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## **Bridging a Century – 21<sup>st</sup> Century Safety for 19<sup>th</sup> Century Rail**

### **Operating a heritage train is a dangerous business.**

In the Netherlands, several road users and a staff member were heavily injured, and one road user fatally, in level crossing accidents with heritage trains. One of these accidents appeared in a national TV news bulletin.

In Sweden in 1998, a narrow gauge train of the Vadstena-Fogelsta Railway derailed at poorly maintained track. Seventeen passengers were injured, five of them severely. Lack of money and knowledge caused the accident.

The British railway press regularly reports about minor or major accidents. They range from a derailed 9F to a young volunteer shunter mangled between two vehicles. There were also fatal accidents with staff and trespassers. Remember also the fatal accident in Belgium at Li Trambleu. Six passengers were killed in a runaway train.

A modern way of measuring railway safety is the number of persons killed or wounded per 1 billion travelled kilometres. The Dutch Transport Minister accepts the present level of 0,3 passengers killed for every 1 billion passenger kilometres. Staff fatalities must be less than 1 staff member killed per 10.000 man-years of activity. It is not easy to calculate such a number for all European heritage railways together. It might be quite difficult to attain this safety level of modern railways, even with the low speed of most heritage trains.

You could of course say that these accidents are just single incidents. Some years ago a Dutch heritage Dakota DC-3 crashed, killing the more than 30 people aboard. This was also an incident, compared to all those commercial DC-3's still flying - and crashing - elsewhere in the world. It meant the end of passenger charter flights with heritage commercial aircraft in Holland. It meant also the loss of the main source of money for maintaining such aircraft in flying condition.

Many of you have been so kind to answer a questionnaire on the position of heritage train operators. I highly appreciate those who tried to understand and answer its incomprehensible questions. A summary with all answers is available with the printed version of this speech. It gives an interesting insight in the changing environment for heritage rail operators.

Every country has its own history and peculiarities. Each country also has its own way for implementing the EU Railway Directives. Although not meant for heritage rail, it influences them in many countries. At the same time, the style of supervising heritage rail differs enormously between countries. It seems that the United Kingdom and Luxemburg are the two extremes.

In a remarkable number of countries, the style of supervising heritage rail is about the same as for commercial rail. But: often the style of supervision looks rather classical, centred on technical checks of vehicles and track. A problem here is that such incidental checks can fail to discover the real problems-in-waiting that only the own staff can - and should - know to exist. An external inspector cannot take a locomotive apart just for a check! It is the craftsmanship and organisation of the whole workshop that guarantees its safety and reliability underneath its brightly polished skin.

In most countries, operators are themselves responsible for operating rules, training of staff, maintenance systems and other activities that are less easily inspected. Just following existing (or former!) operating procedures will not suffice here. Adopting the old rules and practices of a former railway company can mean the re-introduction of the old safety deficiencies, with modern ones added! Managing the safety of a heritage rail organisation is much wider than preparing for the next inspection and obeying rules.

Structured safety management as a government requirement in a limited number of countries. The British Safety Case has earned itself a reputation. In the Scandinavian countries safety management also has found its way in the railway legislation, like in Holland. The Dutch Transport Minister would like to see its voluntary introduction by local and heritage railways. The Dutch member of Fedecrail, HRN, has made the

presence of a safety management system, a condition for full membership. It is to be based on the Railed-standard V-001, and adapted to the size and specifics of each member.

The proposed EU Railway Safety Directive will lead the member-states to reconsider railway safety. Basic principles for safety management are to be part of it. Mr. Lundström will tell you more about it tomorrow. I am convinced that this Directive shall influence heritage rail. Many states now have the same methods of supervision for commercial and heritage rail. You can expect them to continue this, and to extend the principles of this Directive to rail systems that are not covered by the Directive itself. The result could be that in the near future structured safety management becomes a legal obligation for heritage rail in more countries.

In my opinion, taking care of your own safety management is the only way to make your operations safe. You cannot just rely on rules written by someone else for another situation. You cannot expect someone else to know and remedy your risks. Some time ago, a boiler blowback during a British main line run caused heavy burns to the footplate staff. Articles in the railway press suggested that more professional handling of the boiler could have prevented this. That makes it a training issue, as it is a part of a driver's professional knowledge. What kind of training did the driver have in handling boilers in specific situations? Was his trainer experienced, and his training adequate? Who was responsible for organising this training? This is a management issue instead of an unfortunate accident.

In Letters to the Editor, Railtrack was afterwards blamed for not having prescribed the presence of a first-aid-kit specially for treating burns on every steam locomotive. Reading those letters, I had to think about a well-known person in British rail heritage and his complaints about the nanny state. This incident makes clear that really good risk-analysis and risk prevention can only be done by yourself. As Livius Kooy, your Fedecrail secretary, pointed out when reading the draft of this speech, the first thing to do is to cool burns with cold water. He knows, because the management of the heritage railway where he is a guard made first-aid-training obligatory for train staff. But who organises and evaluates accident exercises, together with the local emergency services?

In 1995 a firebox exploded on the Gettysburg Railroad in the USA. It was caused by a total lack of understanding of operating a high pressure boiler in a safe way. Training of footplate staff consisted of imitating the trainer. Boiler cleaning consisted often of signing a form. Scaling that almost completely blocked the water gauges, a leaking feed pump that was closed, and many more things caused a lack of water. You find a summary of the accident report with the printed text of this speech. The government remedy consisted of 46 pages of new rules, mostly for steam locomotive inspections (and lots of paperwork). Much less pages were about managing safety, training and professional knowledge.

Heritage train operators must therefore take care themselves for the adequate training of their staff and the presence of essential knowledge in their organisations. The time that you could rely on the steam locomotive knowledge of a main line railway, has long passed. Their new technologies make it increasingly difficult to benefit from the knowledge of their "real rail professionals". Which High Speed Train technologist is still fully familiar with plain bearing axleboxes? The modern railways are more commercially than technically oriented. Fewer people there now know the "why" while the books - such as a company's Quality Management System - only describes the "how".

A safety management system in itself does not yet guarantee safety. It needs people with the proper knowledge and motivation to manage and operate a safe railway. They must know their railway, know their job and know the risks. Training through trial-and-error can have spectacular results. I am sure that the public, government inspectors and liability insurers do not appreciate it.

Therefore heritage train operators must develop and enhance the necessary professional knowledge themselves. Exchange of information about for safety and specialist knowledge should be part of it. The best safety lessons come from things that went (almost) wrong. Can you learn from Fedecrail members' experiences, because they make them known to their colleagues in a structured way? Just think about the lesson learned the hard way with the accident in Sweden in 1998. Did you all learn from it? When you did not, read the summary of the accident report, with the printed text of this speech.

It is good to see from the questionnaire that safety is an important subject of discussions within the national federations. As stated, an increase in rail safety regulation can be expected in many countries. I am aware that more stringent safety requirements may make it more difficult for new organisations to start, but that should be accepted. The time that you could start a steam railway by lighting the fire in the locomotive, is over. The European heritage rail organisations can not afford another "Li Trambleu". Who can not take care of safety, should never operate a train at more than Gauge II. But: safety regulations must make sense. Safety requirements must also be in balance with their purpose.

A good structural relationship between heritage rail and government inspectorates or similar agencies seems to be a little difficult in some countries. In several countries such government organisations are rather new. It is understandable that it takes them some time to settle in a new role within the changing European railway environment. In my opinion, discussing just the rules with them is not enough. The discussion should aim at developing a national structure that can better guarantee safety than an infrequent visit by a government inspector. The French approach deserves mentioning here. I expect that Mrs. Dauvilliers will tell you more about it.

As I said, the future might bring the obligation of a documented safety management system for heritage rail operations. This must not be seen as the final solution in itself! It is an important tool, to make clear the workings of an organisation. Write down how you do something, and then do what you have written down. Essential is that when you write down a procedure or someone's responsibilities, you automatically discover holes and leaks in the way you do such things at present. It lets you discover your possibilities of improvement yourself. When doing this, the opportunity to include Health & Safety at Work issues should not be lost.

A well adopted safety management system has nothing to do with creating masses of paper with detailed instructions or reports. When the principles and basics are good, its documentation easily fits in one thin binder. The national members of Fedecrail should play an essential role in this development. For the government agencies it could mean that they accept a way of interchange with heritage rail that is aimed at supporting these initiatives. This could be by giving information, entering discussions, taking initiatives to enhance professionalism etcetera.

For some of these government agencies, this could mean a change in focus. A choice "improving safety effectively together" instead of "strictly inspecting the rules" could seem contrary to their classic role. In a good relationship, it should not be "we have a problem, don't tell the inspector!". It should be "we have a problem, and does the inspector think that our solution is a good one?". It takes trust to discuss problems with an Inspector, when he could also fine you for breaking some - in your opinion? - obscure and superfluous rule.

Such a kind of trust and understanding will take time to build up, from both sides. It could even mean a political discussion about amending legislation to make it possible. Safety improvement depends on open communication, while crime suspects have the right to remain silent. Two principles clash here, creating a huge legal problem in itself. The aim and result for both railway and government should be a measurable improvement of railway safety, as that is the object both want to achieve.

There was never before such a great necessity for heritage rail operators to be prepared for the future. They should have a well developed view on, and practice for, safety management, adapted to the specific situation of heritage rail, developed in co-operation with the national rail authorities. This should be the bridge that spans the century between 19th century heritage rail and 21st century rail safety management. The advantages and necessity of a supporting and co-ordinating role for the national federations need no discussion. An open-minded supportive attitude by the respective government agencies and inspectors is a necessity.

