

ANNEX C

Regulatory Impact Assessment

REGULATIONS ON RAILWAY SAFETY MANAGEMENT

REGULATORY IMPACT ASSESSMENT (STATUS)

1. Partial.

PURPOSE AND INTENDED EFFECT

Issue

2. The purpose is to reshape key elements of the existing framework for rail safety driven by European requirements, Public Inquiry recommendations and ‘Better Regulation’ considerations. As part of the EU’s desire to revitalise the railways in line with its common transport policy, the EU is creating conditions in which rail transport can be efficient and compete with other transport modes. Several EC measures are aimed at creating an integrated European railway. This proposal will enable the UK rail industry to be part of this single European railway by implementing the safety management provisions of the EC Railway Safety Directive (2004/49/EC)¹. Specifically the new framework for rail safety will:
 - Implement aspects of the Railway Safety Directive. The purpose of the Directive is to have a common approach to safety, maintaining standards of rail safety in line with EU requirements, striving for continuous improvement only where reasonably practicable, while the European railway becomes integrated (interoperability²). The proposal does not seek to achieve an initial step change in safety. The Directive explicitly covers both passenger and worker safety. In the future the UK must be able to respond to Common Safety Targets (CSTs) to be achieved through Common Safety Methods set by a new European Rail Agency. (The CSTs will be set in light of factors already considered in the UK eg risk to passengers and workers, technical and scientific progress, costs and benefits, and societal acceptance of risk.

¹ The Directive deals both with regulation of safety and investigation of accidents and incidents on the community’s railways. This RIA deals with safety management only. The Rail Accident Investigation Branch of DfT will present draft regulations for consultation in the Summer 2004 on the Directive’s provisions on accident investigation

² There are three Directives on interoperability (96/48/EC Interoperability of the trans-European high-speed rail system; 2001/16/EC Interoperability of trans-European conventional rail system and 2004/50/EC Amending Directive on Interoperability. Implementation of these has been/will be led by DfT.

- Conclude outstanding recommendations from recent public inquiries on the management of railway safety.
 - Bring together and streamline key elements of the existing requirements to secure greater proportionality to risk and reduce costs - three sets of existing regulations will be replaced by one
3. The risks addressed are not new – the potential for multiple fatality accidents arising from railway collisions or derailments and for serious injuries to individual passengers and workers arising from the operation of trains and infrastructure - are well known. Major incidents are rare, but where they occur they have a large impact on individuals, society and the national economy arising directly from the deaths and injuries sustained as well as from physical disruption of the railway and indirectly by undermining public confidence in the operation of a key part of the national infrastructure. There is much statistical data on rail safety, which shows a general trend of improvement that has been sustained following privatisation in 1994. (Data are available from HSE’s Annual Reports on safety on the railways in Great Britain and RSSB: Annual Safety Performance Report 2002/03). Although rail is a relatively safe means of transport, in terms of passenger fatalities it is not as safe as bus and coach travel as shown in Table 1.

Table 1 – Fatality Rates Across Different Modes of Transport

Mode	Passenger fatalities per billion passenger:		
	kilometres	journeys	hours
Motor cycle / moped	123	1,910	4,890
Foot	47	43	210
Pedal cycle	35	140	430
Car	2.9	39	120
Rail	0.4	10	21
Bus / coach	0.3	3	7
Air	0.01	23	5
Notes: Data for rail and air are 10-year averages 1992-2001; data for bus/coach are 5-year averages 1997-2001; other data for 2001; data for air includes intercontinental travel.			

Source: Rail Safety and Standards Board Annual safety performance report 2002/3, quoting unpublished DfT figures updated to 2001

(<http://www.rssb.co.uk/pdf/railrepo0203/ASPR02-03.pdf>)

4. Implementation of the safety management provisions of the Directive requires replacement of the Railways (Safety Case) Regulations 2000, which while

broadly comparable in intention and effect, are different in detail. For example, the permissioning regime in the Directive uses a two-part safety certificate and authorisation scheme in which certificates and authorisations are issued by the safety authority (this will be HSE) with a maximum of 5 years validity, are revocable, and while changes in arrangements need to be notified to the safety authority, no formal agreement is needed. In contrast the present safety case regime involves one ‘one-off’ acceptance of a safety case, which is reviewed after 3 years, there is no provision for revocation, and duty holders have to agree “material revisions” of their arrangements with HSE before making the changes.

5. While the current Railways Safety Case Regulations require duty holders to describe and follow a safety management system, the Directive requires railway operators to establish a safety management system that addresses the risks arising from railway operation. The current arrangements in Great Britain are presently supplemented by specific requirements to:
 - a Control risks arising from the introduction of new and altered trains and infrastructure (The Railways and other Transport Systems (Approval of Works Plant and Equipment) Regulations 1994) (ROTS). These regulations require HSE approval for individual items of railway work, plant and equipment. They are being progressively replaced by the European interoperability requirements, but will continue to apply to, for example, local lines, metros such as London Underground and Docklands Light Railway, heritage railways and trams; and
 - a Control the risks from workers undertaking safety critical work (The Railways (Safety Critical Work) Regulations 1994). These regulations require employers to ensure that employees are competent and fit if they undertake safety critical work, that they carry a formal means of identification, and are not allowed to work such hours as could cause fatigue which could endanger safety.

Objectives

6. Specific objectives are to:
 - Transfer the interoperable rail industry from the existing system of railway safety cases to the new European system of safety certification and authorisation within a limited time period of possibly 2 years of the new requirements coming into force.
 - Reduce by [possible estimate 25%] the number of railway operators that have to seek formal permission from the safety regulator to work on the railway [these will be mainly infrastructure maintenance contractors working outside the running rail system].
 - Produce a set of minimum requirements for a safety management system as the basis of safety certification / authorisation that is more streamlined, better targeted, less bureaucratic, and quicker for Duty Holders (which should reduce costs for them given that they are charged for assessments). This will also reduce the amount (not yet quantifiable) of HMRI inspector resource presently devoted to assessment of safety cases, and redirect it towards checking by

inspection ‘on the ground’ that operators are properly controlling the risks arising from their operations.

- For the parts of the railway industry outside the European interoperable railway (ie the non-interoperable railway eg London Underground Ltd (LUL), tramways, heritage), remove the existing requirement for formal approval by the safety regulator before the introduction of new or altered works, plant or equipment, and replace it by a more targeted requirement on duty holders to obtain safety verification from a competent person.
- Require those who manage, supervise or control the performance of safety critical work e.g. holders of safety certificates / authorisations or their contractors, to ensure that they have arrangements in place that ensure safety critical workers are competent, fit and risks arising from fatigue are adequately managed.
- Change the definition of ‘safety critical work’ from broad job titles to the actual tasks that are safety critical to the safety of the railway.
- Remove the requirement for safety critical workers to carry a formal means of identification, resulting in a saving to the industry.
- Change the requirements relating to fatigue to extend the provisions to include other factors rather than hours of work , in light of latest research.
- As discussed in paragraph 2, maintain existing levels of railway safety and only where reasonably practicable, continually make improvements gauged by trends in passenger and worker fatalities, and precursor events e.g. signals passed at danger, broken rails.

Risk assessment

7. The number of fatalities, major injuries and over-3-day injuries over the past 2 years in the railway are shown in Table 1 below

Table 1: UK fatalities, major injuries and over-3-days injuries on the railway³

	Reported data			Estimated reporting rate	Estimated actual average
	2001/02	2002/03	Average		
Fatalities	32	50	41	100%	41
Major Injuries	351	349	350	70%	500
Over-3-Days	2023	2080	2052	70%	2931

³ Data cover national railway, London underground, trams, heritage railways. They do not include injuries to passengers.

Injuries					
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OPTIONS

8. Seven different options have been considered. Most of the proposed options imply amendments to three current sets of regulation: the Safety Case (henceforth, SC) Regulations, the Safety Critical Work (henceforth, SCW) Regulations and the Railways and Other Transport System (henceforth, ROTS) Regulations. Each option is described and analysed in relation to the impact they have on each of these regulations.

