

**SAFETY REGULATIONS AND  
STANDARDS FOR  
EUROPEAN RAILWAYS,**

**Final Report: Volume V  
Appendices 6 and 7**

**A Report for DG Energy and Transport**

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**APPENDIX 6. CASE STUDY QUESTIONNAIRES**

### Case Study A: Train Services

Please complete this Questionnaire for each of the train services examined.

#### Description of Train Service:

**Table A1**

Type: e.g. Freight, Passenger, or both	
Origin: Town, Member State	
Destination: Town, Member State	
Approximate frequency: e.g. once per week; four times per hour	
Train type: e.g. locomotive-hauled; multiple units; permanently-coupled trainset; wagon-load	
Operating company:	

#### Additional descriptive information for cross-border services:

**Table A2**

List the borders between EU Member States (and, if applicable, other countries) which the train service crosses.	
1	
2	

**Table A3**

Border Please use reference number from Table 2 above.	<i>Ref. No:</i>	<i>Ref. No:</i>
Does train crew change at the border?	<i>Yes/No</i>	<i>Yes/No</i>
Does traction change at the border?	<i>Yes/No</i>	<i>Yes/No</i>
How long does it take to cross? (From line speed on one side to line speed on the other, including all border formalities).		
Identify main technical issues raised by this cross-border operation e.g. multiple signalling systems.		

**Additional descriptive information for new services:****Table A4**

Start date of service: e.g. 1997.	
Identify any novel technical features of the service (including features which were accepted elsewhere but were new to the Member State concerned).	

**Safety Regulation Issues: Cross-border services****Multiple safety regulation regimes****Table A5**

List the safety regulation regimes applicable to the service (e.g. name of country, or special regime such as "Channel Tunnel").	
A	
B	
C	

In Table A6 below/overleaf, we wish to compare safety regulation regimes. From practical experience with cross-border services, such comparisons seem likely to emerge from two different scenarios:

- *Eurostar scenario:* A new operation, with new equipment. In this situation, the designers are likely to become aware both of demands made by Regime A which are not made by Regime B; and vice-versa, the demands made by B but not by A. This may be termed *bilateral comparison*.
- *Established national service scenario:* Here the equipment is already accepted and working under Regime A, before the cross-border service has been proposed. In this situation, the designers of the new service will become aware of the additional demands made by Regime B, but may well not become aware of the demands made by A, their "home regime", which are not made by B. This may be termed *unilateral comparison*.

In Table A6, please make the bilateral comparison where possible.

If the service travels through more than two regimes, please complete similar tables comparing the third regime with Regime A and/or Regime B.

**Table A6**

<b>Regime B relative to Regime A</b>	
--------------------------------------	--

Please use reference letters from Table A5.	
Did Regime B impose additional requirements, relative to Regime A? “Requirements” in this context includes additional acceptance/certification procedures, as well as additional engineering or operational features. “Requirements” in this context refers solely to requirements imposed by the safety regulatory regime. Requirements which would exist in the absence of a safety regulatory regime (e.g. resulting from different electric traction power systems) should not be included. There may be instances where a requirement is partly for safety reasons and partly for other reasons, and the safety element cannot be separately identified: in such instances, take account of the requirement and note below that it exists partly for non-safety reasons.	Yes/No
Please give example(s).	
Did the additional requirements (if any) enhance safety?	Yes/No
Please give example(s).	
Did the additional requirements (if any) add to cost? (in any form e.g. capital cost, running cost, loss of revenue)	Yes/No
Please give example(s).	
Was the additional safety benefit (if any) justifiable, relative to the additional cost?	Yes/No
Please indicate the basis for this conclusion.	

<b>Regime A relative to Regime B</b> This section should be completed only where the information is readily available (bilateral comparison).	
Did Regime A impose additional requirements, relative to Regime B? (See note above in first section of this Table).	Yes/No
Please give example(s).	
Did the additional requirements (if any) enhance safety?	Yes/No
Please give example(s).	
Did the additional requirements (if any) add to cost? (in any form e.g. capital cost, running cost, loss of revenue)	Yes/No
Please give example(s).	
Was the additional safety benefit (if any) justifiable, relative to the additional cost?	Yes/No
Please indicate the basis for this conclusion.	

### Border crossings

**Table A7**

Which (if any) of the following common operating difficulties with railway border crossings are an important concern with the service in question? Complete a separate table for each border.
---

Border Reference Number Use reference numbers from Table A2 above.		
Difficulty		Important ?
1.	Effort devoted to dealing with documentation/administrative checks	
2.	Differing attitudes to paperwork and excessive quantities of paperwork	
3.	Poor co-ordination between national timetables	
4.	Problems caused by inflexible staffing/working arrangements	
5.	Poor provision of locomotives and crews for delayed trains	
6.	Problems in obtaining paths for delayed trains	
7.	Poorly designed facilities and layouts	
8.	Poor interface between the IT systems of neighbouring railways	
9.	Certain railways' IT systems appear to be difficult to use	
10.	Language difficulties	
11.	Inefficient deployment of assets	
12.	Delays to trains carrying dangerous goods	
13.	Customer delivery schedules causing trains to wait	
14.	Increased border times for wagonload as compared to intermodal and company freight trains	
<i>(List from study by consultants Symonds Travers Morgan on Integration of National Conventional Rail Systems, for DG VII, May 1998)</i>		

**Table A8**

Please describe briefly any other significant difficulties with the border crossing arrangements (whether or not involving safety).	
15.	
16.	

**Table A9**

<p>Please note which (if any) of the difficulties, identified in Tables A8 or A9 as significant, result from a safety regulation regime. Use the reference numbers from Tables A7 and A8 above.</p>	
Difficulty	<p>How does the problem result from a safety regulation regime? (e.g. national driver licensing regime requires fluency in written language, hence effectively only nationals of that Member State qualify, hence train crew must change at border).</p>
Ref. No:	
Ref. No:	

**Table A10**

Border Reference Number (from Table A2)		
In cases where train crew change at the border, please explain:		
The reason		
The cost		
The safety benefit (or safety cost, e.g. conflicting train movements which would not take place if train crew did not change)		

**Table A11**

Border Reference Number (from Table A2)		
In cases where traction changes at the border, please explain:		
The reason		
The cost		
The safety benefit (or cost)		

### Safety Regulation Issues: New Services

If the new service is also cross-border, please answer this New Services section of the Questionnaire for each of the safety regulation regimes.

**Table A12**

Please list any Novel Element(s) which might present a material safety hazard (e.g. train operating company has not operated trains under the relevant safety regime; increased traffic on the route; equipment not previously used on the railway).	
1.	
2.	
3.	
4.	

**Table A13**

Please list the Regulatory Requirement(s)/Process(es) applied to the new service before it was entitled to start operating commercially. For this purpose, please describe the regulatory requirements in terms such as "Design standards laid down by [the infrastructure manager]" rather than listing each individual regulation.	
1.	
2.	
3.	

**Table A14**

Please indicate how the novel elements map onto the regulatory regime.				
Novel Element Please use reference number from Table A12.	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>
Regulatory Requirement(s)/Process(es) applied to the particular novel element. Please use reference number(s) from Table A13	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>
	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>

Table A15

This addresses the transparency of the processes for introducing new services, and the burden they place on applicants.				
Regulatory Requirement(s)/Process(es) Please use reference number from Table A13.	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>
Compliance criterion (e.g. installing specified equipment; providing a design which attains a specified minimum time between failures; convincing a particular committee of the company's ability to manage the service).				
Was an accurate description of the criterion available beforehand?	<i>Yes/No</i>	<i>Yes/No</i>	<i>Yes/No</i>	<i>Yes/No</i>
Was the description easily obtained?	<i>Yes/No</i>	<i>Yes/No</i>	<i>Yes/No</i>	<i>Yes/No</i>
Please give a brief description of the criterion (if available)				
Demonstrating compliance Note the difference between complying with a criterion, and <i>demonstrating</i> that compliance.				
How costly was demonstrating compliance?				
How time-consuming was demonstrating compliance?				

## Case Study B: Design and acceptance of new traction

### Criteria for selection

The criterion for selection should be that the traction (locomotive, or multiple unit, or permanently-coupled trainset) and its introduction appears to offer a good illustration of the issues involved in railway safety regulation. This need not necessarily be a negative illustration, of costs and problems: it could be chosen because it illustrates good solutions to the problems. It would be particularly helpful to choose examples which illustrate the issues associated with multiple safety regulation regimes.

The organisations mainly concerned with the introduction of the chosen novel traction (e.g. manufacturer, owner) should agree to co-operate in the Case Study. The traction chosen for this Case Study is described below as “the Case Study traction”.

### Description

**Table B1**

Please describe the Case Study traction	
Type (locomotive / multiple unit / permanently-coupled trainset)	
Manufacturer	
Name or reference by which generally known	
Place of design	
Place(s) of manufacture	
Intended service type (e.g. freight; short-distance high-frequency passenger)	

**Table B2**

Please describe the introduction of the Case Study traction to your mainline system	
Date of investment approval:	
Date of start of service:	
Owner:	
Operator:	
Service (route, any special features):	

**Design****Table B3**

Please describe the significant novel element(s) in the design of the Case Study traction, classifying each under the headings below.	
Type of novelty	Description of novel element(s)
Introduction of technology new to railways in general ("leading edge").	
Adoption of technology established in this application by this supplier in another Member State ("importing").	
Extension of technology, which is established in the Member State in other applications or with other suppliers, to this particular application ("state of the art").	
No technical novelty: the changes from designs used in (an)other Member State(s) were to meet national safety requirements.	
No technical novelty: the changes from previous designs were to meet particular local needs or constraints e.g. gauge, or for commercial reasons.	
Other (please specify)	

(More than one of the above might apply.)

**Table B4**

Please describe how the safety regulation regime affected the design outcome for the Case Study traction.	
Safety? (Please indicate the nature and scale of the effect.)	
Cost? (Take account of both capital and revenue costs, and including any effects on performance, reliability, etc.)	

