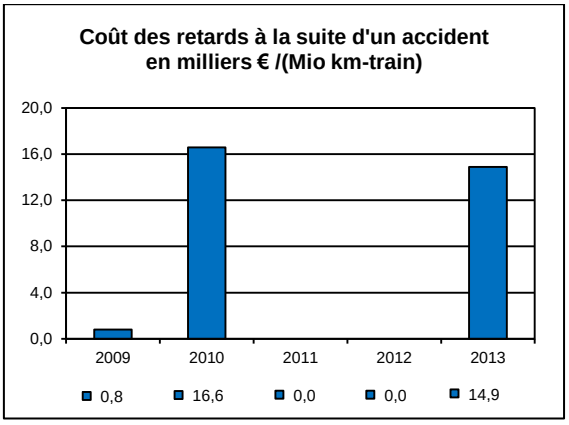
Total and relative costs per million train-kilometres (million t-km) in euro and per cost type.

Cost types	€k	€k per million t-km
Number of deaths and serious injuries multiplied by the value of preventing a death or serious injury.	0.0	0.0
Cost of damage caused to the environment	0.0	0.0
Cost of material damage caused to rolling stock or the infrastructure	0.0	0.0
Closed signals crossed without authorisation	0.0	0.0
Cost of delays following an accident	0.0	14.9
Total	0.0	14,9









Remark: In 2009, the proportion of workers was set at 10% and that of non-workers at 90% for the periods during which the accidents occurred. However, by analogy with the rules of the Association d'Assurance Accidents (AAA – Association of Accident Insurers) regarding Health & Safety at Work, people going home from work are subject to the journey to/from work legislation and are therefore counted as workers. Consequently the breakdown between workers and non-workers has been calculated for the whole day, applying the rule laid down by AAA. This is equivalent to applying a rate of 70% workers and 30% non-workers. Students travelling by rail have been counted as workers.

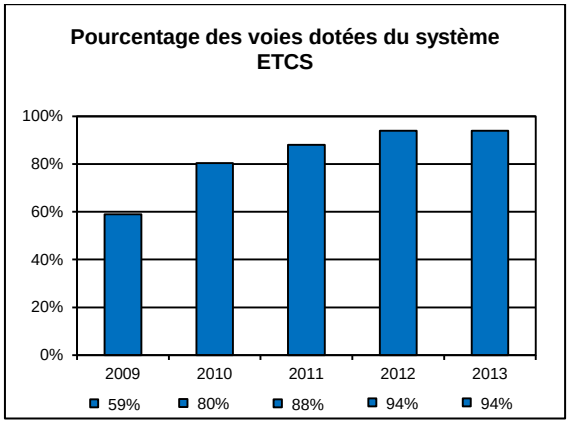
Legend

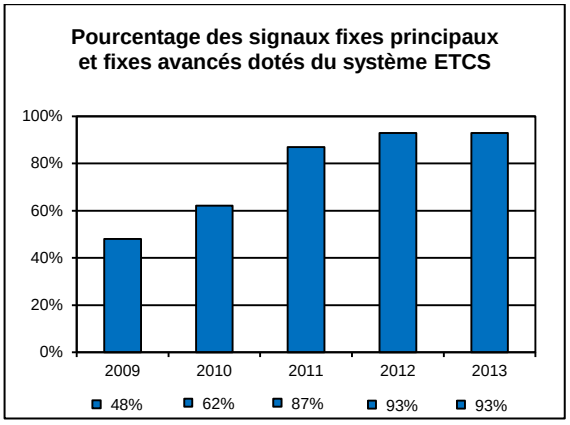
Coût total des accidents significatifs en milliers € (Mio km-train)	Total cost of significant accidents in €k (million t-km)
Coût des décès et blessés en milliers € (Mio km-train)	Cost of deaths and injuries in €k (million t-km)
Coût des dommages matériels causés au matériel roulant ou à l'infrastructure en milliers € (Mio km-train)	Cost of material damage to rolling stock or infrastructure in €k (million t-km)
Coût des retards à la suite d'un accidents en milliers € (Mio km-train)	Cost of delays caused by accidents in €k (million t-km)

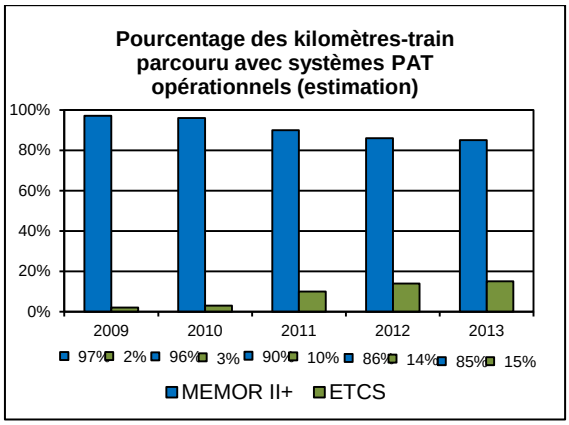
A.1.6 Indicators relative to the technical safety of the infrastructure and to its upgrading