The text of Railed standard V-001 (Safety management system for train operators) is available on the Internet, in Dutch and English, at [www.railed.nl](http://www.railed.nl)

## Railway Safety for heritage rail - results from the questionnaire

**Answers came from:** B - Belgium, CH - Switzerland, D - Germany, Est - Estland, F- France, GB - United Kingdom, I - Italy, L - Luxembourg, LT - Lithuania, N - Norway, NL - Netherlands, S - Sweden, SF - Finland (broad/narrow gauge)

N.A. = Not Applicable or Not Answered

*Thanks to those who took the time to send an answer!*

### 1. Do mto:s (museum train organisations) in your country :

- have a status as an independent railway, or *Est, L*
- are they running over the tracks of a real railway company, or *I, LT, SF*
- both? *B, CH, D, F, GB, N, NL, S*

### 2. Does your government have :

- a preference for one of both situations, or *I, NL (to be independent local railways), S*
- is there no relevant policy? *B, CH, D, Est, F, GB, L, LT, N, SF*

### 3. Do the mto:s have :

- an independent right of access to the national railway network (as far as they comply with similar requirements for common railway carriers)? Or *CH, D, F, N, NL*
- not an independent right etc.? *B, Est, GB, I, L, LT, S, SF*

### 4. Is there a governmental body/authority (not being the national railway company itself!) which supervises the mto:s which are independent railway companies?

- yes, being the:
- *D: Railway Authority of the States, with employees from Federal Railway Authority,*
- *S: Järnvägsinspektionen/"J" (= Railway Inspectorate)*
- *I: Ministerio dei Trasporti*
- *GB: H.M. Railway Inspectorate, within the Health & Safety Executive*
- *F: Ministre des Transports*
- *CH: Office Fédéral des Transports*
- *NL: Ministry of Transport and/or Railned acting as Railway Inspectorate*
- *N: Railway Inspectorate (operations); Railway Administration (rolling stock approval)*
- *LT: National railway supervisor*
- *B: (n.a.)*
- no: *Est, L*
- N.A.: *SF*

### 5. Is this a part of a Ministry or an organisation with an own title and position?

- yes, separate: *D, NL, S*
- no, part of ministry: *B, CH, F, GB, I, LT*
- NL: interim situation, to be resolved under new Railway Act
- N.A.: *L, LT, SF*

### 6. Has this supervision been laid down by law?

- yes: *B, CH, D, GB, I, N, NL, LT, S*
- no: *Est, L*
- N.A.: *F, SF*



**7. Is there next to - or in the place of a governmental body - any supervision by the national railway company?**

- yes: B, CH, F, I, LT, SF
- no: D, Est, GB, N, NL, S

**8. Also when the mto is an independent railway company?**

- yes: B, CH, I
- no: D, Est, F, L, LT, N, NL, S, SF
- N.A.: GB

**9. Is there a difference between supervision of mto:s and the supervision on common railway companies?**

- yes: Est, F, NL
- no: CH, D, GB, I, LT, N, S, SF
- N.A.: B, L

**10. Does the supervising body or the government hold a specific safety philosophy, like:**

- everything is all right when the rules are obeyed; B, CH, I, LT, S,
- N: exemptions for heritage trains on the national network as safe as reasonably possible; ( - none - )
- safety management must be secured structurally (like ISO 9000); F, GB, NL, SF
- there is a general requirement that the railway companies carry out their activities in a safe way (with adequate liberty to do that in their own way). Est, D, L

**11. Does an mto with an independent railway line :**

- write its own traffic regulations for the line, or B, Est, F, GB, L, LT, N, NL, S, SF/narrow
- are these laid down by the government in a law for the whole country, or CH, D, I (should they exist)
- do they have to apply the rules for the national railway network? SF/broad

**12. Can or should an mto :**

- write its own rules for the maintenance system of the rolling stock, or B, CH, D, Est, F, GB, L, LT, N, NL, S, SF
- are there any hard legal requirements? I

**13. How does the supervision take place in your country (yes/no)?**

- inspection of a new track / major work of infrastructure; D, GB, LT, S, SF/narrow
- annual inspection of the whole railway; B, D, LT, S, SF/narrow
- examinations of railway staff by a supervising body or by the national railway company?; B, I, LT
- inspection of rolling stock before putting into service?; B, D, I, LT, S, SF/broad
- annual inspection of rolling stock?; LT, SF/broad
- approval or judgment of rules before putting into force? CH, LT, S, SF/broad
- N.A.: L

**14. Is the national umbrella organisation active with safety matters?**

If yes, by :

- distribution of information regarding legislation and government policies; CH, D, F, GB, LT, N, NL
- distribution of practical information about safety and work methods; CH, D, GB, I, LT, N, NL
- publication of own safety standards; LT, NL
- installation of a safety commission inspecting all members; LT, NL
- structural safety management as requirement for membership in the national umbrella organisation; F, LT, NL
- making available, experts on specific areas (technical, training etc.). F, GB, LT, SF
- No: L, S
- N.A.: B, Est

**15. Is there a structural consultation going on between national umbrella organisation and Ministry of Transport regarding legislation, safety policies, supervision etc.?**

- yes: D, F, LT, S
- no: B, CH, Est, GB, I, N, NL, SF
- N.A.: L

**16. If the mto operates over someone else's infrastructure, does the owner of the infrastructure :**

- maintain sole responsibility for safety, F, GB
- retain only a supervising role for safety, CH, D
- carry out both functions, or I, SF
- carry out neither of the two functions? B, NL
- N.A.: Est, L, LT, N (undiscovered territory), S

**17. Is the relation with the national government shifting because of re-structuring of railway traffic after EU regulations? (separation of infrastructure and exploitation, open access...), new government bodies, new structuring of supervision?**

- yes: B, CH, F, I, L, N, NL, SF
- no: D, Est, GB, LT, S

**18. Do you see this as a threat and if yes, why?**

- B: Severe new rules or charges might become prohibitive
- L: New situation may mean more (safety) requirements, as for any other train operator
- N: more bureaucracy without safety benefit
- NL: New Railway Act mainly considers national rail network
- No: Est, GB, I, LT, S, SF
- CH: expects a clearer legal position for heritage railways
- N.A.: D, F

**19. Do you expect higher charges due to these changes?**

- yes: B, CH, F, GB, NL, SF
- no: D, Est, I, L, LT, N, S

**U.S.A. National Transportation Safety Board****Steam locomotive firebox explosion on the Gettysburg Railroad, 16 June 1995**

## CONCLUSIONS as formulated in the NTSB Accident Report

1. The explosion in the locomotive resulted from crownsheet failure caused by having too little water in the boiler.
2. Because the water-glass spindles were restricted, the water glass could not represent the water level in the boiler accurately.
3. Although the engineer had signed the Federal Railroad Administration's forms No. 1, certifying that the work had been done, the water-glass spindles and gage cocks were not cleaned on a monthly basis.
4. The water glass was not illuminated as required.
5. Gettysburg Passenger Services, Inc., did not have a comprehensive water treatment program.
6. The boiler washing procedure described by the fireman was inadequate to ensure that the boiler was properly and thoroughly cleaned as required by Federal Railroad Administration regulations.
7. Because the feed-pump gage was missing, the traincrew had no reliable way to determine whether feed-pump pressure was overcoming boiler pressure and delivering water to the boiler.
8. Because the wrong type of disk had been installed in the injector, it would have been difficult to use the injector to add water to the boiler.
9. The firemen did not know, because they had not been properly taught, how to blow down the water glass or test the gage cocks.
10. There was no clear division of responsibility among the members of the crew in this accident, particularly between the two firemen.
11. Gettysburg Passenger Services, Inc., management was not aware of the Hours of Service Act.
12. Gettysburg Passenger Services, Inc., had no effective formal training or certification program, and its on-the-job training was based on second- and third hand expertise.

The full report is available on the internet site of the NTSB: [www.ntsbt.org](http://www.ntsbt.org)

## **Swedish Railway Inspectorate**

### **Derailment of train on the Railway Preservation Society's track at Vadstena, 18 July 1998**

SUMMARY, from Railway Inspectorate (Järnvägsinspektionen/J) report, completed March 1999

#### **Incident**

On Saturday 18 July 1998 at 15.45 hours, a Railway Preservation Society train left the rails at low speed on the Vadstena Fogelsta Railway (Museiföreningen Wadstena-Fogelsta Järnväg/MfWFJ), and one of the carriages in the train overturned.

#### **Damage and Injuries**

During the accident, windows in the side of the carriage which hit the ground were smashed. 17 of the 20 or so passengers in the carriage were injured, 5 of them severely. The injuries consisted primarily of injuries incurred in falling, cuts, and, in some cases, fractures.

#### **Results of the Investigation**

Immediate causes

The derailment was caused by excessive track gauge on a stretch of 5 - 6 metres after points 3. Sleepers and fastenings were in such poor condition that they could not hold the rails transversely when the train passed over the weak position.

Underlying causes

The inspection of the status of the track installation was carried out without knowledge of the necessary acute limits. As a result, the risk of derailment was not identified during the inspection of the track.

The Track Manager, who also acted as inspector, does not have sufficient expertise for the task.

#### **Operational Deficiencies**

The poor financial situation of the Railway Preservation Society has led to track maintenance being neglected, and traffic operation being prioritised over essential maintenance measures.

The committee of the Railway Preservation Society has provided no effective management and supervision of track maintenance. As a result, inspections have not been followed up, and there has been a lack of documentation, which is in breach of the Swedish Railway Inspectorate's regulations.

#### **Other observations**

The major inspection by the Railway Inspectorate identified the current deficiencies in the operation, but, despite this, no urgent action was taken to correct matters.

#### **Measures taken and/or decided**

After the accident, the Society repaired the stretch of track on which the derailment occurred, and replaced points 3. The full stretch between Aska and Fogelsta has been closed for traffic until upgrading has been carried out.

After the derailment at Vadstena, the Railway Inspectorate carried out a check on track inspection at all twelve railway preservation tracks, by requesting each of them to submit their most recent inspection protocols. The results have been collated, and show, among other things, that some railway preservation societies lack proper documentation of inspections carried out.

## Proposals for Action

The major system inspection of the Vadstena Fogelsta Railway carried out in 1997 has not yet been completed. The results of this accident investigation will be taken into account in the Inspectors' report, along with proposals for action. For this reason, this inquiry report makes no proposals for action by the Railway Preservation Society.