**Table B5**

Suppose there had been no externally-imposed safety requirements, other than a general obligation to reduce the risk of personal harm, to the extent this can be done without incurring excessive cost. What would have been the significant differences to:	
The design? (Please indicate the significant changes)	
Safety performance? (Please indicate the nature and scale of the effect)	
Cost? (Take account of both capital and revenue costs, and including any effects on performance, reliability, etc)	

**Table B5a**

What are the main changes to the regulatory requirements which would be needed in order to reduce their cost (including any effects on performance) without compromising safety?	
Design change (Please take each of the changes identified in Table B5)	Change in regulatory requirement

**Acceptance**

This section focuses on the distinction between complying with safety requirements, and demonstrating compliance to the satisfaction of an external body. The process of demonstrating compliance to an external body, and obtaining its confirmation that it accepts the equipment is compliant, is described below as “acceptance and certification” (A & C).

**Table B6**

Please list the A & C processes to which the Case Study traction was subject.		
1	Title of A & C process	
	Body responsible for A & C	
2	Title of A & C process	
	Body responsible for A & C	

**Table B7**

Please describe the function(s) of the A & C processes to which the Case Study traction was subject			
A & C process Use Reference Number from Table B6.	<i>Ref. No.</i>	<i>Ref. No.</i>	<i>Ref. No.</i>
To confirm compliance with determinate standards? e.g. installation of specified equipment.	<i>Yes/No</i>	<i>Yes/No</i>	<i>Yes/No</i>
To show that a performance standard will be achieved? e.g. for the mean time between failure to be more than a specified value.	<i>Yes/No</i>	<i>Yes/No</i>	<i>Yes/No</i>
To consider the safety issues in an area where standards have not been laid down? e.g. because novel technical issues are involved.	<i>Yes/No</i>	<i>Yes/No</i>	<i>Yes/No</i>
To ensure compatibility with local conditions? e.g. platform curvature.	<i>Yes/No</i>	<i>Yes/No</i>	<i>Yes/No</i>
Other? (please specify)			

**Table B8**

This evaluates the transparency of the A & C processes, and the burden they place on applicants				
A & C process Use Reference Number from Table B6	Ref. No.	Ref. No.	Ref. No.	Ref. No.
Compliance criterion (e.g. installing specified equipment; providing a design which attains a specified minimum time between failures; convincing a particular committee of the company's ability to manage the service).				
Was an accurate description of the criterion available beforehand?	Yes/No	Yes/No	Yes/No	Yes/No
Was the description easily obtained?	Yes/No	Yes/No	Yes/No	Yes/No
Please give a brief description of the criterion (if available)				
Demonstrating compliance Note the difference between complying with a criterion, and <i>demonstrating</i> that compliance				
How costly was demonstrating compliance?				
How time-consuming was demonstrating compliance?				

**Possible improvements**

Please describe any suggestions you may have to improve the Acceptance & Certification process

- To reduce uncertainty about the compliance criterion
- To reduce the cost of the process
- To reduce the time taken by the process
- To improve the evaluation of safety issues by the process.

Could the process be improved by taking advantage of other safety regulatory processes e.g. approvals granted in other Member States? Please give example(s).

**Value Added**

In your view, to what extent does the process for demonstrating compliance add value to the requirements themselves?

In other words, suppose the standards and other safety requirements remained as they are, but it was left to the supplier/owner/operator to decide when to bring the new traction into operation: would safety suffer? if so, in what way?

Assume that the arrangements for auditing compliance after operation has started, and applying sanctions in the event of any detected violation, remain unchanged.

### Multiple regimes

Please complete Tables B9 and B10 if the Case Study traction was subject to more than one regime.

**Table B9**

List the safety regulation regimes applicable (e.g. name of country, or special regime such as "Channel Tunnel").	
A	
B	
C	

In Table B10 below/overleaf, we wish to compare safety regulation regimes. From practical experience with cross-border services, such comparisons seem likely to emerge from two different scenarios:

- *Eurostar scenario:* A new operation, with new equipment. In this situation, the designers are likely to become aware both of demands made by Regime A which are not made by Regime B; and vice-versa, the demands made by B but not by A. This may be termed *bilateral comparison*.
- *Established national service scenario:* Here the equipment is already accepted and working under Regime A, before the cross-border service has been proposed. In this situation, the designers of the new service will become aware of the additional demands made by Regime B, but may well not become aware of the demands made by A, their "home regime", which are not made by B. This may be termed *unilateral comparison*.

In Table B10, please make the bilateral comparison where possible.

If the traction was procured for use in more than two regimes, please complete similar tables comparing the third regime with Regime A and/or Regime B.

Table B10

<b>Regime B relative to Regime A</b>	
Please use reference letters from Table B9	
Did Regime B impose additional requirements, relative to Regime A? "Requirements" in this context includes additional acceptance/certification procedures, as well as additional engineering or operational features. "Requirements" in this context refers solely to requirements imposed by the safety regulatory regime. Requirements which would exist in the absence of a safety regulatory regime (eg resulting from different electric traction power systems) should not be included. There may be instances where a requirement is partly for safety reasons and partly for other reasons, and the safety element cannot be separately identified: in such instances, take account of the requirement and note below that it exists partly for non-safety reasons.	Yes/No
Please give example(s)	
Did the additional requirements (if any) enhance safety?	Yes/No
Please give example(s)	
Did the additional requirements (if any) add to cost? (in any form e.g. capital cost, running cost, loss of revenue)	Yes/No
Please give example(s)	
Was the additional safety benefit (if any) justifiable, relative to the additional cost?	Yes/No
Please indicate the basis for this conclusion	
<b>Regime A relative to Regime B</b>	
This section should be completed only where the information is readily available (bilateral comparison).	
Did Regime A impose additional requirements, relative to Regime B? (See note above in first section of this Table).	Yes/No
Please give example(s)	
Did the additional requirements (if any) enhance safety?	Yes/No
Please give example(s)	
Did the additional requirements (if any) add to cost? (in any form e.g. capital cost, running cost, loss of revenue)	Yes/No
Please give example(s)	
Was the additional safety benefit (if any) justifiable, relative to the additional cost?	Yes/No
Please indicate the basis for this conclusion	

## **Case Study C: Law and Regulations in Practice**

### **- for work on the track while normal train operations continue**

Note: Two sorts of example are given in this Questionnaire:

- 1) Examples that illustrate the style of answer which is expected. These are hypothetical, and specifically are not intended to represent the GB situation. They are in *italic* type.
- 2) Examples which provide a checklist of possible answers. They are not exhaustive, and should be used only if appropriate. They are in ***bold italic*** type.

#### **Description of the topic being studied**

**“Work”** means work by engineering or operating staff; by staff directly employed by infrastructure manager or train operator, or staff employed by contractors; in planned operations or unplanned circumstances.

**“Work on the track”** means work on or adjacent to running lines, including work on structures above or adjacent to the running line. Where a physical barrier separates the workers from the track(s) in use, this should be regarded as eliminating the risk only when the barrier is continuous and impenetrable.

**“Normal train operations”** excludes train movements solely in connection with the work being done on the track, but includes untimetabled freight trains and other non-regular movements.

#### **Assumptions made in compiling the questionnaire:**

1. All railways permit such work in some circumstances, while forbidding it in others. For example it may be forbidden when train speeds reach or exceed 160 km/hr, except in emergency.
2. There is risk in situations where such work is permitted, which would not exist if it was prohibited. The risk is no doubt controlled, and is no doubt low. But it exists.
3. The precise content of the regulations defining where such work is permitted has varied over time, becoming increasingly stringent. Alterations to the regulations frequently follow serious accidents.

## 1. THE CURRENT RULES AND LAW GOVERNING THE TOPIC

### 1.1 Describe the present operational rules governing work on the track while normal train operations continue.

**These should be mandatory rules enforceable by the regulatory authorities, ultimately in the courts, not contractual obligations or working practices, should these differ (see 1.5 below). They should be specific to this activity.**

*e.g.*

#### Illustration 1:

*Every work site on the mainline will be separated by continuous and impenetrable barriers from any lines on which normal train operations continue, unless:*

- *line speed is less than 130 km/hr, and*
- *the number of workers does not exceed four, and*
- *an individual is allocated, as their only task, acting as lookout, for each direction from which trains may approach,*

*or an emergency arises which makes it impracticable to delimit the work site.*

#### Illustration 2:

*Every person who may need to go onto the track while train operations continue shall be trained and competent in regard to track safety.*

### 1.2 Specify the status of the operational rules at 1.1 above :

*e.g.*

- *specified in law (i.e. primary legislation from the legislature)*
- *regulations with legal force (i.e. secondary legislation, under delegated powers)*

### 1.3 What organisation is responsible for specifying the above operational rules?

*e.g.*

- *Legislature?*
- *specialist railway safety government agency?*
- *general workplace safety government agency?*
- *the infrastructure manager?*
- *the organisation conducting the work?*
- *several? (state which)*

### 1.4 Set out the relevant hierarchy of requirements, starting with the particular rules, and ending with the general legal obligation on companies to ensure safety

*e.g. The current rules, summarised above, are contained within a Standard laid down by the Infrastructure Manager. The Infrastructure Manager lays down Standards on such subjects by virtue of its obligations under its Licence from the Transport Ministry. The Transport Ministry Licence provides that the Infrastructure Manager will take effective steps to secure the safety of all whose employment requires them to work on or about the track. The general Health and Safety law provides that business enterprises will prevent personal harm arising from their operations. The general principles of application of such laws interpret such obligations in terms of “proportionality” i.e. the concept that the end being attained must not require disproportionate means.*

1.5 Are there rules governing work on the track, which are not mandatory, and which differ from (or add to) the mandatory rules at 1.1 above? If so, please describe them.

*e.g.*

- *non-mandatory codes of practice specified by governmental organisation (not legally enforceable).*
- *railway business operating rules.*

1.6 Where the higher level laws or regulations (general duties) are aspirational (i.e. state without explicit qualification an objective which cannot be attained literally, e.g. “employers shall ensure the safety of their employees”), do governmental regulatory officials give expression to these requirements in terms of specific and rigidly enforceable operational rules? If not, is the principle of proportionality applied to the operational rules?