A.1.6.1 Automatic Train Protection (ATP) system

2013 indicators	MEMOR II+	ETCS
Percentage of track fitted with an ATP system	100%	94%
Percentage of fixed and advance fixed signals fitted with an ATP system in service	100%	93%
Percentage of train-kilometres covered by operational ATP systems (estimate)	85%	15%







Legend

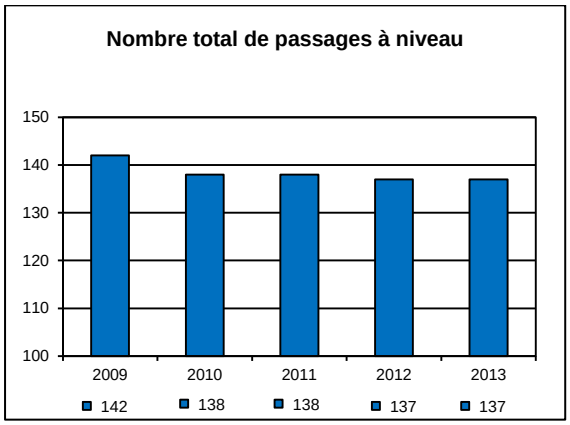
Pourcentage des voies dotées du système ETCS	Percentage of track fitted with an ETCS
Pourcentage des signaux fixes principaux et fixes avancés dotés du système ETCS	Percentage of fixed and advance fixed signals fitted with an ETCS
Pourcentage des kilomètres-train parcouru avec systèmes PAT opérationnels (estimation)	Percentage of train-kilometres covered by operational ATP systems (estimate)

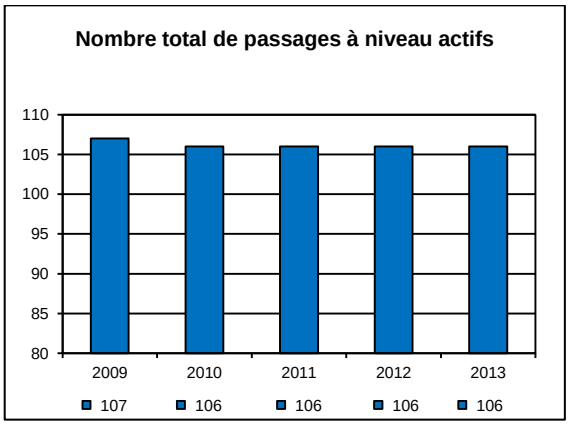
A.1.6.2 Number of level crossings (total, per line-kilometre and per track-kilometer) and per type of level crossing:

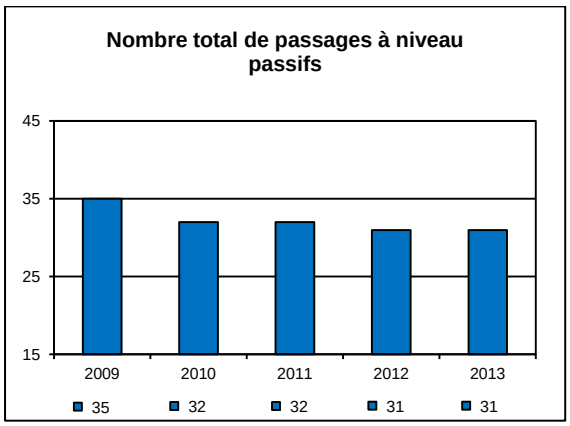
a) Active level crossings by type	Number	per line-km (275 km)	per track-km (621 km)
i) Automatic warning on the user's side	3	0.0109	0.0048
ii) Automatic protection on the user's side	0	0.0000	0.0000
iii) Automatic protection and warning on the user's side	82	0.2982	0.1320
iv) Automatic protection and warning on the user's side and protection on the rail side	0	0.0000	0.0000
v) Manual warning on the user's side	18	0.0655	0.0290
vi) Manual protection on the user's side	2	0.0073	0.0032
vii) Manual protection and warning on the user's side	1	0.0036	0.0016
Total	106	0.3855	0.1706