1. All operators who run preserved railways and tramways should ensure that the track installations are inspected by competent and appropriately qualified inspectors.
2. The Railway Inspectorate should investigate the possibility of drawing up regulations governing requirements for expertise for important officials and technical experts such as inspectors in the operating organisations for railways.
3. The Railway Inspectorate should review the Inspection and Maintenance of Track Installation Regulations (BV-FS 1997:2). There should be rules for classifying deficiencies which have been discovered, so that it is clear which deficiencies require immediate action.

The full report is available at the web site of the Swedish Railway Inspectorate (Järnvägsinspektionen/J), at: [www.jarnvagsinsp.se](http://www.jarnvagsinsp.se)

## **Tourist railways in Belgium: Tales of the unexpected!**

On the third of May of the Millennium year 2000, just after a very successful international steam festival to celebrate the opening of a new tourist season in presence of visiting steam locomotives from home and abroad, a letter from the Belgian Railways legal department reaches the post office box of the Steam Centre Maldegem.

In brief this letter contains the following messages:

The railway track is completely deteriorated, there is no maintenance, the insurance is not suitable enough. Traffic is no longer allowed and if you not interrupt services immediately we will put an end to the lease of the line in due course.

And, if this was not enough, the Legal department informed us with joy that they had communicated a copy of this letter to the mayors of both Maldegem and Eeklo and to the Public Attorney.

There we stood after twelve years of trouble free operation, at least what the railway is concerned, not mentioning five car/train accidents at level crossings. We were grown up from a hobby to a major tourist attraction, officially accepted by the Tourist Board, but now totally left on our own and considered as a bunch of criminals.

The board of the association however had no intention to sit down under it and decided to fight against this impossible situation created by that death-blow.

Contacts were made with other tourist railways and learned us that they had got a similar letter.

First of all the board wanted to find out from where this monstrous instruction to stop the railway operation came, and on which base what decisions where taken.

Because what you must know, ladies and gentlemen, in Belgium, after almost 30 years of railway preservation, there is still no regulation at all on running a tourist railway with ancient technology and vintage trains. In the early nineties however a with the tourist railways completely discussed draft of royal decree disappeared from the scene before any adoption. As reason was given that the existing railway acts where not accurate anymore in view of the developing European directives.

Despite the horrible "Li Trembleu" accident with seven people killed no authority took serious attention to the case of the tourist railways.

Little change saw the so called management contracts between the State and the Belgian Railways, now transformed into a independent public company. Although there was talking about "an adequate safety level" and "safety standards" there

was no real solution developed. More, the second management contract tried to pass the authority to the regional administrations and to get away from it. It failed.

The good thing was that in October 1997 there had been an on foot inspection of the line by railway engineers giving us the opportunity to organise infrastructure maintenance based on a real survey.

So a lot of maintenance work was already done when a new inspection round was announced for the first of March 2000. This time the inspection would be carried out not only by railway engineers, but also by officials of the Ministry of Transport, because, ladies & gentlemen, European directives on railways, introduced in Belgian law almost overnight, forced the government to install an official body to inspect the railways. This so called "Railway Technical

Support Service” is now part of the Ministry of Transport administration. But for everybody who is expecting now an independent status and management, I can inform you that this service is manned by detached Belgian Railway officials. So, with the greatest respect for the officials concerned, we should have the greatest doubt about their independence.

During the inspection nobody of the officials could answer which regulations they were applying, even not who was responsible. Was it SNCB as our landlord or was it the Ministry of Transport as a kind of Railway Inspectorate ?

The corpulent report on this visit, unilaterally drawn up by the SNCB engineers, reached us only days before the letter. But it did not worry us to much as permanent way gangs of the association had already been working for years on improving the line’s infrastructure. Of course there was still work to do, but the report did certainly not contained an advise to close the railway down, on the contrary the board decided to use the report as a new useful guide to maintenance of the railway in he future.

The letter I have shown at the beginning of my speech makes the story of tourist railway safety really a tale of the unexpected.

Until today no official body has communicated to the sector of the tourist railways the decision that lead to this famous ban on railway traffic. A visit to the legal department learned us that the inspection was ordered by the Minister herself ! And as there is no real Railway Inspectorate the order was given to SNCB - as the only carrier of railway know-how in the country - to act as inspectorate. And almost immediately they came out in the open by threatening with the ultimate sanction: if you are not listening you will face a breach of the lease contract immediately. Big Brother is watching you.

Now what kind of civil servancy is that ?

For it this lease contract in particular that is becoming a big part of the discussion. A contract sees at least two parties. One can accept that the mighty SNCB will impose herself to a bunch of railway enthusiasts, but the non involvement of the SNCB is so tight that this contract makes it virtually impossible to invest in the railway infrastructure. For there is only a six month notice to reclaim the leased infrastructure from the tourist railway associations. So every move we make, every penny we pay today is in the end still putting money in a lost case, because the maintenance work done to the railway infrastructure extends the life of the railway with many, many years which contrasts heavily with the six months notice. This precarious situation is what we are fighting against at this very moment. For there is a total disproportion between the obligations and there financial consequences on one side, and legal security on the other.

Still looking for what was going on the tourist railways decided to contact MP’s. So the Minister faced questions in the Transport Commission of the Belgian Parliament. She denied of course that there was a goal to erase the tourist railways from the existence (although that was what was really happening) and promised consultation together with the all sector. That was August 2000.

This promise however is still a promise, even when the Minister was questioned again last January.

After a long search a good wind eventually dropped on our table the decision that was taken by the SNCB board concerning the tourist railways. Because of a second amendment to the actual management contract between the State and the SNCB stipulating that the infrastructure leased by a tourist railway is not part of their public duties, the SNCB board had decided as follows:

- 1) The lease contract of the railway will be revised to prevent any liability of the SNCB.

- 2) The insurance policy must meet the on the SNCB imposed requirements.
- 3) Those tourist train operating companies coming on SNCB metals must become a subsidiary of the rail infrastructure manager (in this case the SNCB).
- 4) Two times a year there will be a technical inspection of the leased rail infrastructure, and if the safety level is considered as inadequate, the SNCB will break the lease contract.

That is the decision that was never communicated as such to the tourist railways. And almost immediately everyone of you will ask the same question: where is the benefit for the tourist railways ?

This decision fits only SNCB's own comfort.

So, ladies and gentlemen, this happens to be the positive, co-operative, pro-active, modern, open, broadminded, railway friendly approach of the SNCB and behind the scenes the Ministry of Transport, towards tourist railway operation in Belgium. What is an "adequate safety level"? Where are the "safety standards"? Where is the legal security for the tourist railway operator?

While the several tourist railway companies have worked all year to meet the never imposed new infrastructure requirements, after updating of the insurance policies, and are preparing the new tourist season, more then one year after the described events, there is not the slightest sign of any invitation to discuss or any step to co-operation from the Minister or the SNCB. Real civil servancy, meaning "to serve the citizen" is far away in Belgium as far as the tourist Railway sector is concerned. Red tape is the last thing we want.

Until today we have received more help from Andres Wedzinga, than from the Belgian railway authorities - and therefore I must thank him in particular. Andres Wedzinga is from RAILNED – this is the infrastructure manager of the Dutch railways – and he played us trough a lot of information to deal with this matter. By the way RAILNED was heavily criticised and by the SNCB and by the Belgian Ministry of Transport for publishing the Dutch railway access standards on the Internet. So from this kind of criticism alone you learn a lot of the way the Belgian Railway authorities think about giving other train operators access to the national network. – Also John Poyntz was very helpful in giving me the name of our own brand-new railway inspector.

A few weeks ago I telephoned to the Legal Department of the Belgian Railways, asking if they were still working on the revised lease contracts, and if and when they intended to invite the tourist railways for discussion. The answer that was given proved once again that the non-involvement of the SNCB is the focus of the events rather than a workable and viable safety framework for a tourist railway. They apparently had no intention at all, but at least we were allowed to put our concerns, demands and further input on paper regarding a meeting next month.

We are looking forward to this meeting, but as you certainly will understand, with little confidence.

Conclusion drawn from all these events shows absence of any government policy towards safe tourist railway operation in Belgium. It's still, as I have already said, a tale of the unexpected.

The aims of the Belgian railway preservation movement are nevertheless clear:



- First of all the tourist railway operators should be taken seriously and accepted as a full partner in the discussion of safety matters.
- The adequate safety level for tourist railway operation must be defined and safety standards must be published. Even on the European level I like to introduce the idea of a separate directive rather than seeking exemption for every daft proposal affecting operations.
- The revised or new lease contracts should contain enough legal security to allow maintenance costs been written off. That means abolition of any precarious notice and/or providing a compensation clause.
- The technical survey and implementation of safety standards must be controlled and managed by an official body independent from the national network, call it a Railway Inspectorate.

I sincerely hope that the Belgian authorities will be all ears.



Verband Deutscher Museums- und Touristikbahnen

## Organized Safety – The Safety Framework of the German Museum and Tourist Railways



## Introduction

Public safety became an important issue of legislation already shortly after the opening of the first railways. It became clear a very early stage that this new way of transport -f not regulated by construction and operation regulations - was prone to risks which were not known so far. Reports from the 19th century demonstrate dangerous incidents, which the danger got out of control and boilers exploded or trains were derailed. On the basis of these first police regulations a publicly regulated safety system for railways has developed during the course of the last two centuries, which turns this means of transport into one of the safest.

The development of the safety systems took a very different course in the respective European countries due to the national character of the railway systems. In various states there are very different requirements and regulations for the equipment and operation of railways. Interestingly this didn't lead to obviously different railway security. As we tend to say in this case as well: "There is more than one way to skin a cat."