1.7 Who is held responsible for avoiding accidents in this area?

- *the infrastructure manager?*
- *the business conducting the work or employing the person (e.g. the track maintenance company or the train operating company employing the driver)?*
- *others?*
- *several? (state which)*

## 2 ENFORCEMENT OF THE RULES

2.1 Who is responsible for enforcement of the rules?

(For this purpose “enforcement” includes investigation of apparent violations of legal requirements, preparation of cases, initiation of processes to impose sanctions including bringing cases to court, and imposing sanctions. It excludes an organisation applying the rules and checking on its own compliance.)

*e.g.*

- *specialist railway safety governmental agency?*
- *general workplace safety governmental agency?*
- *the infrastructure manager?*
- *several? (state which)*

**If rules are specified by the infrastructure business are they enforceable by governmental regulatory officials?**

2.2 Do those responsible for enforcement apply the legally mandatory rules flexibly, so as to allow for the economic or operational needs of the industry? If so, describe how they do this.

2.3 What sanctions are normally applied to those breaking the rules and by whom?

*e.g. warnings, suspensions of operations, prosecutions, fines, termination of contracts.*

### 3 COMPLIANCE WITH THE RULES

#### 3.1 Does the railway set out to be 100% compliant with the rules?

**(It is recognised that any rules are liable not to be observed occasionally, because of individual ignorance or stress. Our concern here is with systematic non-compliance, of which others are aware.)**

*e.g. Certain types of non-compliance are condoned.*

#### 3.2 If less than 100% compliance is in some circumstances accepted, outline the nature and extent of this non-compliance.

*e.g.*

1. *The accepted practice involves regarding unplanned events which involve someone working trackside for a short time (e.g. a driver uses a signal post telephone; a technician visits an item of equipment to assess an apparent fault) as "an emergency" within the meaning of the Standard.*

*Also, it is accepted that individuals working alone act as their own lookouts.*

*These interpretations involve an artificial interpretation of the word "emergency", and might not sustain legal challenge.*

2. *The rules do not provide for automated trackworker warning systems. Where these are used, dedicated lookout staff are not provided.*

3. *It is known that continuous impenetrable barriers are rarely erected for work sites of duration less than 24 hours.*

#### 3.3 Explain how it is that non-compliance persists.

*e.g.*

1. *Railway Inspectorate (RI) accept these practices as reasonable in all the circumstances.*

2. *It is recognised that the rules are obsolete in this respect.*

3. *Inspectors do not target such work sites. If non-compliance is revealed, sanctions follow, but many local managers regard this as a price worth paying.*

### 4 PAST AND POSSIBLE FUTURE CHANGES TO THE RULES GOVERNING THE TOPIC

#### 4.1 Describe the recent history which led to the present rules.

*e.g. Following a series of fatal accidents to trackworkers in 1994 and 1995, decisions were taken to require more effective barriers and to reduce the speed, below which work without barriers is permitted.*

#### 4.2 Identify ways in which the rules could be marginally more stringent, i.e. could reduce the remaining risk perceptibly.

*e.g. The rules could be made marginally more stringent in the following ways:*

- *The speed limit, below which work without barriers is permitted, could be reduced.*
- *The possibility of a worker having to act as their own lookout could be precluded.*

- Requirements could be placed on the warning arrangements. A time limit could be placed on the use of human lookouts.
- Enforcement could be more intensive.
- A time limit could be placed on the use of signal post telephones, and a programme for their elimination imposed.

**4.3 When the present rules were being drawn up, where these or other marginal changes considered? If so, why were they rejected?**

*e.g. The above changes - or similar ones - were considered. They were rejected essentially because the RI took the view that the changes ultimately decided were as much as the railway could comply with at the time, without excessive reduction in the industry's ability to perform track maintenance and renewal.*

**4.4 Suppose an accident takes place which would have been prevented by marginally more stringent rules.**

4.4.1 Would the enforcement authority prosecute?

*e.g. No, assuming the current rules had been observed.*

4.4.2 Would the courts convict?

*e.g. Not possible to say, since only the RI can bring prosecutions. The question does not arise.*

4.4.3 Would the operator be liable to pay compensation?

*e.g. The courts would be unlikely to find the operator negligent if the current rules had been observed, but this would depend on all the facts of the case.*

**4.5 Suppose an interested party (e.g. regulator, trade union) suggested that the rules should be made marginally more stringent. Would the operator be obliged to:**

4.5.1 accept the proposal?

*e.g. No*

4.5.2 give reasons for rejecting the proposal?

*e.g. The RI is in a position to issue and seek responses to proposals to require more stringent safety measures. The operator is therefore obliged to give reasons for rejecting a proposal from the RI (whether or not couched in formal terms).  
Trade Unions have a right to be consulted, and it is accepted that proper consultation involves giving reasons for not accepting a reasoned proposal to improve safety.*

4.5.3 What would constitute acceptable reasons for rejecting the proposal?

*e.g. The sorts of reason which have proved acceptable in these circumstances are:*

- *the adverse effect on the train service (economic or operational) would be too great;*
- *the technology proposed is unproven and complex;*
- *the proposal would be likely to create additional risk, offsetting its direct safety benefits, by reason of its complexity in circumstances of disrupted train service.*

**4.6 If a Member of Parliament advocated tightening the rules, what would be the outcome?**

*e.g. It depends on the cases made by the various parties, and the public, media and political response. There is generally little political and public interest in this sort of risk.*

## APPENDIX 7. RESPONSES TO TRACK WORKER CASE STUDY

### Foreword

This Appendix records the responses to the Questionnaire for Case Study C, ON Track Worker Safety. As with Appendix 4 this Appendix is a collection of raw material, with little or no editing (as far as confidentiality allowed). An edited summary of the findings of these responses will be found in Appendix 3.

Some sections of the Questionnaire invite judgements or opinions. Those expressed may be attributable to the people approached by the project partner responsible, or may be those of the project partner. No view expressed is attributable to a specific individual or organisation.

Reference may need to be made to the original Questionnaire (in Appendix 6, also in this Volume) to check the numbering of questions. Reference will also be necessary for responses received without the questions fully reproduced. In some responses, because of incompatibilities between different versions of Microsoft Word, the numbering format has partially failed.

The responses are presented in the following order. (No response was received from Sweden.)

<b>FRANCE</b>	<b>PAGE 22</b>
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**SAFETY REGULATIONS AND STANDARDS FOR EUROPEAN RAILWAYS**

**CASE STUDY C**

**FRANCE**

## LAW AND REGULATIONS IN PRACTICE – FOR WORK ON THE TRACK WHILE NORMAL TRAIN SERVICES CONTINUE

Description of the topic being studied

### 1 The current rules and law governing the topic

#### 1.1 Describe the present operational rules governing work on the track while normal train operations continue.

**These should be mandatory rules enforceable by the regulatory authorities, ultimately in the courts, not contractual obligations or working practices, should these differ (see 5. below). They should be specific to this activity.**

All the rules are specified in the 9th chapter, part A (S9A, « *Work on track* »), of the General Safety Regulation (RGS, 11 chapters). The RGS is approved by the Ministry of Transport.

This document describes all the actors/functions involved in the protection of work, all the elementary actions, all the fiche forms (as illustrations).

There is two regimes within SNCF

- prohibition of traffic on the track but traffic on the other track of the line possible
- announcement of train arrival by a specialised agent to workers on the track (when there is no obstacle on the line and the speed of the line is limited,...)

A particular work on the track fall into one regime or the other. The criterion (e.g. what is an obstacle?). are specified in detail in order to reduce the initiative by the agents.

In addition, there is specific measures for catenary.

#### 1.2 Specify the status of the operational rules at 1. above :

*This operational rules are determined by SNCF and officially approved by the Ministry of Transport (DTT) in consultation with the Unions. The documents are included in the general safety regulation (RGS for *règlement général de sécurité*) in the part known as « S9A » (works on tracks).*

**1.3 What organisation is responsible for specifying the above operational rules?**

*The infrastructure manager i.e. SNCF-GI, by delegation from RFF and the ministry of transport..*

**1.4 Set out the relevant hierarchy of requirements, starting with the particular rules, and ending with the general legal obligation on companies to ensure safety**

*SNCF lays down internal documents, called « applied document of the jobs ». This rules are very detailed. They are periodically amended in order to take into account incidents observed in practice. A so called « return of experience » i.e. a feed back, is used to centralise information on incidents. Incidents are generally attributed to a lack of precision of the regulation, internal or approved. The outcome is more stringent regulation, reducing initiative the workers (=human error).*

*First the minor modifications are put internal to SNCF and applied immediately. Periodical review of the S9A (« Work on track »), aims at clarifying the text and including several changes at the same time. They are approved by the Ministry of Transport (DTT).*

*In addition, some complementary rules are laid down in another document for working practices, known as PS 9 (Which is different from S9A)*

*The Infrastructure Manager lays down Standards on such subjects, by virtue of its obligations under the « SNCF specifications », the LOTI (art. 9) and the Law governing Work in general (« Code du travail », art. 231.1.1 and the Decree 01.15.1960).*

**1.5 Are there rules governing work on the track, which are not mandatory, and which differ from (or add to) the mandatory rules at 1. above? If so, please describe them**  
N/A**1.6 Where the higher level laws or regulations (general duties) are aspirational (i.e. state without explicit qualification an objective which cannot be attained literally, e.g. “employers shall ensure the safety of their employees”), do governmental regulatory officials give expression to these requirements in terms of specific and rigidly enforceable operational rules? If not, is the principle of proportionality applied to the operational rules?**

*There is (i) a general obligation, and (ii) specific procedures and rules for work on track. Thus, operational rules are rigid and enforceables. But SNCF specifies local conditions.*

**1.7 Who is held responsible for avoiding accidents in this area?**

*The business conducting the work (e.g. the infrastructure maintenance company, SNCF or Sub-contractor)*

## 2. Enforcement of the rules

### 2.1 Who is responsible for enforcement of the rules?

(For this purpose “enforcement” includes investigation of apparent violations of legal requirements, preparation of cases, initiation of processes to impose sanctions including bringing cases to court, and imposing sanctions. It excludes an organisation applying the rules and checking on its own compliance.)