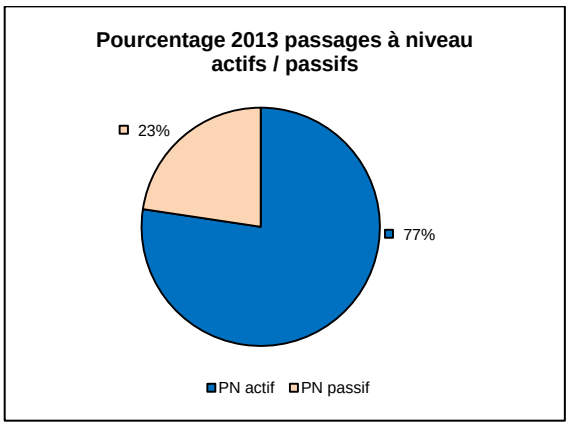
b) Passive level crossings	Number	per line-km (275 km)	per track-km (621 km)
Total	31	0.1127	0.0499

c) Active and passive level crossings	Number	per line-km (275 km)	per track-km (621 km)
Total	137	0.4982	0.2206









Legend

Nombre total de passages à niveau	Total number of level crossings
Nombre total de passages à niveau actifs	Total number of active level crossings
Nombre total de passages à niveau passifs	Total number of passive level crossings
Pourcentage 2013 passages à niveau actifs/passifs	2013 percentage of active/passive level crossings

A.1.7 Indicators regarding safety management

Internal audits performed by the infrastructure managers and railway undertakings such as they are defined in the safety management documentation. Total number of audits performed and percentage with respect to the audits required (and/or planned).

2013 internal audits	CFL/IM	CFL/RU	CFL cargo	SNCF	Total
Number planned	30	241	201	0	472
Number performed	30	264	193	0	487
Percentage of planned audits performed	100%	110%	96%		103%

ANNEX B

CHANGES TO THE LAW – Table 1

AMENDMENTS TO THE RSD	Transposed (Y/N)	Legal reference	Date of entry into force
Directive 2008/57/EC	Y	Law of 22 July 2009 concerning the safety of Community railways (Railway Safety Directive) Publication in the Official Journal - Mémorial A No 169 of 27/07/2009. As it was only possible to complete transposition of Directive 2004/49/EC on 27/07/2009 (date of publication in the Official Journal - Mémorial A No 269 of the law of 22 July 2009 on railway safety), this took into account Article 40 of the interoperability directive, repealing Article 14 of Directive 2004/49/EC.	Publication in the Official Journal - Mémorial A No 269 of 27/07/2009
Directive 2008/110/EC	Y	Law of 14 December 2011 on the transposition of the European Parliament and the Council's directive 2008/110/EC of 16 December 2008 modifying directive 2004/49/EC concerning the safety of Community railways.	Publication in the Official Journal - Mémorial A No 273 of 27/12/2011
Directive 2009/149/EC of the Commission	Y	This directive modifies the Annex and its Appendix concerning the common safety indicators and the common methods for calculating the cost of accidents. As Luxembourg's transposition of the basic text refers to the Annexes of the actual directive, without including them textually, these modifications are automatically applicable in Luxembourg once Directive 2009/149/EC comes into force.	As that of the directive

ANNEX B

CHANGES TO THE LAW – Table 2

LEGISLATION AND REGULATIONS	Legal reference	Entry into force	Description of the change	Reasons for the change
Regarding the NSA				
Legislation relative to NO, DO, EO, third-party entities for recording, inspection, etc.				
Regarding the RU/IM/ECM	Grand-Duchy regulation of 8 November 2013 modifying the Grand-Duchy regulation of 16 August 2010	25/11/2013	Accreditation criteria and procedures regarding training centres providing train driver training, for examiners tasked with assessing train drivers, along with the criteria relative to the organisation of exams	Decision of the Commission No 2011/765/EU of 22 November 2011 concerning the accreditation criteria and procedures regarding training centres providing train driver training, for examiners tasked with assessing train drivers, along with the criteria relative to the organisation of exams
	Kleinbettingen – Autelbas (11/6) Border instruction - 162/5 INFRABEL / CFL line	27/03/2013	Definition of all the specific features regarding the Autelbas – Kleinbettingen section.	

ANNEX B

CHANGES TO THE REGULATIONS – Table 3

LEGISLATION AND REGULATIONS	Legal reference	Entry into force	Description of the change	Reasons for the change
Regarding the RU/IM/ECM	Border instruction(EIC LOR DC00072 (EC 30)) Bettembourg-Thionville	07/11/2013	Definition of the operating conditions for the infrastructure part	
	GRTO 11 Grand-Duchy regulation of 7 November 2008	01/01/2013	Updating of the GRTO 11 Railway Incidents and Accidents	Creation of a “Notification of railway incidents/accidents” form by the Administration for technical investigations
Implementation of other EU requirements (provided they concern railway safety)				