Number of passengers per year:	Ca. 1,9 Million
Active members:	Ca. 5.400 (overall 15.000)
Full-time employment:	Ca. 155
Part-time employment:	Ca. 51
Job-creation scheme:	Ca. 143
Total annual turnover:	ca. 39 Million DM
Regularly used lines:	1.400 km
Operational achievement:	980.000 train-km
Operable locomotives/rail-cars	Ca. 350
Operable carriages:	Ca. 970

**Table 1: Operation of the museum railways within the VDMT (Association of German Museum and Tourist Railways)**

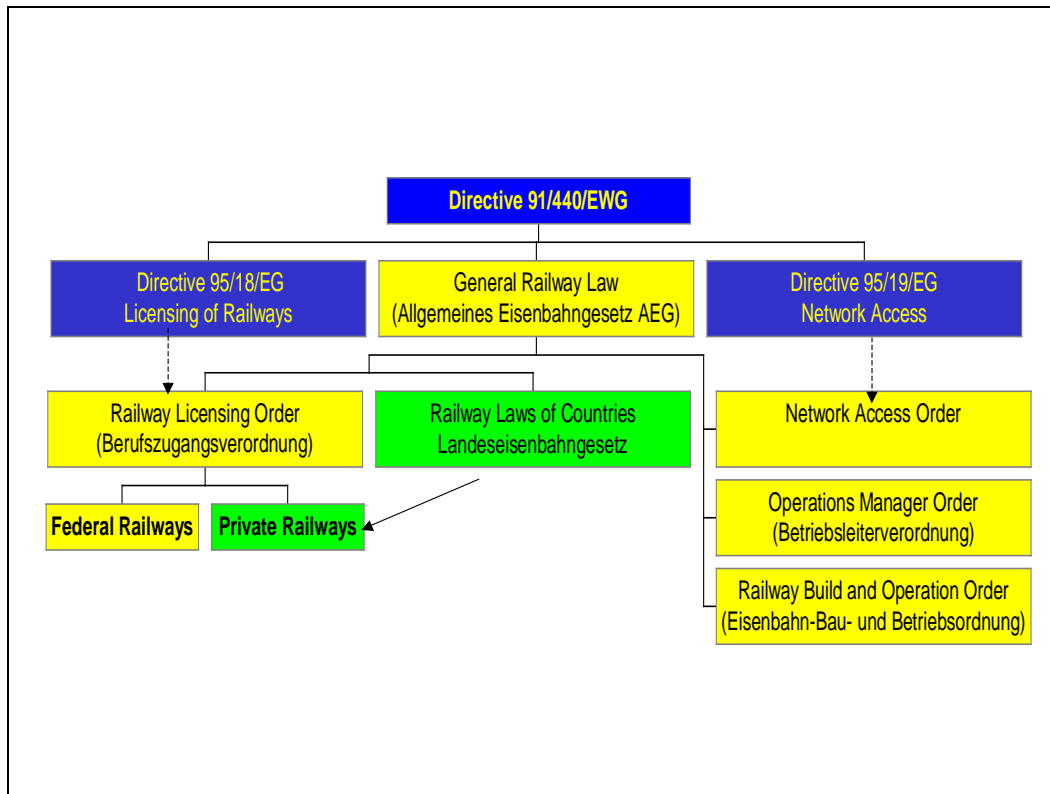
During the second part of the 20th century public railways were joined by the museum railways, which were usually not operated by professionals but by amateur enthusiasts. However, this could not and was not allowed to lead to concessions as far as security was concerned. In the course of the following passage I would like to demonstrate how legislation organizes railway safety in Germany and to what extent museum railways are affected. I will give a small overview of the current federal railway law, which is in force in Germany. On this basis I will explain the subsequent organization railways. Finally I will present an insight into the accident statistics of the German museum railways.

However, at the beginning I have to give you two important pieces of background information. Museum or heritage railways in Germany are railways like other railways with the same rights and obligations. There aren't any special legal or technical requirements or regulations for museum railways. At the moment there are approximately 280 railway organizations in Germany, about 60 or 20 per cent belong to the sector of museum and tourist railways.

## Legal Basis of Railways in Germany

In order to understand the German railway security system we have to consider first the legal structure, which provides the framework for this security system. In this context the focus is not on museum railways

but on railways purely from a legal point of view, in Germany there isn't a difference. There isn't a special law for museum and tourist railways. Nevertheless it has to be taken into consideration that the Federal Republic of Germany (FRG) being a federal state maintains so-called "competitive legislation." Simplified, the following hierarchy is in force in Germany: EU -> FRG -> individual federal states. As long as the respective higher level doesn't provide legal regulations on a certain issue, the lower level may create regulations in it's own estimation.



**Figure 1: Legal Basis of the German Railway System**

Following the EU directive 91/440/EWG and the subsequent directives on 1st January 1994 the General Railways Law (Allgemeines Eisenbahngesetz AEG) came into force in Germany. This is the basis of railway operation in Germany. It generally defines what railways are, which framework is necessary for their authorization and operation and how security of the operation is supervised. Apart from the AEG and on the basis of the authorization within the AEG there are some regulations, which further extend the regulations of the AEG. Amongst others these are:

- The railway laws of the respective federal states (SRL).

These form the basis for granting permission to all railways, which don't belong to the federal government. Actually these are all railways in Germany except the Deutsche Bahn AG (German Railway plc) and its subsidiaries. The SRL amend the AEG but don't contain any deviating regulations.

- Railway Company Licensing Order

Define the conditions for granting a permission to operate a railway. Are these conditions fulfilled, a permit or license has to be granted. Prerequisites for granting a license are:

- Reliability, generally meaning no criminal record or other previous convictions.
- Expert knowledge, i.e. basic legal knowledge of railway operations and the safety precautions.
- Financial sound, meaning, that the applicant organization must prove that concerning the envisaged operation the applicant is financially viable to guarantee the maintenance of the railway.

- **Railway Infrastructure Access Order**  
Regulates under which condition a railway organization receives access to public railway infrastructure (assignment of line capacity). Discriminating conditions concerning personnel, technical equipment, type of traction etc. are not permitted under the Railway Construction and Operation Regulation (RCOR) (see below).
- **Railway management regulation**  
Regulates the necessary qualification and proof of proficiency for the operations-manager of a railway. This person is responsible for the safety of the railway.
- **Railway Construction and Operation Regulation (RCOR)**  
Defines the general conditions, which are in force concerning the construction and operation of railways in respect to their technical and operational characteristics.

## Safety Organization

Concerning railway safety the decisive statement is made in § 4 section 1 of the General Railway Law:

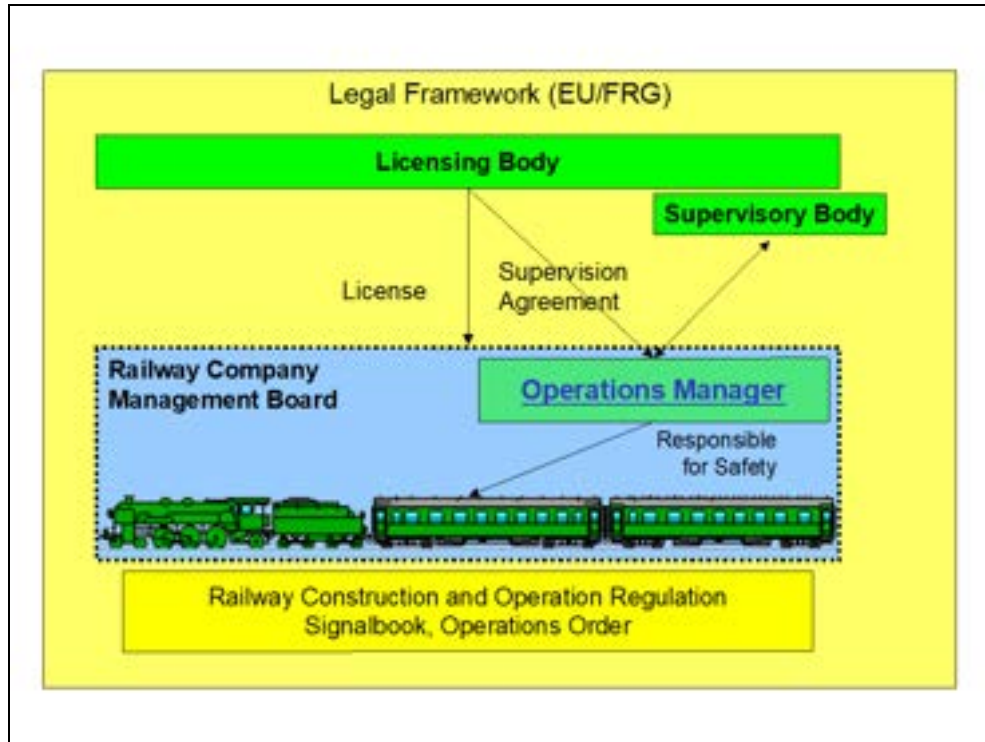
**The railways are obliged to carry out their operations in safety and to build and to maintain the railway infrastructure, the vehicles and the equipment in a safe condition.**

This statement, which seems to be obvious at the first glance has far-reaching consequences. It implies, namely that only the actual safety counts. Independent fulfilling the regulations or the technical rules a railway company must undertake everything necessary in order to ensure the security of its operation.

The organization of the safety of the railway company is regulated by laws and the licensing authority. The authority for the approval of federal railway companies is with the transport ministries of the federal government concerning any other railway companies; their authorization is with the respective states. Consequently there are 16 licensing authorities in Germany. Their work is based on the above-mentioned law and is consequently the same for all railways. A railway company is granted a license and must be granted a license if the above prerequisites are fulfilled.

Before a railway is able to operate one more condition must be fulfilled, namely the so-called operations-manager must be appointed. The function of the manager is a special feature of German railways. The operations-manager is personally responsible for the all-round safety of the railway. He may delegate certain tasks but is nevertheless still personally responsible for their correct execution. Because of the outstanding position of the operations-manager concerning the safety of the business, a company may not nominate just any person as operations-manager. In order to become an operations-manager one must pass a state approved exam and will need the agreement of the supervision authority. Therefore a company may suggest just one operations-manager who then will be confirmed by the supervision authority. This confirmation is necessary requirement for the company to start to operate. Here once more a summary of the function of the operations-manager:

- The operations-manager holds the all-round responsibility for the safety of the railway company.
- The operations-manager is employee of the railway company - not necessarily member of the company management or external expert. The operations-manager is independent from the management of the company in his function.
- A state approved exam is necessary requirement for the activity.
- Approval by the supervisory authority is necessary before the company starts operating.
- Contact of the supervisory authority in a railway company.