- *specialised work inspectors from the Ministry of Transport*
- *the hierarchy of the infrastructure manager, SNCF-Infrastructure*
- *the SNCF, with internal auditing by a specialised, independent and newly created department (the audits of safety department)*

### 2.2 Do those responsible for enforcement apply the legally mandatory rules flexibly, so as to allow for the economic or operational needs of the industry?

**If so, describe how they do this.**

*Strict application, no flexibility allowed.*

### 2.3 What sanctions are normally applied to those breaking the rules and by whom?

- *disciplinary sanctions, via hierarchy of SNCF*
- *suspension of operations and termination of contracts with sub-contractors*
- *if the case arises, criminal law*

## 3 Compliance with the rules

### 3.1 Does the railway set out to be 100% compliant with the rules?

**(It is recognised that any rules are liable not to be observed occasionally, because of individual ignorance or stress. Our concern here is with systematic non-compliance, of which others are aware.)**

*Yes*

**If not,**

### 3.2 Outline nature and extent of non-compliance

### 3.3 Explain how it is that non-compliance persists

## 4 Past and possible future changes to the rules governing the topic

#### **4.1 Describe the recent history which led to the present rules**

The two last modifications of S9A have been made in 1993 and 1998. They follow the general process described in section 1.4.

*They are periodically amended in order to take into account incidents observed in practice. A so called « return of experience » i.e. a feed back, is used to centralise information on incidents. Incidents are generally attributed to a lack of precision of the regulation, internal or approved. The outcome is more stringent regulation, reducing initiative the workers (=human error).*

First the minor modifications are put internal to SNCF and applied immediately. Periodical reviews of the S9A (« Work on track »), aim at clarifying the text and including several changes.

*Any proposed rule is debated by specialists and are generally controversial.*

*For instance, at the last modification in 1998, there have been minor modifications of S9A :  
Precision concerning permission to intermediary signals crossing  
New form (number 26) for shunting in protected zones  
New form (number 71) for Motorwagons traffic inside the working site.*

#### **4.2 Identify ways in which the rules could be marginally more stringent, i.e. could reduce the remaining risk perceptibly.**

#### **4.3 When the present rules were being drawn up, where these or other marginal changes considered? If so, why were they rejected?**

We haven't heard about other marginal changes proposed by SNCF.

#### **4.4 Suppose an accident takes place which would have been prevented by marginally more stringent rules**

*In addition to application of rules, ...there exist a principle of prudence and diligence which may lead to criminal prosecutions (see questionnaire Phase I).*

##### **4.4.1 Would the enforcement authority prosecute?**

##### **4.4.2 Would the courts convict?**

##### **4.4.3 Would the operator be liable to pay compensation?**

#### **4.5 Suppose an interested party (e.g. regulator, trade union) suggested that the rules should be made marginally more stringent. Would the operator be obliged to**

**4.5.1 Accept the proposal?**

*A proposal by the trade union is discussed. The ministry of transport has the power to impose decisions. Decisions are discussed. But there is no formal obligation, as in a due process.*

**4.5.2 Give reasons for rejecting the proposal?**

*Yes, because of difficult relations with the trade unions.*

**4.5.3 What would constitute acceptable reasons for rejecting the proposal?**

*Those 3 are good examples of acceptable reasons.*

- *the adverse effect on the train service (economic or operational) would be too great*
- *the technology proposed is unproved and complex*
- *the proposal would be likely to create additional risk, offsetting its direct safety benefits, by reason of its complexity in circumstances of disrupted train service.*

**4.6 If a Member of Parliament advocated tightening the rules, what would be the outcome?**

*There is generally little political and public interest in this sort of risk. Such a debate initiated by politicians would lead to a very general debate concerning the impact of cost cutting and reductions of available means on safety.*

**SAFETY REGULATIONS AND STANDARDS FOR EUROPEAN RAILWAYS**

**CASE STUDY C**

**GERMANY**

**CASE STUDY C; LAW AND REGULATIONS IN PRACTICE**  
**- for work on the track while normal train operations continue**

**1 The current rules and law governing the topic**

**1.1 Describe the present operational rules governing work on the track while normal train operations continue.**

**These should be mandatory rules enforceable by the regulatory authorities, ultimately in the courts, not contractual obligations or working practices, should these differ (see 1.5 below). They should be specific to this activity.**

*The following regulations dealing with the work on track have to be complied to (examples):*

- *Each working site on the track has to be secured by safety guards, if trains pass through the construction area. The safety guards have to fulfil several requirements to demonstrate the qualification for this task.*
- *The safety guards must be equipped with acoustical warning signals, which have to undergo maintenance on a regular basis. The construction workers have to carry out the instructions given by the safety guards without fail.*
- *The working time per shift for track construction sites is limited to a maximum of ten hours, because the transgression of this limit would lead to a decrease in concentration*

**1.2 Specify the status of the operational rules at 1.1 above :**

*Basically there are two different types of regulations:*

a) *VBG 38 a (regulations of the trade co-operative association): Work on the track*

*Those are the legal regulations of the trade co-operative association of economy, in this case from the Department of underground engineering. These requirements have to be fulfilled while working on the track.*

b) *UVV (Accident prevention regulations)*

*Those are the regulations of the Eisenbahnunfallkasse (EUK) , which is the insurance association for all employees of the DB-AG. In general they are only valid when the DB AG is concerned.*

**1.3 What organisation is responsible for specifying the above operational rules?**

a) *It is the responsibility of the trade co-operative association of underground engineering to draw up safety regulations for track construction work. The federal minister of labour has to approve the regulations, before they become valid.*

b) *The UVV are based on an old internal regulation of the DB. Being the trade co-operative association of the DB-AG, the Eisenbahnunfallkasse (EUK) is responsible for the changes. The UVV are being reshaped at the time and are supposed to reappear under a new name. The UVV is no law in contrast to a) , but rather an internal regulation.*

**1.4 Set out the relevant hierarchy of requirements, starting with the particular rules, and ending with the general legal obligation on companies to ensure safety**

*The employer is obliged to do everything that is necessary for the safety of his employees. The employer is a railway infrastructure enterprise, which is, according to the General Railway Act (AEG), liable for the safety of all concerned with track construction works.*

*By degree of the sevens social code of law the bearers of the accident insurance are empowered to establish accident prevention regulations. The sphere of track construction work is the responsibility of the trade co-operative association of underground engineering. The VBG 38 a (work on track construction) contains all essential regulations, which are at any rate legally binding.*

*Additional there is the UVV of the railway accident insurance (EUK), which only apply to employees of the DB-AG. Those regulations are more detailed and for the most part become part of the contract by agreement between the employer DB-AG and the track construction work undertaking. In case of an accident the UVV as well as the VBG-38 a are in effect.*

**1.5 Are there rules governing work on the track, which are not mandatory, and which differ from (or add to) the mandatory rules at 1.1 above? If so, please describe them.**

*If the construction site is outside the jurisdiction of the DB AG, the UVV of the railway accident insurance do not apply at the first instance. But they usually become an additional part of the contract, because the formulation is accurate and this insures more safety for the employer and the employees.*

*The UVV are very detailed and describe all necessary measures completely accurate, while the VBG 38 has a more general character.*

**1.6 Where the higher level laws or regulations (general duties) are aspirational (i.e. state without explicit qualification an objective which cannot be attained literally, e.g. "employers shall ensure the safety of their employees"), do governmental regulatory officials give expression to these requirements in terms of specific and rigidly enforceable operational rules? If not, is the principle of proportionality applied to the operational rules?**

*Basically the more general formulated VBG 38 is applied. But in case of an accident the authorities always verify, if the accident could have been avoided by observing the UVV. It is therefore in principle necessary to heed the UVV on each track construction site.*

**1.7 Who is held responsible for avoiding accidents in this area?**

*Basically the railway infrastructure manager is responsible for the safety of everyone concerned. In case of an accident the search for the guilty party starts at first in this area.*

**2 Enforcement of the rules**

**2.1 Who is responsible for enforcement of the rules?**

**(For this purpose "enforcement" includes investigation of apparent violations of legal requirements, preparation of cases, initiation of processes to impose**

**sanctions including bringing cases to court, and imposing sanctions. It excludes an organisation applying the rules and checking on its own compliance.)**

*If an accident with injury to a person occurs, the prosecutors office assumes the investigation of the incident . The federal border police , as the police of the federal government , is also a participant in the investigation. In case of just material damage the concerned parties for the most part come to a mutual agreement among themselves.*

**If rules are specified by the infrastructure business are they enforceable by governmental regulatory officials?**

*All existing regulations to ensure safety are regarded by every court as acknowledged rules of technology. That means that rules specified by an infrastructure business are enforceable, too.*

**2.2 Do those responsible for enforcement apply the legally mandatory rules flexibly, so as to allow for the economic or operational needs of the industry?**

**If so, describe how they do this.**

*The economical and operational requirements are of no importance before court, when the circumstances of an accident need to be clarified. Here only the existing regulations apply, which are primarily concerned with safety of the employees.*

**2.3 What sanctions are normally applied to those breaking the rules and by whom?**

*e.g. warnings, suspensions of operations, prosecutions, fines, termination of contracts.*

*If the regulations are not complied to, a regular court of law will sentence the guilty party to a retribution. Only persons can be prosecuted, not entire undertakings. Commonly the sentence is only a fine. Cases of prison sentences are unheard off until now.*

### **3 Compliance with the rules**

**3.1 Does the railway set out to be 100% compliant with the rules?**

**(It is recognised that any rules are liable not to be observed occasionally, because of individual ignorance or stress. Our concern here is with systematic non-compliance, of which others are aware.)**

*If an accident is caused by the disregard of existing regulations, the human factors overburden and stress do not count as an excuse. The responsible person is going to be punished in any case. But proving a disregard of the regulations is often problematic.*

**3.2 If less than 100% compliance is in some circumstances accepted, outline the nature and extent of this non-compliance.**

*Basically a 100% compliance is expected. But it is known to all concerned, that in reality many cases of negligence happen. For example:*

- *Workers are working longer than the mandatory 10 hours on the track*
- *The maintenance of the acoustic warning signals is insufficient.*
- *The safety guards do not participate in further training courses often enough.*