Option 1

- SC regulations: apply new regulations concerning safety management, safety certificate and safety authorisation to ‘interoperable’ railway (Network Rail, Train Operating Companies, Freight Operating Companies, contractors operating trains outside possessions). Retain SC regulations for metros, heritage and minor railways.
- SCW regulations: unchanged.
- ROTS regulations: revoke without replacement.

Option 2

- SC regulations: apply new regulations concerning safety management, safety certificate and safety authorisation to ‘interoperable’ railway (Network Rail, Train Operating Companies, Freight Operating Companies, contractors operating trains outside possessions).
- SCW regulations: unchanged.
- ROTS regulations: unchanged.

Option 3

- SC regulations: apply new regulations concerning safety management, safety certificate and safety authorisation to ‘interoperable’ railway (Network Rail, Train Operating Companies, Freight Operating Companies, contractors operating trains outside possessions) and tramways.
- SCW regulations: unchanged.
- ROTS regulations: unchanged.

Option 4

- SC regulations: apply new regulations concerning safety management, safety certificate and safety authorisation to ‘interoperable’ railway (Network Rail,

Train Operating Companies, Freight Operating Companies, contractors operating trains outside possessions) and tramways.

- SCW regulations: unchanged.
- ROTS regulations: revoke and replace with system of standard compliance conducted by notified bodies.

Option 5

- SC regulations: apply new regulations concerning safety management, safety certificate and safety authorisation to ‘interoperable’ railway (Network Rail, Train Operating Companies, Freight Operating Companies, contractors operating trains outside possessions) and tramways.
- SCW regulations: duty on those who control, extend scope of safety critical work, introduce ‘assessors’ for competence and fitness, extend provisions & ACoP on fatigue.
- OTS regulations: revoke and replace with system of standard compliance conducted by notified bodies.

Option 6

- SC regulations: apply new regulations concerning safety management, safety certificate and safety authorisation to ‘interoperable’ railway (Network Rail, Train Operating Companies, Freight Operating Companies, contractors operating trains outside possessions) tramways, people movers, metros, heritage and minor railways. Revoke SC regulations entirely.
- SCW regulations: duty on those who control, extend scope of safety critical work, introduce ‘assessors’ for competence and fitness, extend provisions & ACoP on fatigue.
- ROTS regulations: revoke and replace with system of standard compliance conducted by notified bodies.

Option 7

- SC regulations: apply new regulations concerning safety management, safety certificate and safety authorisation to ‘interoperable’ railway (Network Rail, Train Operating Companies, Freight Operating Companies, contractors operating trains outside possessions) tramways, people movers, metros, heritage and minor railways. Revoke SC regulations entirely.
- SCW regulations: duty on those who control, extend scope of safety critical work, introduce ‘assessors’ for competence and fitness, extend provisions & ACoP on fatigue.
- ROTS regulations: reduce scope and introduce verification by competent person.

INFORMATION SOURCES AND BACKGROUND ASSUMPTIONS

9. Information on costs and benefits have been collected from from industry sources (questionnaires were sent out to affected companies. At the time of writing HSE has had 3 full responses and 18 partial replies), Her Majesty's Railway Inspectorate, Bomel Limited, 'Evaluation of the Railways (Safety Case) Regulations', 2004⁴, the Department for Transport's Economic Note No. 1⁵, Davies and Teasdale, 'The costs to Britain of workplace accidents and work-related ill health in 1995/96', 1999, HSE's annual report on railway safety in 2001/02 and 2002/03⁶, sources within HSE and comments received on the HSC's Discussion Document "Safety on the Railway – Shaping the Future".
10. Costs have been discounted at a rate of 3.5%⁷. Health and safety benefits have been uprated by 2%, then discounted at 3.5%, giving an effective discount rate of 1.5%. Costs and benefits have been calculated over a ten year appraisal period starting in 2005 when the regulation are due to be introduced.
11. 2003 is the price base year. The choice of base year does not affect the balance of costs and benefits or the conclusions that flow from them. Unless otherwise stated, all cost figures represent present values over the entire appraisal period. Per annum (henceforth, p.a.) figures are normally given in brackets.
12. Costs and benefits are estimated assuming that there is full compliance with existing duties and that there will be full compliance with the proposed regulations (this assumption is further discussed in the uncertainty section).
13. It has been assumed that there will be no new entrants during the appraisal period except for tramways and people movers.
14. Some of the costs to businesses are opportunity costs that are reflected by the loss of output as a result of carrying out new duties. It is assumed that the loss of output is approximately equal to the time spent on carrying out the duty multiplied by the average wage (adding 30% for superannuation and employers' National Insurance contributions⁸).
15. It has been assumed that the number of injuries per year over the appraisal period is equal to the average number of injuries in 2001/02 and 2002/03.

⁴ Bomel Limited, 'Evaluation of the Railways (Safety Case) Regulations', 2004.

<http://www.hse.gov.uk/research/rrhtm/rr192.htm>

⁵http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_026183.hcsp

⁶ <http://www.hse.gov.uk/railways/annualreport0203/annualreport.pdf>

⁷ http://www.hm-treasury.gov.uk/media/05553/Green_Book_03.pdf#page=1

⁸ This follows Cabinet Office guidance.

16. Further information on the assumptions made in this RIA is provided below.

EQUITY AND FAIRNESS

17. Like the existing regulatory requirements, the proposal will put duties on transport operators to have in place the necessary arrangements to establish and maintain safe operation in regard to passengers, other members of the public, and staff. The effect of these arrangements is broadly similar to those in place now, and will not have a differential impact on any societal groups.

Atypical workers

18. The new regulations will cover some agency workers that are currently excluded, in particular with respect to safety critical work. We expect the number of workers that will come into scope under the new regulation to be relatively small. We plan to estimate the impact of the new regime on these workers.

BENEFITS

Health and safety benefits

Option 1

19. There may be some health and safety benefits from a refocusing of inspectors' priorities away from assessing safety cases and approvals towards inspecting. The present value cost of all accidents on the interoperable railway is £685 million⁹ over the appraisal period. It has not been possible to estimate what share of this cost will be saved under this option.

20. Revoking ROTS may yield some disbenefits as a scheme to verify/approve equipment used on non-interoperable railways is removed. It has not been possible to estimate the size of these disbenefits.

Option 2

⁹ The unit cost of fatalities has been taken from the Department for Transport's Highways economic note no. 1 uprated by nominal GDP per capita.

The unit cost of major and over three day injuries has been calculated as follows:

- Human costs have been taken from HSE's GAP 23 uprated by nominal GDP per capita.
- Lost output has been taken from Davies and Teasdale (1999) uprated using the New Earnings Survey earnings index.
- Resource cost has been taken from Davies and Teasdale (1999) uprated using the New Earnings Survey earnings index.

21. There may be some health and safety benefits from a refocusing of inspectors' priorities away from assessing safety cases and towards inspecting. The present value cost over the appraisal period of the accidents that this option would contribute to reduce is the same as under option 1, that is, £ 685 million.

Option 3

22. Health and safety benefits under this option are the same as under option 2 plus those accruing from bringing tramways into scope. The present value cost of fatal, major and over-three-day injuries in the tramway sector is £42 million over the appraisal period. It is not possible to estimate the reduction in tramway accidents that this option will achieve.

Option 4

23. Health and safety benefits under this option are the same as under option 3 plus those accruing from replacing the ROTS Regulations with a system of standard compliance control conducted by notified bodies. These benefits should flow from refocusing of HSE inspectors' priorities away from approvals and towards inspecting. It is not possible to quantify these benefits.