**Figure 2: Position of operations-manager within a railway company**

With the authorization of the company as a railway company and the approval of the operations-manager in his office the company may start to operate. The management of the company is now together with the operations-manager responsible for the safety of the company. The same applies here as mentioned before, namely that the factual safety can exceed the sole observation of the regulations. This means that a railway company, apart from observing the regulations, may do more or less concerning the maintenance of vehicles and equipment or the qualification of personnel as long as the company is directed safely. This situation is the consequence of a very small number of binding regulations for railway companies. These are:

- Railway Construction and Operation Regulation (RCOR): technical regulations for the construction, operation and equipment of railways (tracks and vehicles). Compatibility of vehicles and lines and compatibility amongst the vehicles themselves.
- Signal-book: the signals of the railway system as a unified decree valid for the whole of Germany.
- Operations Regulation for DB (Deutsche Bahn, German Railway): Regulations for the schedule of trains and shunting on tracks of the DB AG (German Railways plc.) and other supplementary regulations (e.g. DS 915).
- Operations Regulation for NE: Regulations for train scheduling and shunting on tracks of private railways and supplementary regulations (e.g. VDB-NE for brakes).

It is striking that apart from the AEG no other regulation deals with technical or the maintenance of railways. The AEG doesn't give any details for the maintenance of lines and vehicles either. Only periods of time are being indicated

- Examination of vehicles: 6+2x1 year
  - The work to be carried out is at the discretion of the railway.
  - A one year extension is possible after a simplified inspection if a safe operation can be expected. The railway carries out a check.
- Steam Boiler: 3 + 1 year
  - The work to be carried out is at the discretion of the boiler expert.
  - A one year extension is possible after a simplified inspection if a safe operation can be expected. A boiler expert carries out a check.
- Railway constructions must be monitored regularly.



- Checks by the Railway Supervision Authority are carried out approximately every 2 years (not AEG, administration practice)

Therefore the result is that the individual technical measures required for operation safety of the line and the vehicles are at the discretion of the respective railway companies and within these the responsibility of the operations-manager. Out of this there are two consequences:

1. In case of an accident a railway company may not claim to have observed all regulations and therefore be not guilty of the incident. On the contrary it always has to be examined if in spite of applying all precautions the accident could have been avoided. Even an examination carried out by the Railway Supervision Authority without any complaints doesn't change anything in this matter.
2. In reference to their circumstances railway companies are very well able to optimally maintain their railways taking into account the actual use of the material. Consequently no costly maintenance work has to be carried out after a certain period of time in spite of the fact that the vehicle or the line have hardly been in use.

This regulation provides the operations manager with very little legal security in regards to his action as he doesn't dispose of a catalogue of obligatory regulations, which indicates that fulfilling these regulations, his company is considered safe and in case of an incident he will be considered blameless. This regulation facilitates, though, a maintenance adapted to the actual circumstances, which complies with the economical reality of the individual railway company.

The licensing authorities are responsible for the supervision of the railways as well. This means that they constantly supervise that the authorized railways carry out their operations safely. As a rule this happens by the means of inspections carried out every two years during which the railway company must prove with suitable documentations that its operation are carried out safely. The inspections mainly concentrate on the organization of the company and on the railway infrastructures. The vehicles are usually not subject to inspection. In most of the federal states the task of the Railway Supervision Authority is delegated to the Federal Railway Office, which carries out this task on behalf of the individual federal states.

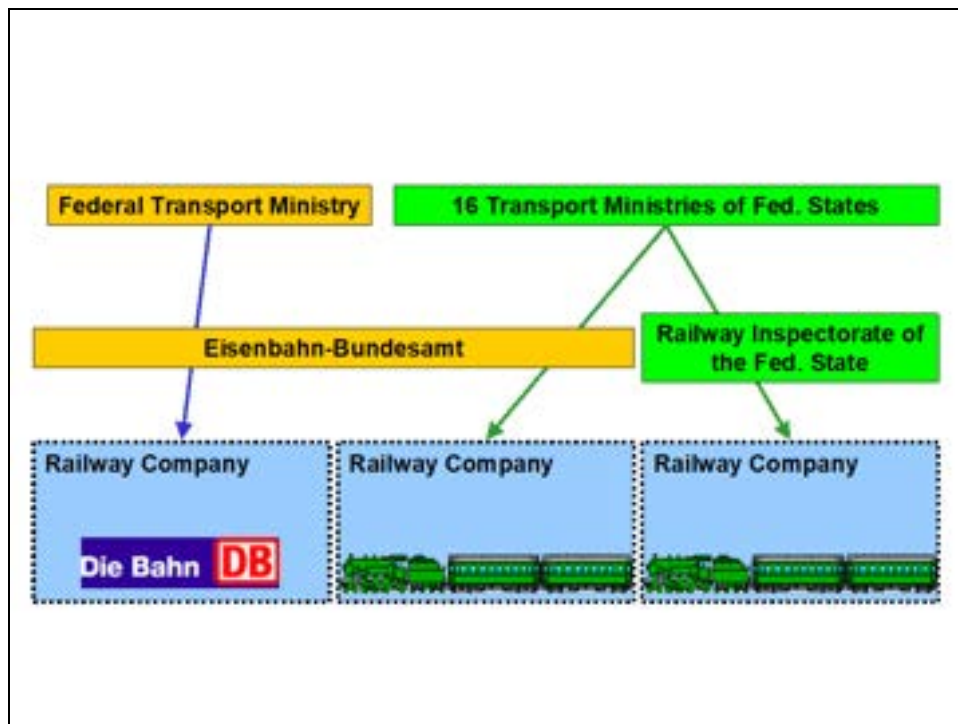


Figure 3: Structure of Railway supervision in Germany

As a conclusion we can say that the German Railway System achieves a maximum of security with very few direct governmental regulations and as a consequence of that with great entrepreneurial freedom to make decisions. The reason for this might be that due to the strict selection of qualified personnel for the

post of operations manager only those people get into this office which are capable to take on the responsibility connected to this job. This combination of an all-round responsibility of the operations manager in connection with his personal qualifications which are required in the selection process leads apparently to the fact that the acting persons make their decisions for their own exoneration in the cause of safety. An inadequate legal security of the persons concerned is thereby accepted.

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## The Human Factor

It is often the case that people working for museum railways are considered as amateurs and not taken seriously and regarded as less qualified by those who work for railways by profession. At this point I would like to mention a few items, which question this particular point of view.

Without any doubt most of the museum railway workers are less experienced than those who work with a railway on a daily basis. However, this shouldn't necessarily be a disadvantage as experience carries a risk as well. During the daily routine actions are carried out unconsciously and deviations from the routine are not perceived. A person who works for museum railways is rarely exposed to such a routine, therefore will normally carry out all actions consciously and on the basis of the existing attention will be better adjusted to his environment.

Museum railwaymen are railwaymen in their spare time. So for them their work is not the necessary evil to make a living. If somebody sacrifices his spare time to train as a railwayman, he will be more motivated to carry out tasks as an average employee of a railway. Should the motivation vanish after a while then the railway volunteer doesn't carry out his work anymore as he doesn't depend on it financially. In this case an employee will carry on working without any enthusiasm.

Furthermore it can be observed -at least in Germany- that amateur railwaymen have a relatively higher level of education and professional qualification than it is the case for those working for normal railways. Many have a higher school-leaving certificate or even an academic education and therefore with the successful completion of a company training will be equipped with above-average qualities compared to the typical railway employee.

Even if museum railwaymen don't live from the railway as a rule, it does not mean that they are worse railwaymen. Lack of routine and practice can be balanced in many cases through better attention, higher motivation and above average cognitive abilities. All this contributes to the fact that museum railways with volunteers can make a company safer, which I will demonstrate in the next section.

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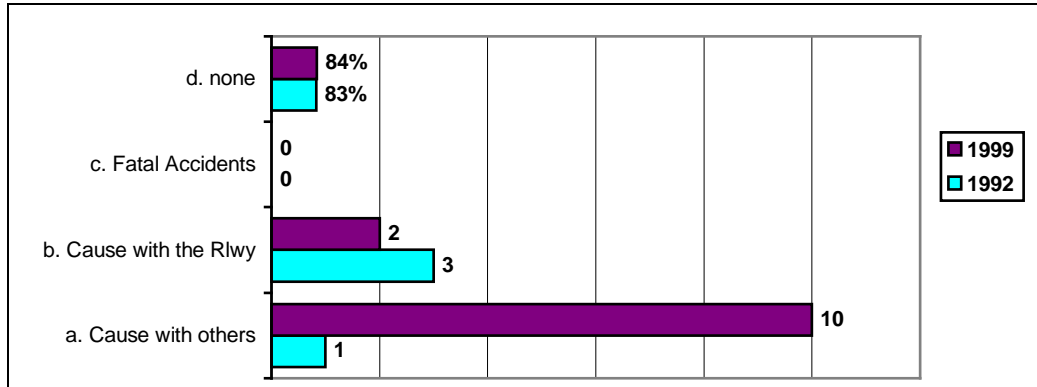
## Safety of German Museum Railways

In general the German museum railways operated by volunteers have been run very safely during the 35 years of their existence. There hasn't been any accident through the railway's fault where several people were injured or died. Naturally there were unavoidable traffic accidents in Germany as well at the loss of human life in such cases. The Supervision Authority does not blame such accidents on defaults regarding the safety of the railways.

According to the VDMT-membership survey from 1999 I would like to talk about this complex a bit more. According to the questionnaires there were altogether 12 accidents, for 2 of which the railways were responsible during 1997/1998. None of these accidents was fatal. The proportion of railways, which didn't have any accidents has remained approximately the same during the last couple of years.