- *Those cases are hard to prove afterwards, because the particular records can be counterfeit to easily. So in court for the most part it seems as if the regulations were complied to, although that is not the truth. And furthermore it is often common for the witnesses to testify, that an accident with a case of death was caused by human failure of the killed person. That way the surviving employees often evade prosecution.*

### **3.3 Explain how it is that non-compliance persists.**

*The inspections of the construction sites by the representatives of the accident insurance take place too infrequent. Because of this reason the above described general practice could develop. In this branch there are many undertakings with a dubious reputation. Proving the negligence and the non-compliance is difficult.*

## **4 Past and possible future changes to the rules governing the topic**

### **4.1 Describe the recent history which led to the present rules.**

*After a series of accidents in the early nineties, the existing regulations were examined and in some parts complemented. For example, the schooling concept for safety guards has been over-worked. Because of this the schooling time increased from 5 days to 10 days.*

### **4.2 Identify ways in which the rules could be marginally more stringent, i.e. could reduce the remaining risk perceptibly.**

*It is the general opinion, that the existing regulations are more than sufficient. But inspections have to be more frequent.*

### **4.3 When the present rules were being drawn up, where these or other marginal changes considered? If so, why were they rejected?**

*There were no known suggested changes, which were rejected.*

### **4.4 Suppose an accident takes place which would have been prevented by marginally more stringent rules.**

#### **4.4.1 Would the enforcement authority prosecute?**

*The prosecutors office would examine, if the acknowledged rules of technology were complied to. If the accused party was able to prove full compliance, no penalty would be imposed.*

#### **4.4.2 Would the courts convict?**

*If all proceedings on the building site correspond with the acknowledged rules of technology, a prosecution is out of the question.*

#### **4.4.3 Would the operator be liable to pay compensation?**

*No.*

### **4.5 Suppose an interested party (e.g. regulator, trade union) suggested that the rules should be made marginally more stringent. Would the operator be obliged to:**

*The questions to this point cannot be answered in the required detail, because they are of a hypothetical nature. All concerned agree that the existing regulations are sufficient. Increases are not intended. The necessary intensification of the inspections fails, because of the lack of staff in the responsible institutions, which is the trade co-operative association in this case.*

**4.6 If a Member of Parliament advocated tightening the rules, what would be the outcome?**

*It would be very likely that the investigating committee would come to the conclusion that the existing regulations are sufficient. But there could arise a public discussion about this topic, which would expose some defects.*

**SAFETY REGULATIONS AND STANDARDS FOR EUROPEAN RAILWAYS  
PHASE II  
CASE STUDY C**

**ITALY**

## 1. THE CURRENT RULES AND LAW GOVERNING THE TOPIC

### 1.1 Describe the present operational rules governing work on the track while normal train operations continue.

These should be mandatory rules enforceable by the regulatory authorities, ultimately in the courts, not contractual obligations or working practices, should these differ (see 5. below). They should be specific to this activity.

#### e.g. 1 Every work site on the mainline will be separated by continuous and impenetrable barriers from any lines on which normal train operations continue, unless

- line speed is less than 130 km/hr, and
  - the number of workers does not exceed four, and
  - an individual is allocated, as their only task, acting as lookout, for each direction from which trains may approach
- or an emergency arises which makes it impracticable to delimit the work site.

#### e.g. 2 Every person who may need to go onto the track while train operations continue shall be trained and competent in regard to track safety.

*Safety standards for people working along the tracks during normal train operations are guaranteed by specific organisational regulations mentioned with the following terminology: "Regulations for the protection of the working site". The adopted methods may be different; they depend on the maximum speed of the line and on the kind of work that has to be done. The set of operational rules which regulate all working activities during rail services are contained in "Instructions for Working Site Protection" made up of 18 sections and various enclosures.*

### 1.2 Specify the status of the operational rules at 1. above :

e.g.

- specified in law (i.e. primary legislation from the legislature)
- regulations with legal force (i.e. secondary legislation, under delegated powers)

*Rules promulgated as a legislative delegation but having their own legal force*

### 1.3 What organisation is responsible for specifying the above operational rules?

e.g.

- Legislature
- specialist railway safety government agency
- general workplace safety government agency
- the infrastructure manager
- the organisation conducting the work

Or several?

*F.S. Spa - Infrastructure Division*

### 1.4 Set out the relevant hierarchy of requirements, starting with the particular rules, and ending with the general legal obligation on companies to ensure safety

e.g. *The current rules, summarised above, are contained within a Standard laid down by the Infrastructure Manager. The Infrastructure Manager lays down Standards on*

*such subjects by virtue of its obligations under its Licence from the Transport Ministry. The Transport Ministry Licence provides that the Infrastructure Manager will take effective steps to secure the safety of all whose employment requires them to work on or about the track. The general Health and Safety law provides that business enterprises will prevent personal harm arising from their operations. The general principles of application of such laws interpret such obligations in terms of "proportionality" i.e. the concept that the end being attained must not require disproportionate means.*

Law:

- National: L. 191/74; Order of the Republic President 547/55;
- Implementation of EU Directives: L.626/94; L. 494/96

**Implementation Rule: Order of the Republic President 469/79**

**"Regulations for the protection of the working site" promulgated by F.S. Director General in accordance with the contents of L. 191 of 1974.**

**1.5 Are there rules governing work on the track, which are not mandatory, and which differ from (or add to) the mandatory rules at 1. above? If so, please describe them**

*e.g.*

- non-mandatory codes of practice specified by governmental organisation (not legally enforceable)
- railway business operating rules

*Yes. Among these we can include the following:*

*Risk evaluation document (in application of section 7 of L. 626/94)*

*Safety scheme for mobile working sites put out to contract (by the customer whenever L. 494/96 can be enforceable)*

**1.6 Where the higher level laws or regulations (general duties) are aspirational (i.e. state without explicit qualification an objective which cannot be attained literally, e.g. "employers shall ensure the safety of their employees"), do governmental regulatory officials give expression to these requirements in terms of specific and rigidly enforceable operational rules? If not, is the principle of proportionality applied to the operational rules?**

*The laws, the regulations and the prescriptions as they arise from the risk evaluation documents give a full definition to the matter.*

**1.7 Who is held responsible for avoiding accidents in this area?**

- the infrastructure manager
- the business conducting the work or employing the person (e.g. the track maintenance company or the train operating company employing the driver)
- others
- several (state which)

**The person in charge changes according to the different situations:**

- *for internal operations carried out by permanent staff it is the Infrastructure manager;*

- *for operations put out to contract it is the F.S. Spa on one side and the firm on the other (each of them according to its own jurisdiction following the L. 494/96).*

## 2. ENFORCEMENT OF THE RULES

### 2.1 *Who is responsible for enforcement of the rules?*

**(For this purpose “enforcement” includes investigation of apparent violations of legal requirements, preparation of cases, initiation of processes to impose sanctions including bringing cases to court, and imposing sanctions. It excludes an organisation applying the rules and checking on its own compliance.)**

*e.g.*

- specialist railway safety governmental agency
- general workplace safety governmental agency
- the infrastructure manager

***Or several? If rules are specified by the infrastructure business are they enforceable by governmental regulatory officials?***

*Operations inspectorate*

*Infrastructure Manager*

### 2.2 *Do those responsible for enforcement apply the legally mandatory rules flexibly, so as to allow for the economic or operational needs of the industry?*

***If so, describe how they do this.***

No.

### 2.3 *What sanctions are normally applied to those breaking the rules and by whom?*

*e.g. warnings, suspensions of operations, prosecutions, fines, termination of contracts*

*warning communications*

*suspensions of operations*

*penalty applications (as they are covered by the contract)*

*contract termination*

## 3. COMPLIANCE WITH THE RULES

### 3.1 *Does the railway set out to be 100% compliant with the rules?*

**(It is recognised that any rules are liable not to be observed occasionally, because of individual ignorance or stress. Our concern here is with systematic non-compliance, of which others are aware.)**

*e.g. Certain types of non-compliance are condoned.*

Yes

### 3.2 *Outline nature and extent of non-compliance*

*e.g.*

1. The accepted practice involves regarding unplanned events which involve someone working trackside for a short time (e.g. a driver uses a signal post

telephone; a technician visits an item of equipment to assess an apparent fault) as “an emergency” within the meaning of the Standard.

Also, it is accepted that individuals working alone act as their own lookouts.

These interpretations involve an artificial interpretation of the word “emergency”, and might not sustain legal challenge.

2. The rules do not provide for automated trackworker warning systems. Where these are used, dedicated lookout staff are not provided.
3. It is known that continuous impenetrable barriers are rarely erected for work sites of duration less than 24 hours.

No.

#### 4 PAST AND POSSIBLE FUTURE CHANGES TO THE RULES GOVERNING THE TOPIC

##### 4.1 *Describe the recent history which led to the present rules*

e.g. *Following a series of fatal accidents to trackworkers in 1994 and 1995, decisions were taken to require more effective barriers and to reduce the speed, below which work without barriers is permitted.*

The most recent legislation regulating safety standards in working sites does not refer specifically to the railway sector. It establishes a set of general rules with the aim at complying with EU Directives and at facing the large number of labour accidents which take place in the working sites, particularly in the case of civil buildings.

##### 4.2. *Identify ways in which the rules could be marginally more stringent, i.e. could reduce the remaining risk perceptibly.*

e.g. The rules could be made marginally more stringent in the following ways:

- The speed limit, below which work without barriers is permitted, could be reduced
- The possibility of a worker having to act as their own lookout could be precluded
- Requirements could be placed on the warning arrangements. A time limit could be placed on the use of human lookouts
- Enforcement could be more intensive
- A time limit could be placed on the use of signal post telephones, and a programme for their elimination imposed.

The Italian rules concerning the rail sector are already stringent enough, particularly in the following areas:

- speed limits for working activities in absence of material barriers;
- prohibition for the workers to carry out autonomously their own protection barriers;
- compulsory exposure of warning prescriptions, for instance the time limits on the use of human lookout;
- in general, more rigorous application of the rules.