Option 5

24. Health and safety benefits under this option are the same as under option 4 plus those accruing from introducing new SCW regulations. Health and safety benefits are expected to arise mainly from the extension of scope of the new SCW regulations (additional tasks to be considered safety critical and more workers to be covered under the new regime) and from the requirements contained in the new ACOP.
25. The inclusion of additional tasks implies that some health and safety benefits will accrue to those covered by the current regulation as competence, fitness and fatigue will need to be taken into account for these tasks. The increase in the number of workers covered implies that the injury and fatality rates of those not covered by the current regulation will decrease to the same level of those that were previously covered. Unfortunately, only aggregate safety statistics are available, and it is therefore not possible to quantify the health and safety benefits associated with the extension of scope element of the new SCW Regulations.
26. However, we are able to estimate the cost to society of all injuries and fatalities occurring on the railway (see Table 1). The total present value of all injuries and fatalities in the railway sector over the appraisal period amount to about £ 837 million (£89 million p.a.). However, the reduction in fatalities and injuries (and associated cost) on the railway that the new set of SCW Regulations will bring about is not quantifiable.

Option 6

27. Health and safety benefits under this option are the same as under option 3 plus those accruing from bringing people movers, metros, heritage and minor railways into the scope of the amendments to the SC Regulations.
28. The present value cost of all fatalities/injuries on people movers, metros, heritage and minor railways is £106 million over the appraisal period. It is not possible to estimate the reduction in this cost that will be attained by option 6.

Option 7

29. Health and safety benefits under this option are the same as under option 6 plus those accruing from reducing the scope of the ROTS Regulations, instead of introducing a system of standard compliance control conducted by notified bodies. Benefits could flow from refocusing inspectors' priorities away from approvals and towards inspecting. It has not been possible to estimate their size.

Other benefits

30. No other benefits have been identified under any of the options

Total benefits

31. All considered options are expected to deliver health and safety benefits (with some disbenefits associated with the revoking of ROTS in option 1). However, for none of the options was it possible to quantify these benefits.

COSTS

Business sectors affected

Option 1

32. Network Rail, 34 train operating companies (TOCs), 11 freight operating companies (FOCs), and 6 large contractors (infrastructure maintenance or track renewal companies that operate trains outside possessions) fall within the scope of this option. In 2003 Network Rail employed over 13,000 staff and the majority of TOCs employed between 1,000 and 3,000 workers¹⁰.
33. Revoking the ROTS Regulations means that all businesses that currently fall within the scope of the ROTS regulations and do not form part of the interoperable railway will fall within the scope of this option. They include 9 tramways, 5 metros, 148 heritage railways and 4 people movers. In addition to these businesses, one tramway per year and one people mover every other year are expected to enter operation during the appraisal period.

¹⁰ The comprehensive Guide to Britain's Railways, 6th edition. A small number of harbour railways may be caught by the scope of the proposals because they form part of the interoperable railway. The cost for these railways has not been estimated because it is not known how many harbour railways form part of the interoperable railway and it is possible that Network Rail will become the infrastructure manager for these railways

Option 2

34. Under option 2 all businesses affected under the previous option are covered with the exception of those affected by the ROTS Regulations, as, in this case, these regulations are left unchanged instead of being revoked.

Option 3

35. In addition to the businesses affected under option 2, the tramway sector is covered. There are currently 9 tramways and it has been estimated that there will be 10 new tramways (one per year) introduced in the UK during the appraisal period

Option 4

36. Businesses affected are the same as under option 3 plus those affected by the change in the ROTS Regulations and not covered by the previous option (that is, people movers, metros, heritage and minor railways). The replacement of ROTS with a compliance system means that an estimated 10 notified bodies will also be affected.

Option 5

37. Businesses affected are the same as under option 4 with the addition of any other business carrying out safety critical work. This includes 35 smaller contractors and about 100 companies belonging to the UK railway supply industry.

Option 6

38. Businesses affected are the same as under option 5, however, people movers, metros, heritage and minor railways will have to comply with the amendments to the SC Regulations. Currently, 18 of the 148 heritage and minor railways possess a safety case and the remaining 130 railways are exempted from the current SC Regulations.

Option 7

39. This option will cover all businesses affected by option 6 plus an estimated 15 independent competent people to provide verifications.

Compliance costs for a 'typical' business

40. In this section we look at (a) the impact on individual businesses of the proposed changes to the SCW Regulations (options 5 to 7); (b) the impact of applying the changes to the SC Regulations to TOCs, tramways, people movers and heritage railways; (c) the impact of the different changes to the ROTS Regulations on tramways. When analysing the impact of the different set of regulations on the various businesses, we disregard familiarisation as this is dealt with in a separate paragraph at the end of this section.

Impact of the new SCW Regulations on individual businesses (options 5 to 7)

41. Four different types of costs have been identified in association with the proposed new SCW Regulations. (1) Placing a duty on those in control of safety critical work; (2) extending the scope of safety critical work; (3) introducing ‘assessors’ of competence and fitness; and (4) extending provisions on fatigue and introducing a new ACoP.

Duty on those in control of safety critical work

The previous regulations placed duties on employers and the self-employed. The proposed regulations will now place duties on those who manage, supervise or control staff undertaking safety critical workers. This change would mean that agency staff, supervisors of those undergoing practical training in safety critical work and volunteers in the heritage sector would now be classed as safety critical.

Extending the scope of safety critical work

42. The definition of safety critical work will now focus on those tasks which are considered critical to the safety of the railway. This will include some new tasks that stakeholders have identified as needed to be included e.g. installation of components, receiving and relaying of safety critical communications and controlling the supply of electricity to vehicles. It has been difficult to obtain accurate figures for the numbers affected.

Introduce assessors of competence and fitness

43. The proposals will include a duty for safety critical workers to have been assessed by a person who is competent to make an impartial and objective assessment. Indications are that duty holders already use assessors for competent and fitness e.g. occupational doctors. It has been difficult to obtain accurate figures for the number of new assessors that will be required for those already in scope of the existing definitions. The extension of scope will require new assessors of competence and fitness. Based on industry sources, it is estimated that the cost of training a medical practitioner is £500 and that between 0 and 2 medical practitioners will need training in each company. So, the additional cost per business should lie between £0 and £1,000 (£0 and £116 p.a.). We are awaiting figures from the industry for costs specifically related to assessors.

Extend provisions on fatigue and ACOP

44. The main costs stemming from the new provisions and ACOP are: (i) provision of guidance on hours of work; (ii) provision of lifestyle education to workers; (iii) periodic review of fatigue management policies; (iv) active management of overtime and shift exchanges. Some firms already comply with these requirements through their chosen implementation of the current safety critical work regulations. Information from these firms suggest a cost of less than £ 1 per worker p.a. for (i). As for (ii), companies’ estimates suggest a cost of about £70 per worker. We consider this latter cost to be a one-off cost. No cost information is available as far as (iii) and (iv) are concerned. The impact of the ACOP on individual businesses will depend on their size and on the extent to

which they already comply with the requirements in the current safety critical work regulations and ACOP.

45. The regulations cover a wide range of businesses of different nature. Moreover, even companies running similar businesses (as TOCs, FOCs, etc.) appear to be very heterogeneous. As a result, the actual cost of the extension of scope incurred by each business varies substantially across firms. This is because (i) the new safety critical workers will be unevenly distributed across companies and (ii) different companies have different unit costs.
46. As for (i), data provided by a sample of companies, which employ among them about 39,000 safety critical staff, suggest that the total number of safety critical workers will increase by ca. 6%. However, the majority of the companies in the sample have stated that their number of safety critical employees will not increase once the new regulations are introduced. This suggests that a large share of the increase in safety critical workers will be concentrated in a relatively small number of firms. In particular, among the firms that will register an increase in their number of safety critical staff, one foresees nearly a trebling in their safety critical staff while the remaining firms predict increases between 22% and 70%.
47. As for (ii), the ranges of the unit costs that firms incur for the different cost items associated with the extension of scope are given in the following table

Table 2: unit cost of extension of scope of the SCW Regulations

	Cost per additional safety critical worker p.a.
Training	£76-£375
Competence assessment	£45-£375
Fitness assessment	£30-£81
Record keeping	£27-£144
Sharing of information	£16
Total	£195-£999

48. So, as far as the extension of the scope of the regulations is concerned, the actual impact on individual businesses will largely depend on how many additional safety critical workers they will have and on their unit costs. The range of compliance costs for individual businesses will be between no cost at all up to about three times the cost they are incurring under the current regulation.