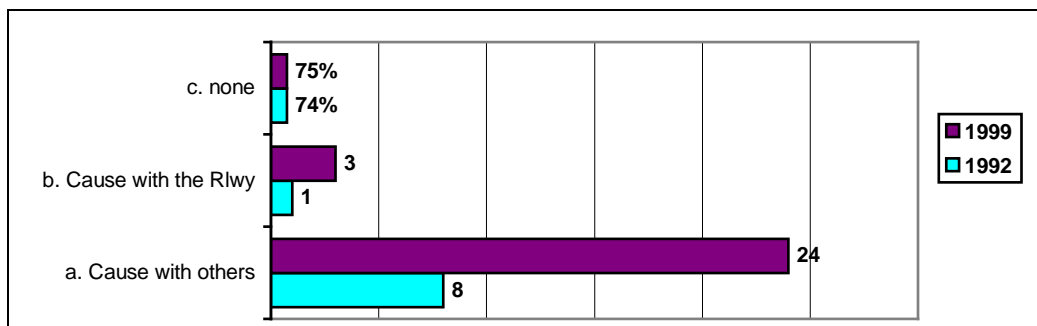
How many accidents were there at the railway with injury to persons in the past two years (1997,1998), which concerned third parties not belonging to the railway?



**Figure 4: Accidents with personal injury at museum railways 1997-98**

There is a similar picture concerning damage to property. In most of the cases accidents are caused by third parties.

How many accidents with damage to property have happened during the past two years (1997,1998) at your railway, which concerned third parties?



**Figure 5: Accidents with damage to property at museum railways 1997-1998**

It has to be mentioned that in both cases the increasing number of accidents is due to the fact that the operation output of the railways has increased six fold since 1992 and as a result there are more opportunities to be involved in an accident. In order to compose accident statistics the respective company output has to be considered as well in order to judge objectively if the number of accidents is relatively appropriate in proportion, as far as we can speak about appropriateness in this context.

Apart from the above-mentioned accidents there are railway accidents where no third parties are involved, which will have purely internal consequences. Usually these are derailments or light collisions during shunting. Often the reasons for such accidents are not with the museum railway but are cause by employees of other railway companies, e.g. whilst switching points by an employee of another railway company. On the subject of these accidents we do not have exact numbers but they should be quite low.

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## The Experience So Far

What experience have we gained in the last six years since the legal framework for railways in Germany has been changed? That depends on the viewpoint. If you read the German press about DB or ask the employees of this company, the impression is quite negative. But there is also a lot of unjustified criticism, because people tend to forget that the former state railway provided an even worth service and had a huge annual deficit.

From the perspective of the museum railways this looks quite different. The opening of the track for competitive railways and the liberal licensing conditions have opened up opportunities for new business

and new activities. Most of which has developed on the main line railways, since it is not common for German museum railways to have an own track. As already mentioned, the number of train-km has increased six fold since the beginning of the nineties. What has been left here to mention, how all this has changed the relation between the museum railways and the railway authorities.

It is perhaps natural that if private or even volunteers start to take on businesses, which had been the remit of state authorities, there is great deal of suspicion with the supervising bodies, if they can do it right. The cause for this is the missing blessing of being a civil servant, which is of course nonsense. So the railway authorities have learned over the years that volunteers can run a railway safely, even at 130 km/h on the main line, mixed in between ICE and other high speed trains. The general issue, if volunteers can run railways has disappeared. Not withstanding the point that the authorities see the ever-increasing number of railways of any kind with mixed feelings due to the increasing workload coming with it.

The continuing area of discussion and distress is about the actual safety requirements. The prime concern for museum railways is the contradiction between authenticity and modern technology. It is obviously a contradiction in itself to preserve a historic object but with the modern safety standards applied to it. The believe is, that new is always better and safer. The question is, is the old solution less safe just because we use different solutions today? To get to an answer two criteria could provide some guidance:

1. The changed public perception of what an acceptable risk is.
2. The number of instances where a risk has become a – near – reality.

Modern societies have a tendency to assume there is a level of absolute safety. To reach it is just a matter of effort. But the costs shouldn't be too high, please. The engineers know there is no such level and there is always a remaining risk of failure how low it ever may become. The problem in Germany is, there is no accepted risk level to measure against. So thinkable – not necessarily significantly possible - incidents tend to become the subject of safety orders, because there is a technical solution to prevent it. This results in questioning solutions, which had been in use for tenth of years without any known problem, just because you could imagine it may fail in a very unfortunate way. This attitude constitutes one of the greatest risks for museum railways, since there is no way to cope with the results while preserving the historic substance of the objects we want to operate.

As an example of the kind of discussions we face may stand the following: In the 80<sup>th</sup> at DB about 200 people per year had fallen out from moving trains. Mainly because they opened the door before the train came to a halt. About 40 of them were killed and most of the rest were injured. To stop this DB introduced a door blocking system, which prevents the opening of a door, while the train is in motion. And though this all cases of people falling from a train had been stopped. So a quite obvious case for cause and effect, which caused the Railway Construction and Operation Regulation to change to demand such a facility for all passenger vehicles brought in service the first time after 1970.

Now the discussion started, if we need such a door blocking system also on historic coaches. Obviously they are all build before 1970. So the law does not apply. But you could imagine that people may also fall from a historic coach. But this contrast with the fact that within 35 years of operation of museum railways there is not one known case where this has happen. Now does it makes sense to introduce a door blocking system in an environment, where the incidents to prevent do not but might happen? There is another question linked to that. How much money would you spend for? I leave both answers to your self.

In Germany the supervising authorities started to order the implementation of the door blocking system also for coaches brought in service before 1970. This is clearly without a legal basis. Even the ministries couldn't stop them. We, VDMT, instead considered the introduction of a door blocking system as on the discretion of the individual railways, depending on the results if their own risk assessment. Finally one of our members took the authorities to court and won on the basis of the written law. Was this a good or bad thing to do?

May be to your surprise it revealed that it was a good thing. First of all, still no passenger has fallen from a museum train since then. Secondly the museum railways are taken more serious by the authorities. The dialog has become more constructive since then, as it ever was before. As a recommendation for you to consider, we like to propose even to go to court together, if you cannot agree about a matter with your



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Torino, Italy

authority. If the law is unclear or not even there, this may help to produce a framework for both sides to cooperate.

Closing with this I wish you always a safe journey on whichever railway you are.

## New Regulations on Safety for tourist and Museum Railways

### SAFETY STANDARDS FOR TURISTIC RAILWAY - NEW PROSPECTIVES -

TO explain completely about this theme, it is necessary a first to get light in what area the so-called turistic railway will be in front of new reality of rail world after the european Directives, that say principally:

- the free circulation of people and goods in all EE without no limits except the observe of safety standards;

- "to de private" the public rail transport: the Italian State loses the transport properties, so there will more competition and more busyness;

- to separate rail infrastructures and public transport management: one company takes care about infrastructures and others carry people and goods and pay toll to the first.

In this scenario, there is the reality of part-present so in Italy there are two great worlds:

- F.S. Spa: this company is the sole agency for public national rail transport and much of local transport -  
It has sole rights to do own ~~technical~~ standards to approves by self the projects about everything, decides practice standards either for safety ~~about~~ either for regularity -

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The Italian State looks at all things and verifies that all is right -

- secondary railways -

There are other railways companies, in local area (you know SATTI yesterday), that are directed by other agencies with no supports in F.S.; and it is Italian State who decides what are the right technique standards in this case -

It is always the State who directly verifies before opening or re-opening for public transport of one railway if there are the right situation of safety -

It is the State who verifies, before immersion or re-immersion of rolling stocks if there are the right conditions of safety, in according national standards. Of course the ordinary responsibility to verify every day the existence of safety conditions is due to the "training manager", who is an engineer and is the first responsible for safety and regularity of each secondary railway -

What are the tourist railway?

What is the difference between F.S. and a tourist railway?

To answer to these questions is useful to know what technique standards are necessary for safety (about staff, rail systems, rolling stocks) -

-2-

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Why did I only talk for safety and not for regularity!

This is the answer: if a touristique - static train, with 50 years old railway carriages and a steam locomotive, goes into a wonderful panorama for 30 km in two hours, nobody us complains ourselves; if, instead, we travel by speedy train for 30 km in two hours, we will do a great revolution!

↳ Is there what is a touristic railway, -

A touristic railway ~~comes~~ exists when:

- to go through a historical and/or very interesting natural area;
- to travel by interesting, historical and technological train that cannot use every day -

It is, for this reason, necessary to decide and to guarantee safety standards, not very restrictive like that, for example, for F. S. Spa, because the employed conditions are very different -

In Italy, at the moment there are no touristic railways just as illustrated before, but there are conjectures to regulate new situations after the closing of short rail lines -

The training of touristic railways is often committed

- 3 -

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to particular Association (in Italy - F.I.F.T.M.) that, under management of technical responsible, may predispose a training regulation after approval by Transport Ministry.

The standards are for:

- staff (driver, ecc. .)
- rail systems (rail, ... bridge. .)
- rolling stocks.

### STAFF

Ⓐ If all the staff do those same functions for a public railway, everyday, there are no problems: the "training manager" verifies the technical and moral acquisitions expected by standards.

Instead, if, usually, staff don't do those functions, it needs to be differentiated between drivers and staff belonging to rail systems.

The staff belonging to rail systems acts under "training manager" control.

The drivers must have physique, psychic and moral acquisitions as to drive a car, and must have examination.

In this matter, we are doing a "regulation about not professional licence to drive historical rail locomotive".

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Pag. 06

Systems

(B) Sometimes the old state of infrastructure and the gangway must be regularly inspected -

But in a few case, it is not necessary to have confort and regularity -

For example, it is authorized to have a level horse at minimum of F.S. standard or to have value like the rail traffic for transport goods but at maximum speed 50 Km/h and axial weight of 16 ton.