##### 4.3 *When the present rules were being drawn up, were these or other marginal changes considered? If so, why were they rejected?*

e.g. *The above changes - or similar ones - were considered. They were rejected essentially because the Railway Inspectorate took the view that the changes ultimately decided were as much as*

*the railway could comply with at the time, without excessive reduction in the industry's ability to perform track maintenance and renewal.*

**4.4 Suppose an accident takes place which would have been prevented by marginally more stringent rules**

**4.4.1 Would the enforcement authority prosecute?**

**e.g. No, assuming the current rules had been observed**

No, if the law and the regulations have been observed.

**4.4.2 Would the courts convict?**

**e.g. Not possible to say, since only the RI can bring prosecutions. The question does not arise**

*It is impossible to say it.*

**4.4.3 Would the operator be liable to pay compensation?**

*e.g. The courts would be unlikely to find the operator negligent if the current rules had been observed, but this would depend on all the facts of the case.*

It depends on the behaviour followed by the operator, that is, on the presence or not of fraud or severe negligence.

**4.5 Suppose an interested party (e.g. regulator, trade union) suggested that the rules should be made marginally more stringent. Would the operator be obliged to**

**4.5.1 accept the proposal?**

**e.g. No**

No, but he can take them into consideration and support them in the right places even if he is not legally bound to accept them.

**4.5.2 give reasons for rejecting the proposal?**

**e.g. The RI is in a position to issue and seek responses to proposals to require more stringent safety measures. The operator is therefore obliged to give reasons for rejecting a proposal from the RI (whether or not couched in formal terms).**

*Trade Unions have a right to be consulted, and it is accepted that proper consultation involves giving reasons for not accepting a reasoned proposal to improve safety.*

*In Italy the RI is in the position to issue and seek for responses to proposals that require more stringent safety rules. The operator is therefore obliged to give reasons for rejecting a proposal that comes from the Infrastructure Manager (whether or not couched in formal terms).*

*The unions have the right to be consulted and it is recognised that, in the case of a reasonable proposal to increase safety being rejected, the reasons for that must be given during specific consultations with the unions.*

**4.5.3 What would constitute acceptable reasons for rejecting the proposal?**

**e.g. The sorts of reason which have proved acceptable in these circumstances are**

- **the adverse effect on the train service (economic or operational) would be too great**
- **the technology proposed is unproven and complex**
- **the proposal would be likely to create additional risk, offsetting its direct safety benefits, by reason of its complexity in circumstances of disrupted train service.**

*Only if the proposal would be to create additional risks, offsetting direct safety benefits, as a consequence of its complexity in circumstances of disrupted train service.*

**4.6 If a Member of Parliament advocated tightening the rules, what would be the outcome?**

*e.g. It depends on the cases made by the various parties, and the public, media and political response. There is generally little political and public interest in this sort of risk.*

It depends on the cases made by the various parties in charge of evaluating the proposal (firms, Rail Operators, etc.).

**SAFETY REGULATIONS AND STANDARDS FOR EUROPEAN RAILWAYS**

**CASE STUDY C**

**THE NETHERLANDS**

## CASE STUDY C: APPLICATION OF THE LAW AND REGULATIONS IN PRACTICE: TRACK MAINTENANCE WORKERS

This case study focuses on the ways in which general legal requirements are translated in practice at different stages, from legislation itself through to application by railway operators, external regulation and the imposition of penalties. It will examine the role of, for example, administrative rules, official enforcement practice and informal discretion; and the rationales used for relaxing absolute duties such as practical inconvenience, 'technical' factors, or explicit costs. This will be illustrated through the example of safety of track maintenance workers.

### SOURCES OF INFORMATION

#### People interviewed:

#### Documents consulted:

1. Framework/format Occupational health and safety for Trackage workers. UIC OH&S, Working group 1
2. Aanrijding baanwerkers op emplacement Mook, 31 mei 1995. Spoorwegongevallenraad. Rapport van het openbaar onderzoek (overeenkomstig artikel 27c van de Spoorwegwet) [Report of the Railway Accident Investigation Board of the accident at Mook on 31 May 1995 where four track maintenance workers were struck and killed by a train]
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### GENERAL REMARKS

On 31 May 1995, a train struck and killed four track maintenance workers near the town of Mook, in the eastern part of the Netherlands. This major accident attracted a lot of public attention and was intensively investigated by the Spoorwegongevallenraad (Railway Accident Investigation Board, predecessor to the Transportation Safety Board) and Railed Spoorwegveiligheid (Railed Rail Safety). A number of recommendations arose from this investigation, which have been accepted by the various parties, and the issue continues to be closely watched in this country. Earlier this year, a report was given to the Rail division of the Rijksverkeersinspectie (National Traffic Inspectorate), summarising the current situation.

*Describe the present operational rules governing the selected activity/situation*

The judicial atmosphere in the UK and Germany differs from the Netherlands. Before Rained was founded, a reprimand system was applied, which has since been abolished. This is in keeping with the general shift in safety philosophy in the Netherlands, as it moves from a "guild" orientation, where the sector self-regulates and self-sanctions to protect itself from the "outside world" to an orientation more responsive to the public at large. This having been said, although the present legislative system and Railway Law may be very old, they have not necessarily lost their relevance or adequacy, although implementation could stand some improvement. Present legislation covers multi-user access to the Dutch railway network. This multi-user access was foreseen in the legislation in 1875. The two main safety parameters are still relevant: track allocation and speed. If the legislation is revised (either independently by the Netherlands or in concert with other EU countries, one should maintain principal assumptions of the original and should abolish all exceptions. Flexibility should replace central control. At present the Dutch are in a transition phase from the old to a more modern concept of legislation in terms of implementation planning.

Two organisations have authority to investigate accidents with track workers:

- Rained Spoorwegveiligheid (Rained Rail Safety), focussing on registrations of accidents and responsible for pattern and trend analysis.
- Spoorwegongevallenraad (Railway Accident Investigation Board (now incorporated in the multi-modal Transportation Safety Board), with the authority to perform independent single accident investigations.

In practice, they work closely together in any investigation.

The task of regulation makes use of various systems and safety classes:

- Systems based on Personal Observation and Guaranteed Warnings. The philosophy is to replace humans by failsafe technical systems with respect to certain safety critical tasks.
- Complete separation of trains and track workers. Trains are prevented to enter the work-track or the side-track, requiring measures at the infrastructure level, capacity management and procedures.
- Partial blockage of trains. Only the work-track is blocked and a physical separation from the side track is provided or trains are slowed down on the side-track. Dedicated warning systems have not supplied adequate reduction of the inherent hazards involved in the concept.
- Controlled access of trains. The safety manager of the worksite regulates controlled access. After analysing accidents this safety class should be avoided.

At present, the conflicting pressures of safety demands and track capacity demands are not resolvable to the complete satisfaction of both, thus in turn, putting pressure on maintaining regulations. Workload and time pressure put hazards on the formal regulatory system. Before the accident in 1995, the work supervisor was responsible for monitoring safety surveillance at the site. But in the aftermath of the accident, new procedures introduced a functional separation between safety and worksite management and the assurance of the implementation itself. Surveillance has been made explicit in the process.

The present operational rules are laid down in the Reglement Veilig Werken aan railinfrastructuur RVW 1996 (Rules for Safe Work on Rail Infrastructure).

Granting projects to contractors and sub-contractors is distinguished in four phases:

- 1) obligations by legislation in each European country
- 2) managerial guarantees by contracts, assurances and risk analysis
- 3) planning: Risk inventory, risk evaluations and risk reducing measures
- 4) adjusting to local situations and specific demands.

*Describe the events by which the present rules arose.*

A major accident with track workers on 31 may 1995 triggered the revision of the regulations. An investigation by the Spoorwegongevallenraad was initiated and Railed Spoorwegveiligheid developed a new maintenance concept which set out a hierarchy of requirements, starting with the particular rules, and ending with the legal obligation on companies to ensure safety. This hierarchy is, from top to bottom: Dutch law, a "Royal Decree" (ministerial administrative action), regulation, contracts, standards, local specific demands.

*Is the railway 100% compliant with the rules?*

The Dutch are fully compliant with the rules. In case of differences and interpretations, a deliberative process takes place until agreement is achieved. If agreement is not forthcoming (a rare event), then there is an appeals process where the nature and extent of non-compliance and the reason why it persists is put in writing. The focus is not so much on a more stringent application of the rules, but rather on the implementation of additional technical and organisational measures and deliberation on the acceptability of these measures. A deliberate deviation from the standards is permitted based on performance indicators such as failure rates, irregularities and maintenance. If no incidents in practice are reported, no intervention will take place. Incidents are reported to the authorities (Railed Spoorwegveiligheid) and auditing organisations as a part of a Quality Assurance philosophy. The transparency of the operational practice is regarded as crucial.

*Identify ways in which the rules could be marginally more stringent, i.e. could reduce the remaining risk perceptibly.*

*When the present rules were being drawn up, were these marginal changes considered? If so, why were they rejected?*

After the major accident at Mook, marginal changes of the present rules were rejected because they were believed to be inadequate to the task of meeting modern working condition requirements. Consequently, a substantial change was implemented, as outlined above.

*Suppose an accident takes place which would have been prevented by marginally more stringent rules:*

- *Would the enforcement authority prosecute?*
- *Would the courts convict?*
- *Would the operator face civil liability?*

Enforcement, courts and liability do not fit into the Dutch approach and have not yet been applied. In The Netherlands, the legislation itself fulfils a marginal role. Prosecution as well is marginal, just in case of physical harm, legal action is taken. However an increasing tendency is noted towards judicial actions (locally known as "Americanisation"). The risks of prosecution and liability are relevant in their ability to hamper the free movement of labour between the European countries.

*Suppose an interested party (e.g. regulator, trade union) suggested making the rules marginally more stringent. Would the operator be obliged to:*

- *Accept the proposal?*
- *Give reasons for rejecting the proposal?*

Suggestions are negotiated in the Dutch 'Poldermodel' approach. Reasons for rejection would be argued by application of the ALARA principle, where "reasonable" would be negotiated.

### **Outputs expected**

Comparing practices should discriminate between regulations for physical track worker safety versus certification of maintenance contractors and sub-contractors. The role and the processes for contractors and sub-contractors in relation to the infrastructure provider are different from track maintenance in relation to railway capacity and safety.