Impact of the amendments to the SC Regulations on some typical businesses

TOCs (options 1 to 7)

Costs

49. There are four costs that will be imposed on TOCs: (a) the cost of establishing a safety management system (SMS) and gaining a safety certificate, (b) the cost of notifications to a safety certificate, (c) the cost of resubmitting a safety certificate every five years, (d) the cost of producing an annual report to HSE. The cost of these requirements for the typical TOC is estimated at £25,000 to £42,000, £650 to £6,500, £23,000 to £40,000, £3,500 respectively. These are the costs for existing TOCs so the cost of establishing a SMS and gaining a safety certificate is less than the cost of a brand new safety certificate.
50. TOCs will also incur costs from making substantial changes to their safety certificates but it is assumed that these costs will be completely offset by no longer being required to make material changes to their safety cases.

Cost Savings

51. There are three sources of cost savings for TOCs: (a) the removal of the requirement for a three year safety case review, (b) the removal of the requirement for an annual external audit and (c) harmonisation of the safety certificate part A across the EU. The cost of three year reviews is estimated at £42,000 to £133,000¹¹.
52. It has not been possible to quantify the cost savings from no longer being required to have an annual external audit or the cost savings from EU harmonisation.

Net Costs

53. The present value of the cost of options 1 to 7 for a typical TOC is minus £81,000 to £50,000 (minus £9,400 to £5,800 p.a.)¹².

Tramways (options 3 to 7)

Costs

54. There are two costs that will be imposed on tramways by options 3 to 7: (a) the cost of establishing a SMS and (b) the cost of maintaining a SMS. The costs of these requirements for a typical tramway have been estimated at £12,300 to £21,000 and £1,600 to £15,700 respectively. Total cost for a tramway is therefore £13,800 to £36,700 (£1,600 to £4,300 p.a.).

¹¹ This cost range has been taken from the Evaluation of the Railway (Safety Case) Regulations with outliers excluded where appropriate.

¹² The upper bound for net costs has been estimated by subtracting the upper cost saving bound from the lower cost bound. The lower bound for net costs has been estimated by subtracting the lower cost saving bound from the upper cost bound.

People movers (options 6 and 7)

Costs

55. There are three costs that will be imposed on people movers: (a) the cost of establishing a SMS and gaining a safety certificate, (b) the cost of notifications and substantial changes to a safety certificate and (c) the cost of a five year resubmission of a safety certificate. The cost of these requirements is estimated at £14,000, £470 to £4,700, and £6,700 respectively. Total cost for a people mover is therefore £21,100 to £25,400 (£2,500 to £3,000 p.a.).

Heritage Railways (options 6 and 7)

56. We consider a heritage railway shifting from being exempted under the SC Regulations to being required to establish a SMS only.

Costs

57. There are two costs that will be imposed on this group of heritage railways: (a) the cost of establishing a SMS and (b) the cost of maintaining a SMS. The cost of these requirements to the typical heritage railway is estimated at £7,000 and £1,800 to £18,000 respectively.

Cost Savings

58. There are cost savings for this group of heritage railways from no longer being required to meet the conditions to be exempted from the SC Regulations. The cost savings from this are estimated at £10,000.

Net Costs

59. The net cost for a heritage railway shifting from being exempt to being required to establish a SMS is minus £1,300 to £14,700 (minus £150 to £1,700 p.a.).

Impact on tramways of changes to the ROTS Regulations

60. Tramways have been selected as the typical business affected by the proposed regulations because between 1998 and 2003 the time taken by HSE on approvals for tramways was greater than the time spent on approving equipment for metros, heritage railways, or people movers.

Option 1

Costs

61. No additional costs.

Cost Savings

62. There are two cost savings: (a) the removal of the requirement for approvals and (b) the removal of the simplified procedure for minor works. These cost savings amount to between £126,000 and £152,000 (£14,700 to £17,700 p.a.).

Net Costs

63. As there are no additional costs, net costs are equal to cost savings.

Options 4 to 6

Costs

64. The following costs will be imposed upon tramways by options 4 to 6: (a) the cost of appointing a notified body, (b) the cost of producing an application for a verification, (c) the cost of the notified body verifying the piece of equipment, (d) the cost of producing a technical file, (e) the cost of issuing a verification declaration and (f) the cost of applying to the HSE for an authorisation.
65. The cost of appointing a notified body has been estimated under the assumption that senior managers earning £19.20 per hour¹³ (excluding non-wage labour costs) take 40 hours to appoint a notified body. This yields a present value cost of appointing a notified body of £1,000.
66. The cost of producing an application for a verification is assumed to be the same as the current cost to firms of producing an application for an approval. Under the assumption that a tramway will spend between half and one times as many hours preparing an application as HSE spends approving applications, the present value cost of producing an application is £5,600 to £11,000.
67. The cost of a notified body verifying a piece of equipment has been estimated under the assumption that a notified body will cost between one and two times the cost of an approval by HSE. The present value cost of verifications is £100,000 to £199,000.
68. It has not been possible to estimate the cost of establishing a technical file (certificate and technical drawings), of issuing a verification declaration or of gaining an authorisation from HSE. The first two of these costs are likely to be small.

Cost Savings

69. There are two cost savings: (a) the removal of the requirement for HSE to make approvals and (b) the removal of the simplified procedure for minor works. To estimate these cost savings it has been assumed that applications for approvals and for minor works are produced by middle managers earning £13 per hour (excluding non-wage labour costs). The cost saving from the removal of the simplified procedure for minor works has a present value of £21,000 to £42,000

¹³ New Earnings Survey, 2003.

and the cost saving from the removal of approvals has a present value of £105,000 to £111,000.

Net Costs

70. The resulting net cost to tramways of the changes to ROTS envisaged by options 4 to 6 is minus £46,100 to £85,000 (minus £5,400 to £9,900 p.a.).

Option 7

Costs

71. There are two costs: (a) the cost of an independent competent person performing a verification and (b) the cost of preparing an application for a verification.
72. The following assumptions have been made to estimate the cost of a verification: (1) the number of hours spent on verification will be twenty percent less than the number of hours currently spent on approvals because the scope of the regulations will be reduced with regard to risk, (2) a middle manager earning £13 per hour (excluding non-wage labour costs) prepares the verification application and (3) the independent competent person charges the current HSE rate of £150 per hour¹⁴.
73. The present value cost of verification is estimated at £45,000 to £49,000 over the appraisal period.

Cost Savings

74. There are three sources of cost savings: (a) the removal of the simplified procedure for minor works, (b) the removal of the requirement for HSE to approve new equipment and (c) a potentially less bureaucratic set of arrangements. To estimate these cost savings it has been assumed that applications for approvals are produced by middle managers earning £13 per hour (excluding non-wage labour costs).
75. The cost saving from the removal of the simplified procedure for minor works has a present value of £21,000 to £42,000 and the cost saving from the removal of HSE approvals has a present value of £105,000 to £111,000.
76. It has not been possible to estimate the potential cost savings for some duty holders from reduced bureaucracy because it is not known what the scale of the savings will be, or how many firms will be able to make these savings.

Net Costs

¹⁴ The cost of an independent competent person is likely to increase for some businesses and fall for others who perform verification internally.

77. The resulting net present cost to tramways of the changes to ROTS contained in option 7 is minus £108,000 to minus £77,000 (minus £12,500 to minus £9,000 p.a.).