But the choice depends by the "training manager" 's advice -

It is also necessary to verify after the safety of railway track -

The Offices of Transport Ministry do the verifies, texts and inspections to know the safety -

If there are more than one train in circulation on the same line, the "training manager" must impose safety rules -

Generally, the tourist's service is for ~~only~~ only one reason, and sometimes for festal or prefestal days, in this situation the "manager" verifies all those controls, that are necessary, many days before, to be sure to do all works need for safety -

The same attention is for bridges, tunnels and



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Page 02

important infrastructures : the rain water must flow very well , otherwise the water could damage the railway -

### Rolling stocks

For the electrical, diesel locomotive or coaches, there are the same rules for the normal public control -

instead for the steam locomotive, it is possible to observe different rules for boiler -

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de l'Équipement,  
des Transports  
et du Logement**

**Direction  
des Transports  
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**Sous-direction  
des Transports  
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**DTT/TF/F2**

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## Tourist and Historic Railways in France

The establishment of tourist railways was initiated by railways lovers by the end of the fifties, who were anxious to have rolling stocks and route sections preserved.

Nowadays there are 57 tourist trains which are in most cases operated by associations, and for about ten of them by professional structures.

From the economical point of view, tourist trains make a turnover of about 50 million Francs (i.e about 7.7 million Euros), they accomodate 2 million passengers or visitors (including the lines where transport is a part of a more complete touristic product). They permanently employ more than 250 persons, not to mention seasonal or indirect jobs such as restaurant business, post cards and souvenirs selling, etc.

It is generally admitted that when a customer spends 100 Francs (15.25 Euros) for a touristic activity, he spends further 75 Francs (11.50 Euros) for allied activities.

### ***Runnings are organized on the national railway network :***

- either with trains chartered by associations on lines open to passenger traffic,
- or on route sections open to freight traffic (during non trafficked days),
- or on route sections closed to traffic.

In the last two situations, an agreement is concluded between the French Railway Network, the SNCF, an association which carries out traffic operation and a local administrative unit which answers for the latter.

17 trains are running on the national railway network

22 *départements* are involved in these runnings

### ***On those lines which are not part of the national railway network, runnings are organized :***

- on secondary lines belonging to the State (Saint Georges de Commiers - La Mure and Nice - Digne).
- on lines belonging to local administrative units, which are placed at disposal or granted to associations or companies (Anduze-Saint Jean du Gard, Connerré Beillé-Bonnetable....),
- on private lines purchased by associations or companies (Tournon - Lamastre.....),
- on tourist tramway lines (Ile d'Oléron and Cap Ferret),
- on harbour tracks (Le Verdon and tourist train of the Rhine),
- on rack railway lines (Montenvers, la Rhune, .....).

These runnings amount to 38.

27 *départements* are involved.

These tourist trains run on infrastructure the gauge of which is various, from submetrical to the so-called standard gauge of 1.435 m. The mileage of the lines varies from 1.5 km to 70 km.

Tourist runnings contribute to safeguard the lines and their installations, the rolling stocks, the buildings, which may be classified historic monument, but they contribute also to safeguard a remarkable technical know-how.

The running rolling stock, sometimes classified historic monument, is very varied : steam engines, coaches, railcars, track cars and every generation of passenger or freight equipment ?.

Rolling stocks are also preserved in museums such as the Railway Museum at Mulhouse or the urban, non urban and rural transport museum (AMTUIR).

### ***The first national charter for development of tourist and historic railways.***

The first national charter for development of tourist and historic railways was signed on the 15<sup>th</sup> of February 2001 by the Minister of Public Works, Transport and Housing, le Minister of Culture, the Secretary of State for Tourism, the Chairman of the French railway network, the Chairman of the SNCF and the Chairman of the Federation of Friends of Secondary Railways - Union of Tourist Railway Operators (FACS/UNECTO).

While clarifying the relationship between the various partners, this first national charter for development of tourist and historic railways in France, a country whose railway network is particularly dense, aims at promoting and upgrading the lines, the quality of proposed offers, safety and supervision of infrastructure, preservation of industrial and cultural inheritance, personnel training and development of local economy.

### **The safety rules on tourist railways**

Article 9 of law of guidance of domestic transport (LOTI) 30 december 1982, as amended, confers a general competence to the State for defining the rules of safety and technical supervision applicable to transport. The State is in charge of the implementation of this regulation and it has to supervise its enforcement.

The Decree of 22 March 1942 on police and operation of main-line railways and local railways sets the general rules to be followed in safety matters, as well as the division of responsibilities between public authorities and operators :

- tourist trains running on the national railway network come under the SNCF's rules on operation and safety, approved and supervised by the Ministry of Transport.
- tourist trains running on the other railways belonging to the State come under operation rules complying with the Decree of 1942 and the methods of supervision are set by specific texts,
- the supervision of trains running on railways belonging to local administrative units, the rules of which must also comply with the Decree of 1942, lies with the Prefects.

As for private lines, which do not come under the provisions of the above mentioned Decree, it rests with the Prefects to take the relevant steps to guarantee the safety of runnings through specific orders.

The ministerial circular of 5 August 1987 sent to the Prefects has reminded these various situations of tourist railways and the part of the Gouvernement in this field. This circular's main object is to emphasize the necessity to carry out some checks, especially on level crossings, structures, tracks, operation and maintenance rules.

But this text is very imperfect (e.g, it does not deal with rolling stocks) and it refers to the Decree nr 730 of 22 March 1942 which soon will be replaced, as far as the safety sector is concerned, by a first decree dealing with safety on the national railway network and by a second decree on the safety of guided public transport of passengers.

Article 30 of this second draft decree provides that it does not apply to tourist and historic railways and that safety requirements with which these railways have to comply will be set by the Minister in charge of Transport.

On these grounds, a draft order on safety of tourist and historic railways running outside of the national railway network is here and now under preparation and it should be published before the end of 2001. This order will be completed by an enforcement circular and a set of rules and maintenance principles of railway infrastructure for those local administrative units and associations who organize tourist railway runnings.

## How Regulation Affect Heritage Railways in the UK

FEDECRAIL CONFERENCE, TORINO, APRIL 27/28th.

"How Regulations have Affected Heritage Railways in the UK".

(a) The Health and Safety at Work Act of 1974. This legislation has now been with us for a long time and its provisions are widely understood and accepted. The requirements of this Act apply to Heritage Railways as much as to those forming part of the National System, particularly with regard to having a "Duty of Care" to employees, volunteers passengers and and visitors, and also as "Occupiers of Premises".

Many of the Safety Regulations covering railways were made under the provisions of this Act and these will be dealt with separately. As originally drafted some of these Regulations could have caused serious problems for many Heritage Railways, but as a result of representations made at a consultative stage some of these problems were overcome.

Whilst the requirements of the Health and Safety at Work Act have now become part of the every day management of Heritage Railways there is no doubt that much extra work has been created as a result of the Act and the various Regulations arising therefrom.

(b) The Railways Act, 1983. Whilst this legislation was primarily concerned with the privatisation of British Rail it did have implications for Heritage Railways as all railway operators in the UK are required to have a "Licence to Operate" or an exemption therefrom. As a result of representations the legislation contained an exemption arrangement which meant that those Heritage lines in operation prior to April 1st, 1984 were not required to obtain a licence, but those railways who started running after this date have been required to apply to The Rail Regulator for an exemption from the need to obtain such a licence. The granting of such exemptions has been a fairly easy process provided that the railway concerned had the necessary legal authority for their line - a Transport and Works Order in England and Wales, or a Light Railway Order in Scotland. Up to now the relationship between our Rail Regulator and Heritage Railways has been what might be described as "satisfactory at arms length" but there are signs that the Regulator is beginning to take more interest in our members - especially those involved in so called "commercial" operations.

(c) The Transport and Works Act of 1992. This affected Heritage Railways in three main areas:

1. For new undertakings - the need to obtain statutory authority to construct and operate a railway. This is achieved by a Transport & Works Order in England & Wales, or by a Light Railway Order in Scotland. The requirements in respect of obtaining a Transport and Works Order are both expensive and time consuming and it involves the submission of an Environmental Assessment relating to the impact of the railway and its operation.

2. It gave the Secretary of State powers to require railway operators to implement a minimum public liability insurance cover.

3. It requires the management of ALL railways to implement a system to ensure that staff AND VOLUNTEERS are free from any effect of alcohol and or drugs before they commence duty.

Another part of this legislation gives the Secretary of State powers with regard to the improvement or provision of tunnels, bridges and crossings - including the provision of barriers and signs.

Continued....

(d). The Approval of Works, Plant and Equipment Regulations, 1986. These mainly formalised rules and practices which had been in existence for many years - mainly that a railway requires the approval of H.M. Railway Inspectorate before any new or extended line is brought in to use and it also requires that the same approval be obtained for any major alteration to existing layouts, level crossings and signalling. In general terms the long standing aspects of this legislation has not caused undue problems for Heritage Railways who normally have enjoyed good and understanding relationships with Inspectors.

This legislation did however give new powers to the Inspectorate in relation to the approval of design and inspection of new locomotives and rolling stock and also for major rebuilds - especially with regard to coaches. In giving approval to new passenger vehicles the Inspectorate have to refer to separate Regulations which cover accessibility by disabled passengers. It has to be said that this part of these Regulations have caused some problems - mainly to narrow gauge railways where new passenger vehicles have been introduced.

(e). The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations of 1996 (commonly known as RIDDOR) replaced previous Regulations concerning the reporting of accidents on railways and they apply to Heritage Railways as well as to the national system. Forms are available for the reporting of accidents and these Regulations do not appear to cause undue problems.

(f). The Railways (Safety Critical Work) Regulations, 1994. These aim to ensure that staff directly involved in the operation and maintenance of a railway are fit and competent to undertake the work involved. [ Job descriptions will be amplified during the presentation] and managements are required to keep appropriate records. There is a view which argues that these Regulations cannot legally be applied to volunteers but I do not propose to become involved in this argument. Suffice it to say that HRA has always recommended that Heritage Railways should observe the "spirit of the law" and apply the Regulations to both paid staff and volunteers. HRA were represented on an HSE Working Group which prepared a definitive list of Safety Critical Work functions and we were able to argue for and obtain a separate and simplified list for Heritage Railways.