Maintenance interoperability should be distinguished from infrastructure interoperability. Assessing approaches should discriminate between the maintenance systems, their legal requirements, supervision and standards on one hand and differences in experience and skills between staff and contractors in the various countries on the other hand. Different systems and processes in the various countries on railtrack maintenance versus free movement of labour should be assessed differently.

In a survey of the European Transport Safety Council, it was concluded that:

"The key issue to the problem is careful planning and management. The population at risk on the tracks should be reduced and staff requirement diminished. Measures, which could promote safety, are: separation from running trains by fences, while sophisticated planning could reduce the disruption of services. Where maintenance staff do have to be on the track, adequate protection, communication and organisation of the work should be promoted."

Track worker safety was subjected to debate in the meeting of the Advisory Group on Protection of Labour, Health and Safety in Railways (18-19 March 1999 in Amsterdam). A review of track maintenance systems in four European member states concluded that present track maintenance systems rely on the principle of visual warning. Such a principle becomes vulnerable if traffic density and train speeds increase. The French HST system therefore applies a principle of full segregation.

The visual warning principle relies on:

- Experience of the working teams. Certification of contractors, cohesion within teams and peak loads in performance influence the safety levels.

- Local acquaintance of workers. This requires a correct estimate of the speed and position of oncoming trains; additional support during aggravated conditions, and advanced lookouts.
- Negotiations with track capacity management. Such negotiations cause production stresses and time limits, consuming slack in safety margins and efficiency losses. Safety measures may be considered a hindrance rather than a benefit. The 'operational culture' may differ considerable from theory, procedures and defined responsibilities.
- Human factor as a key link in perception of trains. The system is not failsafe due to the erroneous potential in perception, judgement of speed and distances. Only a fundamental change in full segregation of humans from trains can eliminate this human error element.

Further increase in train speeds and track use intensity puts limits to the presently applied principles. Reduction of train speeds on adjacent tracks has proven unsuccessful, while advanced human lookouts is not fail-safe and reveals cost-effectiveness limits. Technical systems replacing or compensating advanced lookouts are safer but may also encounter cost-efficiency limits.

Four driving forces for conceptual change exist:

- by privatisation and a retreating government, one of the parties involved will be allocated the responsibility for safety. The service provider as owner of the infrastructure ultimately decides on costs and benefits and the principles applied for safety during track maintenance activities.
- A variety of independent holdings, contractors and small size subcontractors have emerged within the railway sector, necessitating new forms of co-operation and control. New companies have entered the market, balancing profit, safety and capacity considerations. Guidelines for these parties have to be drawn up.
- For the sake of the movement of free labour throughout the European community, safety principles should be similar, and procedures standardised. To facilitate equal access, minimum standards should be established and safety performance indicators should be defined.
- Expanding safety management over all types of railway transport requires a common philosophy to enable exchange of information, operational experiences and safety enhancement strategies.

## TOWARDS NEW TRACK MAINTENANCE CONCEPTS

1. The Dutch approach, as revised following the Mook accident:

In the Netherlands, a new principle for track maintenance is defined by separating trains and track workers: the maintenance group is considered equivalent to a train and therefore may claim similar track capacity. The railway network is divided into 1000 working zones for which a maintenance planning concept, clustering of various maintenance activities physical track barriers and overhead line tolerance margins are established. A shift occurs from corrective to preventive maintenance. And specific activities are automated and the introduction of test trains fitted with sensors may replace visual testing. Maintenance poor track design may further decrease maintenance needs by eliminating switches and ballast-free track beds. A first test site indicated a risk reduction of 70%.

## 2. International harmonisation

The meeting of the Advisory Group on Protection of Labour, Health and Safety in Railways (18-19 march 1999 in Amsterdam) discussed two possible approaches:

### a. Upgrading existing concepts

Separation in time and space can be realised by introducing a maintenance time table. This preventive maintenance should bring the negotiations between capacity needs and maintenance needs to a higher level. These negotiations should take place under conditions of planned maintenance and clustered activities. Interference between trains and maintenance staff can be managed by procedural and physical measures such as zoning and barriers.

A classification system between maintenance projects can be made defined by the size of the projects.. Major projects should be characterised by separation, cyclic maintenance, top-down planning, integrated cost-effectiveness and full track closedown. Minor projects are characterised by non-separation and clustering, short term planning, bottom-up planning, mechanisation and automation of subroutines and local track shutdown or speed limits.

### b. New concepts

New concepts require definition of responsible actors for track maintenance and safety, such as the service provider as the most appropriate authority. Performance standards should be established based on relative performance such as the number of accidents/incidents per train-km. Risk compensation or transfer of risk to other situations or parties involved should not occur. In this respect outsourcing to subcontractors or night-time shifts are vulnerable approaches. Refined cost-effectiveness considerations are possible by defining limited classes of project sizes. Cost and capacity considerations become important to decide upon the necessity to shut down tracks partially or completely.

Three strategies are available to elaborate on innovative track maintenance concepts:

- Reduce exposure to risk at the source. Elimination or reduction of maintenance needs may be achieved by new sensor and monitoring techniques, maintenance of track beds, seamless welding of rails, substitution of wooden sleepers by concrete elements and smart trains. These concepts should be submitted to requirements of interoperability and harmonisation.
- Improved feedback and learning processes. Prevention and analysis of accidents and incidents as early warnings could enhance the safety level and improve cost-benefit ratio considerable. Independent accident analysis should be developed such as is the case with the Dutch Transportation Safety Board.
- Introduction and development of Quality and Safety Assurance systems. The introduction of self-regulating market principles, a shared responsibility of players becomes a critical safety issue. Stimulated by European legislation and standardisation, each railway company should integrate safety as a system performance indicator in its operational parameters. External independent auditors should be organised.

### **UIC maintenance philosophy**

The Dutch representative of the UIC stated the following requirements:

- UIC Guidelines or decision fiches could supply a format for safety of track workers, especially where subcontractors are involved. This fiche should be developed along the lines of the UIC guideline production.
- The philosophy is that the principal elements of operational practice for each track worker within each country should be similar. Two requirements are present: the free movement of labour should not be hindered and specific requirements within each country should be respected.

The strategy of the UIC is to supply the members with the know-how expressed by fiches with the power of pseudo legislation, similar to IMO and ICAO procedures. Such a framework is already established for rolling stock wherever UIC standards provide the reference framework for multi-current traction, clearance profiles, trackbed and track distances. For signalling and shore based communications such a framework is still under development.

**SAFETY REGULATIONS AND STANDARDS FOR EUROPEAN RAILWAYS**

**CASE STUDY C**

**SPAIN**

## 1. EXISTING REGULATIONS AND LAWS RELATING TO THE SUBJECT

### 1.1.

- \* General Traffic Regulations (hereinafter RGC) Section Heading III, Chapter 6
- \* Specific AVE Traffic Standard (hereinafter NEC), Chapter 3.
- \* Operating Instruction series C, n° 16, of 12/7/94
- \* Operating Instruction series C, n° 39, of 1/6/97
- \* Infrastructure Maintenance Technical Standard, Reference NRV 7-0-1.0
- \* Operating Instruction NEC n° 25, of 1/11/93.
- \* Warning n° 19, of 28/2/95.
- \* Land Transport Organization Law (hereinafter LOTT) in the following Section Headings, Parts and Sections.
  - Preliminary Section Heading:
    - + Part II: General Principles
      - \* Section 4
  - First Section Heading: Provisions common to the different modes of land transport
    - + Part VI: The inspection of road transport
      - \* Sections 32, 33, 34 and 35
  - Section Heading VI: Railway transport
    - + Part IV: Railway police
      - \* Sections 168 to 174
  - Section Heading VII: Establishment, construction and operation of railway transport
    - + Part II, Article 2: Public transport railways
      - \* Sections 234 and 235. The latter deals specifically with the subject of level crossings
  - Section Heading VIII: Railway police
    - + Part I: General Provisions
      - \* Sections 278 and 279
    - + Part VI: Penalty system

\* Sections 295 and 296

\* Labour Risk Prevention Law (hereinafter LPRL)

1.2.

The LOTT and the LPRL are examples of top-level legislation. The rest are standards with the force of law and have been approved by the Ministry of Public Works, although they were drawn up by Renfe.

1.3.

The RGC and their regulatory documents, as well as the NEC, were drawn up by Renfe (Infrastructure Manager) and approved by the Ministry of Public Works.

The Infrastructure Maintenance Technical Standard was also drawn up by Renfe as Infrastructure Manager.

1.4.

The Infrastructure Manager establishes the Regulations about these subjects in accordance with the RGC in force and approved by the Ministry of Public Works.

The general employee protection principles are included in the top-level legislation, i.e. in the LOTT and the LRPL. These principles are applied according to “proportionality”, i.e. the end pursued should not require disproportionate means.

1.5. They do not exist.

1.6. Yes. There are specific operating standards deriving from the LRPL for all types of work.

1.7. The traffic accidents which affect trains or manoeuvres are the responsibility of the Infrastructure Manager.

The work accidents involving employees are the responsibility of the railway company that contracts the work, generally Infrastructure Maintenance.

## 2. COMPLIANCE WITH THE STANDARDS

2.1-a) Traffic standards: The Infrastructure Manager and, more specifically, Traffic.

b) Risk prevention standards: Renfe’s corporate Human Resources and Infrastructure Maintenance.

2.2. No.

2.3. Temporary suspension of work

Disciplinary penalties for Renfe personnel (normally there are always Renfe personnel responsible for work safety).

### 3. COMPLIANCE WITH THE STANDARDS

3.1. There are no known tolerances.

2.2. Not applicable.

3.3. Not applicable.

### 4. CHANGES IN THE PAST AND POSSIBLE CHANGES IN THE FUTURE IN THE STANDARDS RELATING TO THE SUBJECT

4.1. In the RGC of 1992 (in force) the working system according to visibility was eliminated, in which the occupancy of the track was adapted to the train timetables without the need for telephonic communication.

Our experience with regard to the accident rate due to trains knocking down workers on the track adjacent to the one on which work is being carried out has made it advisable to prohibit such work on lines with trains which run at speeds of over 160 km/h.

4.2. The need to physically mark out the work area could be included when this work forces the traffic on the adjacent track to be suspended.