Familiarisation costs for individual businesses

78. Data on familiarisation cost have been provided by a few companies with reference to option 7. The range of costs spans from no cost at all to £80,000. If we use the number of safety critical workers as a proxy for company size, the estimated average familiarisation cost turns out to be around £41 per safety critical worker. This average cost appears to be decreasing with the size of the firm. Familiarisation costs are one-off implementation costs.
79. It seems reasonable to assume that the familiarisation costs range associated with the other 6 options is either equal or narrower than the one estimated for option 7. In particular, we would expect familiarisation costs to be far lower for options 1 to 3, as they imply a limited change in the regulations. For the same reason, option 4 should also entail relatively small familiarisation costs, while option 5, which include the changes to the SCW Regulations, should have familiarisation costs not much lower than those associated with option 7. Option 6 should have roughly the same familiarisation costs as option 7.

Total compliance costs to business

80. For each option, we first look at familiarisation costs and then at the specific costs associated with the proposed changes to each set of regulation (SC, SCW and ROTS).

Option 1

81. As explained above, the only information about familiarisation that is available and comes from industry sources is related to option 7. Familiarisation costs for option 1 are assumed to be much smaller than for option 7 as option 1 entails changes to only one set of regulations (the SC Regulations). Specifically, we assume that familiarisation costs under option 1 are equal to 25% of the familiarisation costs imposed by option 7. That is, £372,00 to 531,000 (£43,000 to 62,000 p.a.).
82. The remaining costs to business associated with this option are those associated with the changes in the SC Regulations plus those arising from revoking the ROTS Regulations. These are outlined below.

Costs associated with changes to the SC Regulations

Cost: shifting from Safety Case Regime to a Safety Management System (SMS) and Safety Certificate/Authorisation Regime

83. The cost of establishing a SMS and safety certificate or authorisation¹⁵ is expected to be less than the cost of establishing a safety case because less detailed information is required. It has been estimated that the cost of establishing a safety certificate is 70% of the cost of a new safety case, i.e., 70% of £70,000 to £120,000 for TOCs and FOCs, 70% of £40,000 to £100,000 for large contractors and 70% of £1,050,000 for Network Rail¹⁶. The cost of transforming a safety case into a safety certificate is estimated at half the cost of establishing a new safety certificate¹⁷.
84. In addition to this cost businesses will be required to resubmit their safety certificate every five years (replacing the three year safety case review discussed below as a cost saving), make substantial changes to their safety certificate and notify the HSE of smaller changes to their safety certificate.
85. It has been estimated that a five year resubmission will cost a quarter of the cost of establishing a new safety certificate¹⁸ and the cost of a notification is a tenth of the cost of a material revision¹⁹.
86. The cost of substantial changes to a safety certificate has not been estimated because it is expected that they will completely offset the cost saving from no longer being required to make material revisions to their safety case.
87. Costs have been estimated assuming that a notification is made every other year.
88. The total cost of shifting from the safety case regime to the safety certificate regime is £3.1 to £5.1 million (£360,000 to £590,000 p.a.)

Cost: Annual Report

89. The cost of producing an annual report has been calculated assuming that the report takes three days (24 hours) to write by a middle manager earning £13 per hour (excluding non-wage labour costs). This suggests that the present value cost

¹⁵ From this point onwards 'safety certificate' will be used to include 'safety authorisation' (the equivalent term for the infrastructure managers) and the establishment of an SMS meeting the directive's requirements.

¹⁶ The cost of producing and gaining acceptance of a safety case has been taken from 'The evaluation of the Railway (Safety Case) Regulations' except for Network Rail. There is significant cost variation between businesses so ranges have been used which exclude outliers where appropriate.

The cost of producing a safety case for Network Rail has been estimated by HSE because the cost of £5.1 million in the evaluation of the safety case regulations is very high.

¹⁷ £25,000 to £42,000 for TOCs and FOCs, £368,000 for Network Rail and £14,000 to £35,000 for large contractors.

¹⁸ £12,000 to £21,000 for TOCs and FOCs, £184,000 for Network Rail and £7,000 to £18,000 for large contractors.

¹⁹ £150 to £1,500 for TOCs and FOCs, £1,000 to £7,000 for Network Rail and £400 to £1,500 for large contractors.

to Network Rail, TOCs, FOCs and large contractors of producing annual reports is £185,000 (£21,500 p.a.).

Cost: Modified Duties on Network Rail

90. Under the proposed regulations some of the specific duties placed on Network Rail to monitor train operations and to make recommendations to HSE will be removed. It is expected that the cost saving from the removal of these duties will be offset by new requirements on Network Rail to involve railway undertakings and to continue to undertake some monitoring activity.

Cost Savings

91. There are five sources of cost savings: (a) the removal of the requirement for a three year review, (b) small contractors being taken out of the scope of the regulations, (c) the removal of the requirement for annual external audits, (d) harmonisation of the safety certificate part A across the EU and (e) removal of charter exemptions.
92. The cost of a three year review has been estimated at £11,000 to £35,000 for TOCs and FOCs, £103,000 for Network Rail and £9,000 to £40,000 for large contractors²⁰. The present value cost saving from removing three year reviews is £1.7 to £5.3 million (£200,000 to £614,000 p.a.).
93. Small contractors taken out of the scope of the regulations will make cost savings from not being required to undertake a three year review or to submit material changes to their safety cases. Assuming material changes are submitted every other year the present value cost saving for small contractors is £115,000 to £753,000 (£13,000 to £87,000 p.a.).
94. It has not been possible to estimate the cost saving from the removal of the duty to have an annual external audit and from the harmonisation of part A of the safety certificate across the EU²¹.
95. Charter exemptions are assumed to cost the same as an exemption for a heritage railway (£3,500). There are currently about 70 exemptions each year. The cost saving from charters being excluded has a present value of £2.11 million (£245,000 p.a.).
96. The present value of all cost savings is £3.9 to £8.1 million (£458,000 to £947,000 p.a.).

Net Costs

²⁰ These cost ranges have been taken from 'The Evaluation of the Railway (Safety Case) Regulations' (except Network Rail) with outliers excluded where appropriate.

²¹ Cost savings from harmonisation are likely to be small because only a small number of firms operate in both the UK and other EU member states.

97. The net present cost of the changes to the SC Regulations contained in option 1 is minus £4.9 to £1.3 million (minus £565,000 to £153,000 p.a.). The changes consist in replacing, for the interoperable railway, the current SC regime with a less burdensome safety certificate regime. Hence, none of the costs are policy costs.

Costs associated with changes to the ROTS Regulations

Costs

98. No additional costs to business.

Cost Savings

99. There are two cost savings from the revocation of ROTS without replacement: (a) the removal of the requirement for HSE approvals and (b) the removal of the simplified procedure for minor works. The present value of these cost savings is £2.8 to £3.3 million (£322,000 to £388,000 p.a.).

Net Costs

100. As there are no additional costs, net costs are equal to cost savings. Since the changes to the ROTS Regulations consist in revoking them, none of the costs are policy costs.
101. The resulting total costs to business of option 1 are minus £7.8 to minus £3.6 million (minus £910,000 to minus £414,000 p.a.). All these costs are implementation costs.

Option 2

102. Familiarisation costs are assumed to be the same as under option 1, that is, £372,00 to £531,000 (£43,000 to £62,000 p.a.).
103. Since the only difference between option 2 and option 1 is that the ROTS Regulations are left unchanged instead of being revoked, all remaining costs to business of option 2 are the same as those arising from the changes to the SC regime under option 1. Hence, total cost to business of option 2 is minus £4.5 million to minus £780,000 (minus £522,000 to minus £91,000 p.a.). All these costs are implementation costs.