(g). The Carriage of Dangerous Goods By Rail Regulations, 1994. Of little concern to member railways. They would only apply if a Heritage Railway stores and moves fuel oil in rail tank wagons.

(h). The Level Crossing Regulations, 1997. These Regulations (and the Level Crossing Act of 1988 which these more recent Regulations partly amend) apply to all railways including those Heritage Railways which cross a public road on the level. In some cases the requirements of this set of legislation has required some heritage lines to install more complicated and expensive equipment than they originally envisaged.

Continued.....



(f). The Railway Safety (Miscellaneous Provisions) Regulations, 1997. These deal with matters relating to Unauthorised Access to the Railway, Means of Communication on Trains, Measures to Prevent Collisions and Derailments, Brakes and Accidents to Person at Work from Moving Vehicles. In draft form these Regulations presented some very real problems for Heritage Railways; in fact we had to wonder if the persons drafting them had any real knowledge of railways - our Chairman in fact suggested (in a letter to the HSE) that they had been drafted by a Civil Servant whose knowledge of railways was confined to the model layout in his attic!

Strong representations were made by HRA on behalf of its members with the result that some amendments were made which made the published Regulations less onerous than they could have been.

(g). The Railway (Safety Case) Regulations, 2000. This one has been left until last as it is currently causing HRA some problems. These Regulations require a train or station operator, infrastructure owner (a Heritage Railway is very often all three) and railway contractors to prepare a Safety Case covering all aspects of their activities. The original Regulations (dated 1994) caused few problems as the majority of Heritage Railways, having submitted a Risk Assessment, were able to obtain an exemption from having a full Safety Case. Some of the larger railways, particularly those with a track connection with Railtrack, did however opt to go for a full Safety Case.

However, whilst the new Regulations still contain a clause allowing exemptions, the requirements for obtaining such an exemption in the future look as though they will be much more stringent than they have been. They will, if granted, be subject to a specific period of time, and, as the Regulations were published, require assessment by an independent person or organisation (expensive). However, we have verbal advice that Heritage Railways will be exempt from this particular requirement. Preparation of a full Safety Case is both time consuming and expensive and HRA is engaged in ongoing discussions with HSE regarding these Regulations.

That really ends the summary of the main safety legislation affecting Heritage Railways - there are of course a host of others (eg. pollution, the environment, fire precautions, food, gas, employment and workshops/machinery) which Managers have to understand, implement and audit, but these are not part of today's discussion.

Just a brief word about charges. In 1995 the Government decided that the HSE should start charging the railway industry for the services (inspections and assessments etc) of the Railway Inspectorate and a proposed scale of charges was published. Whilst the scale of these charges probably amounted to petty cash for those within the national network, they presented a very serious financial implication for Heritage Railways - so much so that HRA made very strong representations to Government at a high level. The pleasing result was that HSE were told that the charges were not to be applied to those Heritage lines which operated at a speed of 25 mph or less - which is of course the majority. However, Heritage Railways which test trains and PW equipment for builders or contractors have now been told that as these activities constitute a special operation (sometimes with speeds in excess of 25 mph) they will have to pay any inspection or assessment charges directly related to such activities. Railways should however be able to recoup any such charges from the customer.

Continued.....

4.

**CONCLUSION.** Much of the recent legislation relating to railway safety in the UK has come into force as a result of the privatisation of British Rail, but in general terms it was made applicable to all railway operations with the exception of minimum gauge lines in pleasure parks etc. Whilst any legislation aimed at improving rail safety is to be welcomed it is clear that the smaller heritage lines were "caught in the same net" as the larger organisations forming part of the national system so HRA and its predecessors were well able to argue, with some degree of success, for some exemptions on the grounds of slower speeds and less intensive operations etc. In addition, Heritage Railways tend to have all their stations staffed during operating hours so someone is usually available to oversee the safety of passengers.

Nevertheless, there is no doubt that these various Regulations have imposed a much greater workload on Directors (many of whom are volunteers) and Managers all of whom now have to bear a serious responsibility for the safety of staff, volunteers, passengers and visitors.

Some of the more recent legislation has recognised the special position of Heritage Railways, but we are also aware of a changing attitude from the Inspectorate towards heritage operations. We therefore need to keep constant watch and be prepared to "do battle" with legislators (British and European) and others whenever we feel it necessary to do so in order to protect the interests of our members. As with the rest of the UK rail industry we await with interest the publication of the "Cullen Report" which is due to be published later this year and is likely to propose radical changes to the existing arrangements regarding regulation, inspection, assessment and approval and also the procedure for the investigation of accidents. Watch this space!

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D. Woodhouse, Heritage Railway Association, April, 2001.

## **Developing European railways - The Commission's proposal on railway safety**

### **Background**

Since many years the Commission has worked towards a modernisation and revitalisation of the Community's railways. The policy is being pursued through three more specific objectives: restructuring to develop competition and new markets in train operation, aiming at the creation of a single market for rail transport services; improvement of interoperability by technical and operational harmonisation of the national networks; and, creation of a single market for railway equipment.

As a consequence of these EU policies and associated national policies the European railway industry is now moving into a new era, very different from the previous world of each member state's railway being dominated by a single, unified nationalised railway industry. Safety regulation has been only in the background of these developments. The different directives deal with aspects of safety, although none of them explicitly tries to cover the whole area.

### **The situation today**

In Directive 91/440/EEC, on the development of the Community's railways, the member states are entrusted with the responsibility to ensure safety on their national networks. With Directive 95/18/EC, on the licensing of railway undertakings, an EU license is introduced and the requirements for such a license are laid down. In Directive 95/19/EC, on the allocation of railway infrastructure capacity and the charging of infrastructure fees, the licensed railway undertakings are obliged to comply with regulations under national law, laying down technical, operational and safety requirements in order to obtain a safety certificate.

### **The infrastructure package**

In 1998, the Commission proposed amendments to the above-mentioned directives, trying to promote further opening of the rail transport market by introducing open access, further separation of functions (i.e. especially between transport operations and infrastructure management) and the establishing of regulatory bodies in the member states.

On 15 March 2001 the new Directives, 2001/12, 2001/13 and 2001/14, entered into force after a long decision-making process. The most noticeable change, from a safety point of view, is that the licensing regime will be extended to most railway undertakings in the member states. The obligation to obtain a safety certificate will still be linked to the license, thus expanding substantially also the number of such certificates. The regulatory body established under Directive 2001/14 will act as appeal body for decisions taken by infrastructure managers concerning safety certificate and enforcement and monitoring of the safety standards and rules.

### **Interoperability**

In parallel to these initiatives the Commission has introduced legislation on technical and operational harmonisation of the rail networks. Directive 96/48/EC, on the interoperability of the trans-European high-speed rail system, creates a framework for adopting common European technical specifications for interoperability (TSI) and the assessment of conformity with the specifications (and the essential requirements, e.g. safety requirements) by notified bodies. Under the directive the member states are obliged to authorise the placing into service of the subsystems, e.g. new infrastructure, rolling stock and



signalling. Actors on the railway market that introduce new equipment must draw up an EC declaration of verification to assure compliance with, among others, the safety requirements.

A directive on the interoperability of the trans-European conventional rail system is now adopted and will enter into force very soon. This directive is structured in a similar way as the above-mentioned high-speed directive. Of special interest from a safety point of view is the obligation of the member states to check, at the placing in service and at regular intervals thereafter, that the subsystems of the conventional rail system are operated and maintained in accordance with the essential requirements.

### **A second railway package**

The Commission's initiative to bring forward safety legislation on European level aims therefore at bringing the safety regulation and safety management structure of the European railways in compliance with the present development of structural change. The safety directive and other safety proposals will be presented this autumn in a package with further measures to open the market for rail transport services and to improve the quality of rail freight.

Within the safety initiative there will most likely be five different legislative proposals:

- a directive on the regulation of safety and investigation of accidents;
- a regulation establishing a European rail agency for interoperability and safety;
- amendments to the high-speed interoperability directive, bringing it in line with the recently adopted directive for conventional rail interoperability and the safety directive;
- amendments to the conventional rail interoperability directive, extending the scope to the whole network;
- amendments to Directive 2001/14, moving the Article on safety certificates to the new directive.

### **The safety directive**

The directive on safety regulation and investigation of accidents will provide the necessary regulatory framework to continue the policy pursued by the Commission to revitalise the railways, considering that safety requirements represent an important barrier for new entrants in the rail transport market.

The directive will also establish the necessary links with provisions given by the directives on interoperability for high-speed and conventional rail, pointing out the bodies responsible for authorisation of placing into service of the different subsystems. The main provisions will be:

- development of common safety targets and common safety methods for the European rail system;
- definition of main elements of safety management systems that are to be applied by infrastructure managers and railway undertakings;
- national safety regulation during a transitional period, ensuring transparency and equal treatment;
- further development and harmonisation of safety certificate requirements;
- establishment of national bodies for regulation and supervision of railway safety;
- mandatory investigation of serious accidents and incidents by independent bodies;
- establishing a regulatory Committee to harmonise safety regulation, inspection methods, accident investigation and requirements for safety certificates.

Through provisions of the directive common registers for licenses, safety certificates, investigation reports and safety recommendations will be kept by the Commission or the European Rail Agency. Safety performance indicators will be made available to enable monitoring of the development of railway safety on the European level as well as in the member states.

The proposed directive will have impact on the railway structure in all member states. For infrastructure managers remaining safety regulatory functions will be transferred to Government bodies. Regular inspections must be carried out by the supervisory body, thus monitoring the safety performance of



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infrastructure managers and railway undertakings. An independent body will be responsible for investigation of serious accidents and incidents.

### **A European Railway Agency**

With the rapid development of the technical work on future interoperability of the European network and with the introduction of common safety principles the need for coordination work on the European level is evident. This is mainly technical work that not should be accomplished by the European Commission. Our Directorate General is therefore discussing the preparation of a regulation, establishing a European Rail Agency. However, many questions on the structure, financing and detailed tasks still remain to be answered.

Anders Lundström  
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Unit for railway policy and combined transport