An attempt should be made to ensure that all maintenance work is carried out when all traffic has been interrupted, during time bands for maintenance.

4.3. The standards are continually adapted to risk factors as technology gradually develops (increase in speed, mechanisation of maintenance, noises, etc.) and to the traffic requirements (capacity of the line, available timetables, etc.)

In the case of the regulations for the Mediterranean Corridor, with services up to 200 km/h (Operating Instruction series C nº 39, of 1/6/97), the risk factors forced us to tighten the Regulations.

In the case of the Madrid-Seville High Speed Line, the capacity of the line means that track work is almost completely avoided outside the maintenance time bands, in which there is no traffic.

4.4.1. There are no precedents in this respect. The accidents are not caused by loopholes in the regulations, but by carelessness or negligence.

- 
- 4.4.2. In accidents involving deaths there *would* be a conviction. Even in proven cases of gross negligence, the judge usually pronounces an economic compensation in favour of the family.
- 4.4.3. The company to which the employee belongs probably does. The material damages are also paid by the party responsible for the accident.
- 4.5.1. No. In fact, it has been considered on certain occasions but has not been included.
- 4.5.2. The reasons have been explained in the safety commissions, because the organisation of traffic safety at Renfe insists that these explanations be given.
- 4.5.3. That safety is guaranteed with the strict fulfilment of the existing regulations.

That the technology proposed (e.g. automatic warning devices) does not guarantee safety in all cases.

Productivity reasons are never given.

- 4.6. There is no special political interest in this specific railway accident rate.

The laws and standards relating to safety at work *have* been tightened in general. Infrastructure Maintenance (RENFE) has created an organisation for the strict application of the rules and regulations established in connection with the contracting and execution of the work.

**SAFETY REGULATIONS AND STANDARDS FOR EUROPEAN RAILWAYS**

**CASE STUDY C**

**UNITED KINGDOM (GREAT BRITAIN)**

## 1. THE CURRENT RULES AND REGULATIONS GOVERNING THE TOPIC

### 1.1 Describe the present operational rules governing work on the track while normal train operations continue.

These should be mandatory rules enforceable by the regulatory authorities, ultimately in the courts, not contractual obligations or working practices, should these differ (see 5. below). They should be specific to this activity.

*This response deals with the main line railway and hence the infrastructure for which Railtrack is the Infrastructure Controller. Railtrack's Group Standards, Rule Book and Railway Safety Case do not apply to other railways (unless mandated by the operator's Licence from the Rail Regulator).*

*Detailed and extensive requirements apply in broadly three areas:*

*competence requirements for specified roles (e.g. Controller of Site Safety) and activities systems of work for specified circumstances, combining supervision arrangements, lookout arrangements, site demarcation, for specific limits on distances from running lines (including working on them) and speeds.*

*types of equipment approved for use (by Railtrack – also subject to Her Majesty's Railway Inspectorate (HMRI) Approval of Works). Equipment approved for use elsewhere in Europe may not necessarily be approved for use until it has been demonstrated that it can be used safely within the operational, physical and technical (eg electro-magnetic compatibility) environment on Railtrack's infrastructure.*

*Details of the first two of these requirements are in the Rule Book.*

### 1.2 Specify the status of the operational rules at 1.1 above :

*The operational rules that are legally enforceable by the safety regulator are set out in Railway Group Standards (RGS). These derive their legal enforceability by two routes – see 1.4 below.*

### 1.3 What organisation is responsible for specifying the above operational rules?

*The Infrastructure Controller (Railtrack).*

### 1.4 Set out the relevant hierarchy of requirements, starting with the particular rules, and ending with the general legal obligation on companies to ensure safety

*There are two routes. Both start with the RGS (largely the Rule Book in this case), which is obligatory for contractors by virtue of contract with Railtrack.*

*One route involves the RGS being made mandatory by commitments in Railtrack's Railway Safety Case (RSC) (and the organisation's own RSC, for organisations holding a train operator's RSC accepted by Railtrack) – which is legally enforceable because of the RSC Regulations – which derive their legal force from the Health and Safety at Work etc. Act 1974 (HSWA).*

*The other route involves the RGS being made mandatory by Railtrack's (or other railway operator's) Licence from the Rail Regulator - which is legally enforceable by virtue of the Railways Act 1993.*

- 1.5 Are there rules governing work on the track, which are not mandatory, and which differ from (or add to) the mandatory rules at 1. above? If so, please describe them**

*Yes. The contract with Railtrack will mandate the relevant Railtrack Line Standards, that are more detailed and may set specific requirements at particular sorts of locations. Contractors have to submit a Contractor's Safety Case to Railtrack Line, and have it accepted. This is analogous to an RSC, but specific to the work to be done by the contractor, excluding train operation (which has to have an RSC) and without the statutory backing of an RSC. RGS codes of practice, that work in the same way as Approved Codes of Practice under HSWA, may in effect mandate certain aspects as a contract condition. An example would be the Standards of Competence for a person in charge of Possession.*

- 1.6 Where the higher level laws or regulations (general duties) are aspirational (i.e. state without explicit qualification an objective which cannot be attained literally, e.g. "employers shall ensure the safety of their employees"), do governmental regulatory officials give expression to these requirements in terms of specific and rigidly enforceable operational rules? If not, is the principle of proportionality applied to the operational rules?**

*The HSWA general duty to ensure safety is qualified by the phrase "so far as reasonably practicable", so it is not "aspirational".*

*In some fields government promulgates "specific and rigidly enforceable operational rules", in the form of Regulations under HSWA. While certain Regulations under HSWA apply to track work (e.g. Safety-critical work; Construction, Design and Management (CDM)) they are not specific to this field (and on the whole they do not consist of "specific and rigidly enforceable operational rules"). Where Regulations do lay down such rules, proportionality does not apply.*

- 1.7 Who is held responsible for avoiding accidents in this area?**

*Both the infrastructure controller and the contractor have responsibilities. This is the explicit position laid down by the CDM Regulations plus the complication that the infrastructure controller is controlling the movement of trains.*

## **2. ENFORCEMENT OF THE RULES**

- 2.1 Who is responsible for enforcement of the rules?**

(For this purpose "enforcement" includes investigation of apparent violations of legal requirements, preparation of cases, initiation of processes to impose sanctions including

bringing cases to court, and imposing sanctions. It excludes an organisation applying the rules and checking on its own compliance.)

*The specialist railway safety regulator, HMRI.*

**2.2 Do those responsible for enforcement apply the legally mandatory rules flexibly, so as to allow for the economic or operational needs of the industry?**

*No. Where the legal requirement is qualified by “so far as reasonably practicable”, a balance is required to be struck between risk and cost (which would comprehend economic and operational needs). This is typically not applicable to the rules with which this questionnaire is concerned.*

If so, describe how they do this.

*Not applicable.*

**2.3 What sanctions are normally applied to those breaking the rules and by whom?**

*The Infrastructure Controller applies one range of sanctions to individuals and contractors (including termination of contract). HMRI has a range of sanctions, from oral and written advice, to Improvement Notices (requiring specified remedial action to be taken within a set time scale), Prohibition Notices (requiring unsafe activities to cease forthwith) and prosecutions.*

**3. COMPLIANCE WITH THE RULES**

**3.1 Does the railway set out to be 100% compliant with the rules?**

(It is recognised that any rules are liable not to be observed occasionally, because of individual ignorance or stress. Our concern here is with systematic non-compliance, of which others are aware.)

*Yes, except where there are transitional issues, or special arrangements are needed to achieve/re-establish compliance.*

*If not,*

**3.2 Outline nature and extent of non-compliance**

*The transitional issues and special arrangements mentioned in 11. above are governed by administrative RGS, of general application. Otherwise the question is not applicable.*

**3.3 Explain how it is that non-compliance persists**

*Not applicable.*

#### 4. PAST AND POSSIBLE FUTURE CHANGES TO THE RULES GOVERNING THE TOPIC

##### 4.1 Describe the recent history which led to the present rules

*The body of the rules is quite old (several decades) and represents mainly accumulated experience for accident prevention. The mid-1990s revisions reflected a generally accepted need to reduce the risks of trackside work, settled on a consensual basis without explicit decision criteria. Most recently there have been pressures both to improve safety and reduce costs, and the most recent changes (effective August 1999) involve an express consideration of the safety benefit versus the commercial dis-benefits.*

##### 4.2 Identify ways in which the rules could be marginally more stringent, i.e. could reduce the remaining risk perceptibly.

*There are numerous changes that might enhance safety (e.g. reduce the speed of trains running where there is red zone working without a possession).*

##### 4.3 When the present rules were being drawn up, were these or other marginal changes considered? If so, why were they rejected?

*Respondent was not aware of specific measures considered and rejected. But this consideration would have happened if a measure failed to command consensus that it was worth doing. This would have related to the costs but not in a crisp way. The most recent Rule Book changes were driven by a wish to simplify protection arrangements. The presumption was that making arrangements simpler would make them both safer and cheaper.*

*For current changes, a qualitative risk assessment would be carried out of the costs and benefits of the proposals. This is sent out with the proposals themselves as part of the consultation process, which includes consultation with the safety regulator, HMRI.*

*The main changes currently under consideration involve on-track automatic warning systems.*

##### 4.4 Suppose an accident takes place which would have been prevented by marginally more stringent rules

###### 4.4.1 Would the enforcement authority prosecute?

*Not normally.*

###### 4.4.2 Would the courts convict?

*Not normally.*

###### 4.4.3 Would the operator be liable to pay compensation?

*Compensation would be due only if the operator was at fault (usual UK position).*

**4.5** Suppose an interested party (e.g. regulator, trade union) suggested that the rules should be made marginally more stringent. Would the operator be obliged to

*4.5.1 accept the proposal?*

No. The regulator, HMRI, could enforce a change in the rules if necessary.

*4.5.2 give reasons for rejecting the proposal?*

Yes.

*4.5.3 What would constitute acceptable reasons for rejecting the proposal?*

*A proposal would be rejected only if there is reason to believe that there would be insufficient safety benefit to justify the costs (in whatever form).*

**4.6** If a Member of Parliament advocated tightening the rules, what would be the outcome?

*Although not technically an interested party, would command attention. But usual due process rules would apply.*