Option 3

104. Total familiarisation costs are assumed to be equal to 30% of the familiarisation costs imposed by option 7. That is, £446,000 to £637,000 (£52,000 to £74,000 p.a.). This is 5% more than under the previous option as additional firms (namely, the tramways) will have to familiarise themselves with the new regulations.
105. The remaining costs to business are the same as for option 2 with the addition of the costs imposed on tramways by the extension to them of the amendments to the SC Regulations. These costs are outlined below.

Costs to tramways associated with changes to the SC Regulations

Costs

106. Costs to tramways arise from establishing and maintaining a SMS. This cost has been estimated under the following assumptions: the cost of establishing a SMS is half the cost of a metro establishing a SMS and gaining a safety certificate²², the cost of maintaining a SMS is half the cost to a metro of making substantial changes and notifications²³, the costs of maintaining a SMS are incurred from the second year onwards and one tramway enters operation every year of the appraisal period.
107. The total cost to tramways of establishing and maintaining a SMS is estimated at £237,000 to 586,000 (£28,000 to £68,000 p.a.).
108. The resulting total cost to business of option 3 is minus £4.2 million to minus £94,000 (minus £485,000 to minus £11,000 p.a.). Total policy costs lie between £120,000 and £290,000.

Option 4

²² £12,000 to £21,000 for a tramway.

²³ £400 to £4100 every two years.

109. Familiarisation costs are assumed to be equal to 45% of the familiarisation costs imposed by option 7. That is, £669,000 to £956,000 (£78,000 to £111,000 p.a.). This is 15% more than under the previous option as a new set of regulations amending the current ROTS regulations is introduced.
110. The remaining costs to business associated with this option are the same as for option 3 plus the costs arising from the changes in the ROTS Regulations. These costs are outlined below.

Costs associated with changes to the ROTS Regulations

111. The following costs need considering: (a) the cost of appointing a notified body, (b) the cost of producing an application for a verification, (c) the cost of the notified body verifying the piece of equipment, (d) the cost of producing a technical file, (e) the cost of issuing a verification declaration, (f) the cost of applying to the HSE for an authorisation and (g) the cost of a notified body being certified by UKAS.
112. The cost of appointing a notified body is assumed to be the same as the cost of 40 hours for a senior manager earning £19.20 per hour (excluding non-wage labour costs). This has a present value cost of £273,000 (£32,000 p.a.).
113. The cost of producing an application for a verification is assumed to be the same as the current cost to firms of producing an application for an approval. Under the assumption that businesses will spend between half and one times as many hours preparing an application as the HSE spends approving, the present value cost of producing an application is £696,000 to £816,000 (£81,000 to £95,000 p.a.).
114. The cost of the notified body making a verification is estimated at between one and two times the cost of HSE making approvals. The present value cost of this is estimated at £2.2 to £4.4 million (£254,000 to £507,000 p.a.).
115. The cost of a notified body being certified by UKAS has been estimated under the following assumptions: (1) there are 10 notified bodies, (2) each notified body becomes certified for two transport systems and (3) certification costs between £1,500²⁴ and £11,500²⁵. The estimated cost to notified bodies of becoming certified is between £30,000 and £230,000 (£3,500 to 27,000 p.a.).
116. It has not been possible to estimate the cost of businesses establishing a technical file (certificate and technical drawings), of issuing a verification declaration and of gaining authorisations from HSE. The cost of establishing a technical file and issuing a verification declaration are likely to be small.

²⁴ For an existing notified body to become certified to provide verifications for metros, heritage or other guided transport systems. Source UKAS.

²⁵ For a new entrant to the market to become certified to provide verifications for metros, heritage or other guided transport systems. Source UKAS.

Cost Savings

117. There are two cost savings: (a) the removal of the requirement for HSE approvals and (b) the removal of the simplified procedure for minor works. To estimate these cost savings it has been assumed that applications are produced by middle managers earning £13 per hour (excluding non-wage labour costs). The cost saving from the removal of HSE approvals and simplified procedure for minor works has a present value of £2.8 to £3.3 million (£322,000 to 388,000 p.a.).

Net Costs

118. The net present cost of this option is minus £157,000 to £2.9 million (minus £18,000 to £339,000 p.a.).

119. The resulting total cost to business of this option is equal to minus £4.1 to £3.1 million (minus £477,000 to £365,000 p.a.). Total policy costs are the same as under the previous option and lie therefore between £120,000 and £290,000.

Option 5

120. Familiarisation costs are assumed to be equal to 80% of the familiarisation costs imposed by option 7. That is, £1.2 to £1.7 million (£138,000 to £197,000 p.a.). This is 35% more than under the previous option as a new set of regulations amending the current SCW regulations is introduced.

121. The remaining costs to business associated with this option are the same as for option 4 plus the costs arising from the changes in the SCW Regulations. These costs are outlined below.

Costs associated with changes to the SCW Regulations

122. According to Network Rail there are no more than 100,000 workers that are currently covered by the existing RSCW regulations. On this basis we assume that the number of safety critical workers currently covered lies between 80,000 and 100,000. Using the 6% figure mentioned in the ‘compliance cost for a typical business’ section, we expect between 4,800 and 6,000 additional workers to be captured by the new regulation.

123. As far as the new ACOP is concerned, we assume that a number of companies corresponding to 50% to 70% of all safety critical workers already comply with it. Hence, the total costs are calculated by multiplying the cost per worker given in the ‘compliance cost for a typical business’ section (i.e., £1 for provision of guidance and £70 for lifestyle education) by a fraction of the number of all safety critical workers under the new regulation.

124. When calculating the lifestyle education costs, we also assume that a number of workers equal to 3% of the total number of safety critical workers under the new regulation enter the market each year. As a result, the cost of the provision of guidance lies between £219,000 and £456,000 (£25,000 and £53,000 p.a.) and

for lifestyle education between £3.1 and £5.4 million (or £364,000 and £628,000 p. a.). These ranges have then been uprated by a factor of 2 to take account of those ACOP requirements we have no cost information on. The resulting total cost of the ACOP lies between £6.7 million and 11.7 million (£780,000 and 1.4 million p.a.).

125. Total medical competence costs are obtained by assuming that the number of medical practitioners that will need training lies between 50 and 100. Since training has been estimated at £500 per head (see ‘compliance cost for a typical business’ section), this gives a total cost of between £25,000 and £50,000 (£2,900 and 5,800 p.a.)
126. The total costs to business resulting from the extension of scope is calculated by multiplying the average unit costs of the items listed in Table 2 by the number of additional safety critical workers. The result of this exercise is summarised in Table 3.
127. The total cost to business of option 5 lies between £24 and 42 million (£2.8 and 4.8 million p.a.). This results from adding together costs stemming from changes to the SCW Regulations (GP training, ACOP and extension of scope), familiarisation costs and the non-familiarisation costs of the previous option. Policy costs amount to between £28 and £38 million (£3.2 and £4.4 million p.a.) and corresponds largely to the costs of the changes to the SCW regulations.

Table 3: total cost to business of the extension of scope of SCW Regulations.

	Average cost per additional safety critical worker p.a.	Cost per year for all additional safety critical workers (£ million)	Present value over appraisal period (£ million)
Training	£184	£0.9 - £1.1	£7.6 - £9.6
Competence assessment	£177	£0.9 - £1.1	£7.4 - £9.2
Fitness assessment	£47	£0.23 - £0.29	£2.0 - £2.5
Record keeping	£72	£0.35 - £0.44	£3.0 - £3.8
Sharing of information	£16	£0.08 - £0.09	£0.65 - £0.82
Total	£499	£2.4 - £3.0	£20.8 - £26.0

Option 6

128. Familiarisation costs are assumed to be equal to the familiarisation costs imposed by option 7. That is, £1.5 to £2.1 million (£173,000 to £247,000 p.a.). This is 20% more than under the previous option to account for the extension of scope of the amendments to the SC Regulations.

129. The remaining costs to business associated with this option are the same as for option 5 plus the costs arising from the extension of scope of the changes to the SC regulations. These are outlined below.

Costs associated with extension of scope of new SC Regulations

130. The extension of scope will concern people movers, metros, heritage and minor railways.

Costs: Establishing a SMS and Gaining a Safety Certificate (people movers)

131. People movers are currently outside the scope of the SC Regulations. These businesses will be required to undertake the following: (a) establish a SMS and gain a safety certificate, (b) make notifications and (c) make substantial changes to their safety certificate and (d) resubmit their safety certificate every five years. To estimate these costs it has been assumed that the costs of people movers will be similar to the costs of heritage railways because they are both relatively small operations.

132. The unit costs of establishing a SMS and gaining a safety certificate, making a notification, making a substantial change and a five year resubmission are estimated at £14,000, £10 to £100, £100 to £1,000, and £3,500 respectively.

133. The present value cost of establishing a SMS and gaining a safety certificate is £157,000 to 184,000 (£18,000 to £21,000 p.a.). Half of these costs are assumed to be policy costs.

Costs: Shifting from Safety Case Regime to a Safety Management System (SMS) and Safety Certificate Regime (metros, heritage and other minor railways)

134. Metros, heritage and other minor railways that currently have safety cases will be required to establish a SMS and gain acceptance of a safety certificate. Metros, heritage and other minor railways will incur the cost of (a) shifting from a safety case to a safety certificate, (b) having to submit a safety certificate every five years, (c) making substantial changes to a safety certificates and (d) making notifications to a safety certificate. It has been assumed that the cost of substantial changes is completely offset by the current cost of making material changes to their safety case.

135. To estimate the cost of these changes to metros the following assumptions have been made: the costs for London Underground are the same as a TOC, the cost for other metros of transforming their safety cases into safety certificates is a quarter of 70% of the cost for a TOC²⁶, the cost of a five year review is a quarter of the cost of gaining a new safety certificate for a metro²⁷ and the cost of a notification is a tenth of the cost of a material revision²⁸ or half the cost of notifications for a TOC.

136. The present value cost of these changes for metros is £138,000 to £251,000 (£16,000 to £29,000 p.a.).

²⁶ £12,000 to £21,000

²⁷ £6,000 to £11,000 every five years

²⁸ £75 to £750 every two years

137. To estimate the cost of these changes for heritage and other minor railways that have safety cases the following assumptions have been made: the cost transforming a safety case into a safety certificate is half of 70% of the cost of establishing a safety case²⁹, the cost of a five year review is a quarter of the cost of gaining a new safety certificate³⁰ and the cost of a notification is a tenth of the cost of a material revision³¹.
138. The present value cost of these changes for heritage and other minor railways that have safety cases is £235,000 to 242,000 (£27,000 to 28,000 p.a.).

Costs: Heritage Railways Shifting from Exemption to Establishing and Maintaining a SMS (heritage and other minor railways)

139. Heritage and other minor railways that are currently exempted from having a safety case under the SC Regulations will be required to establish and maintain a SMS under the proposed regulations. The cost of establishing a SMS for these railways is assumed to be half of 70% of the cost of a safety case (£7,000). The cost of maintaining a SMS is estimated at half the cost to metros of making substantial changes and notifications (£400 to £4,100 every two years).
140. The present value of these costs is £1.1 to £2.9 million (£129,000 to £343,000 p.a.). Half of these costs are considered to be policy costs.

Cost Savings: Shifting from Safety Case Regime to a Safety Management System (SMS) and Safety Certificate Regime (metros, heritage and other minor railways)

141. Metros, heritage and other minor railways with safety cases will make cost savings from the removal of the requirements for a three year review and for external annual audits.
142. The cost of a three year review for a metro has been estimated at half the cost of a three year review for a TOC³². The cost of a three year review for heritage and other minor railways with safety cases is estimated at between £1,000 and £6,000 every three years.
143. The cost saving from the removal of the three year review requirement is estimated at £94,000 to £298,000 (£11,000 to £35,000 p.a.) for metros and £52,000 to £310,000 (£6,000 to £36,000 p.a.) for heritage and other minor railways.

²⁹ £7,000. The Heritage Railway Association in their response to the Discussion Document stated that the cost of producing and gaining acceptance of a safety case for a heritage railway is closer to £20,000 than the £9,000 to £12,000 in the Discussion Documents RIA. The figure of £20,000 has therefore been used as a basis to arrive at this figure (£7000).

³⁰ £3,500 every five years

³¹ £10 to £100 every two years

³² £5,500 to £17,500 every three years

144. It has not been possible to estimate the cost savings from the removal of the requirement for an external annual audit.

Cost savings: Shifting from Exemption to Establishing and Maintaining a SMS (heritage railways)

145. The cost of gaining exemption for heritage railways is assumed to be a sixth of the cost of establishing a SMS every year³³. The present value of this cost saving is £1.3 million (£152,000 p.a.).

Net Costs

146. The resulting net present cost associated with the extension of scope of the amendments to the SC Regulations is minus £422,000 to £1.9 million (minus £49,000 to £223,000 p.a.).

147. Total cost to business of option 6 lies between £24 and £44 million (£2.8 and £5.1 million p.a.). Policy costs amount to between £28.3 and 39.6 million (£3.3 and £4.6 million p.a.).

Option 7

148. Familiarisation costs for this option have been estimated on the basis of the information provided by a sample of companies. To calculate the total cost to business of familiarisation the stated and estimated familiarisation cost of the sample companies have been scaled up by using a fraction of the total number of safety critical workers caught by the new regulation. The use only of a fraction (namely, the range 70% - 80%) of all workers accounts for the fact that some companies have declared that they will not incur any familiarisation costs. The estimated familiarisation costs amount to between £1.5 and £2.1 million (£173,000 and £247,000 p.a.).

149. The remaining costs to business associated with this option are the same as for option 5 plus the costs arising from the reduction of scope of the ROTS Regulations and the use of independent competent persons for verification minus those associated with the system of standard compliance contained in option 5.

Costs associated with reduction of scope of the ROTS Regulations

150. The only cost from this option is the cost of verification by an independent competent person. This cost has been estimated under the following assumptions: (1) the number of hours spent on verification will be twenty percent less than the number of hours currently spent on approvals because the scope of the regulations will be reduced with regard to risk, (2) a middle manager earning £13 per hour (excluding non-wage labour costs) prepares the verification application and (3) the independent competent person charges the

³³ £1,200 every year or £3,500 every three years.

current HSE rate of £150 per hour. The resulting cost of verifications has a present value of £1.2 to £1.3 million (£142,000 to £154,000 p.a.).

Cost Savings

151. There are three cost savings: (a) the removal of the simplified procedure for minor works, (b) the removal of the requirement for approvals by HSE and (c) a potentially less bureaucratic system. To estimate these cost savings it has been assumed that applications for approvals are produced by middle managers earning £13 per hour (excluding non-wage labour costs).
152. The present value of the cost saving from the removal HSE approvals and the simplified procedure for minor works is £2.8 to £3.4 million (£322,000 to £388,000 p.a.).
153. It has not been possible to estimate the potential cost savings for some duty holders from reduced bureaucracy because it is not known what the scale of the savings will be or how many firms will be able to make these savings.

Net Costs

154. The resulting net present cost is minus £2.1 to minus £1.4 (minus £246,000 to minus £168,000 p.a.). None of these costs are policy costs.
155. Total cost to business of this option is therefore £22 to £40 million (£2.5 to £4.6 million p.a.). Policy costs are the same as under option 6, that is, £28.3 to 39.6 million (£3.3 to £4.6 million p.a.).
156. Total cost to business for each option broken down by set of regulation and familiarisation is given in the tables below.

Table 4a - Total cost to business of each option broken down by set of regulation and familiarisation: present value over appraisal period (£ million)

		SC	ROTS	SWC	Familiaris.	TOTAL
Opt. 1	Min	-4.86	-3.34	0	0.37	-7.83
	Max	-1.32	-2.77	0	0.53	-3.56
Opt. 2	Min	-4.86	0	0	0.37	-4.49
	Max	-1.32	0	0	0.53	-0.78
Opt. 3	Min	-4.62	0	0	0.45	-4.17
	Max	-0.73	0	0	0.64	-0.09
Opt. 4	Min	-4.62	-0.15	0	0.67	-4.11
	Max	-0.73	2.92	0	0.96	3.14
Opt. 5	Min	-4.62	-0.15	27.5	1.19	23.9
	Max	-0.73	2.92	37.7	1.70	41.6
Opt. 6	Min	-5.04	-0.15	27.5	1.49	23.8
	Max	1.19	2.92	37.7	2.13	44.0
Opt. 7	Min	-5.04	-2.12	27.5	1.49	21.8
	Max	1.19	-1.45	37.7	2.13	39.6

A negative number indicates a cost saving

Table 4b – Total cost to business of each option broken down by set of regulation and familiarisation: per annum values (£ '000)

		SC	ROTS	SWC	Familiaris.	TOTAL
Opt. 1	Min	-565	-388	0	43	-910
	Max	-153	-322	0	62	-414
Opt. 2	Min	-565	0	0	43	-522
	Max	-153	0	0	62	-91
Opt. 3	Min	-537	0	0	52	-485
	Max	-85	0	0	74	-11
Opt. 4	Min	-537	-18	0	78	-477
	Max	-85	339	0	111	365
Opt. 5	Min	-537	-18	3,195	138	2,778
	Max	-85	339	4,383	197	4,834
Opt. 6	Min	-586	-18	3,195	173	2,764
	Max	138	339	4,383	247	5,107
Opt. 7	Min	-586	-246	3,195	173	2,536
	Max	138	-168	4,383	247	4,600

A negative number indicates a cost saving

Costs to HSE

157. Costs to HSE are roughly the same under all options.

Policy Development

158. The cost of policy development is expected to be equivalent to the cost of employing a band 4 member of staff every year of the appraisal period. Using the mid point of the pay bracket for a band four member of staff (£25,000 per year) the present value cost of policy development is £213,000.

Evaluation

159. As part of the policy development process the HSE will evaluate the impact of the proposed regulations. The evaluation is expected to take place 5 years after the implementation of the regulations at a cost of around £100,000. This has a present value cost of £87,000 (£10,000 p.a.)

Total cost

160. Total cost to HSE under all options is £300,000 (£35,000 p.a.)

Other costs

161. No other costs have been identified under either of the options.

Environmental impacts

162. No significant environmental impacts are expected under either of the options.

Total costs to society

163. Total costs to society are equal to the sum of total costs to business and total cost to HSE for each option. These costs per annum and over the entire appraisal period are shown in the following tables

Table 5a - Total cost to society, balancing percentage and policy costs: present value over the appraisal period (£ million)

		Cost to business	Cost to HSE	Total cost to society	Balancing percentage	Policy costs
Opt. 1	Min	-7.83	0.3	-7.53		0
	Max	-3.56		-3.25		0
Opt. 2	Min	-4.49		-4.19		0
	Max	-0.78		-0.48		0
Opt. 3	Min	-4.17		-3.87		0.12
	Max	-0.09		0.21		0.29
Opt. 4	Min	-4.11		-3.80		0.12
	Max	3.14		3.44		0.29
Opt. 5	Min	23.9		24.2		27.6
	Max	41.6		41.9		38.0
Opt. 6	Min	23.8		24.1		28.3
	Max	44.0		44.3		39.6
Opt. 7	Min	21.8		22.1		28.3
	Max	39.6		39.9		39.6

Table 5b – Total cost to society, balancing percentage and policy costs: per annum values (£ '000)

		Cost to business	Cost to HSE	Total cost to society	Balancing percentage	Policy costs
Opt. 1	Min	-910	35	-875		0
	Max	-414		-378		0
Opt. 2	Min	-522		-487		0
	Max	-91		-56		0
Opt. 3	Min	-485		-450		14
	Max	-11		24		34
Opt. 4	Min	-477		-442		14
	Max	365		400		34
Opt. 5	Min	2,778		2,813		3,209
	Max	4,834		4,869		4,417
Opt. 6	Min	2,764		2,798		3,282
	Max	5,107		5,142		4,600
Opt. 7	Min	2,536		2,570		3,282
	Max	4,600		4,635		4,600

SMALL FIRMS' IMPACT TEST

164. Particular care has been taken to consider the impact on smaller organisations. HSE has liaised closely with the Heritage Rail Association and with the Confederation of Passenger Transport (which represents tram operators) to check that the requirements for these systems are proportionate. The dialogue has, for example, enabled the Heritage Rail Association to propose that it will provide a safety verification service for its members. Our consideration of the change in regulations on small firms was highlighted during liaison with SBS in January 2004. Further dialogue with SBS is planned.

COMPETITION ASSESSMENT

165. As noted in the ‘compliance cost for a typical business’ section, the changes to the SCW Regulations (options 5 to 7) may have a differential impact on firms. Some firms will see their number of safety critical workers increase by a large number while for other firms the proposed changes will have no impact at all. To the extent that these firms are competing in the same market, it could be argued that the regulations will have a differential impact. However, the changes that are likely to have an asymmetric impact concern the extension of scope and the duty of controlling staff undertaking safety critical work. If the differential impact is due to the extension of scope, it could indicate that firms affected and firms not affected may not be in direct competition with one another as their staff carry out different tasks. If the differential impact stems from the duty of controlling staff undertaking safety critical work, it could be argued that the new regulations remove an unfair competitive advantage that firms employing large numbers of, e.g., agency staff had over firms that were making no use of them. As for the other two set of regulations affected, SC and ROTS, no significant competition effects are expected

BALANCE OF COSTS AND BENEFITS

166. [To be completed]

Uncertainties

167. There are a number of uncertainties associated with the above cost/benefit analysis. The main ones relate to the following factors: (1) compliance levels; (2) costs of some of the requirements contained in the ACOP; (3) small sample size from which costs arising from the changes to the SCW Regulations and familiarisation were estimated; (4) total number of additional workers covered following the changes to the SCW Regulations.
168. Throughout the analysis 100% compliance has been assumed. This assumption is likely to hold for changes to the SC Regulations as most firms will need to gain a safety certificate to operate and only a small number of firms will be exempted. However, compliance with the changes to the ROTS Regulations and to the SCW Regulations will not necessarily be full. Specifically, it has been estimated that the level of compliance with current ROTS Regulations is 80%. If the same level of compliance applies to the different options and is extended to the changes to the SCW Regulations, costs to society will be lower. The precise impact on each option is shown in the following table.

Table 10 - Total cost to society with 100% compliance for SC, 80% for ROTS and 80% for SCW: present value over appraisal period (£ million)

		<i>COST TO BUSINESS</i>				TOTAL SOC IET Y	Balancing perc enta ge
			ROTS	SWC	Familiar.³⁴		
Opt. 1	Min	-5.3	-2.6	0	0.32	-7.3	-0.53%
	Max	1.0	-2.2	0	0.46	-0.4	-0.03%
Opt. 2	Min	-5.3	0	0	0.32	-4.6	-0.41%
	Max	1.0	0	0	0.46	1.9	0.17%
Opt. 3	Min	-5.0	0	0	0.39	-4.3	-0.36%
	Max	1.8	0	0	0.55	2.8	0.24%
Opt. 4	Min	-5.0	-0.6	0	0.58	-4.7	-0.35%
	Max	1.8	1.8	0	0.83	4.9	0.36%
Opt. 5	Min	-5.0	-0.6	21.8	1.03	17.6	1.29%
	Max	1.8	1.8	30.0	1.47	35.5	2.61%
Opt. 6	Min	-5.1	-0.6	21.8	1.29	17.8	1.31%
	Max	6.1	1.8	30.0	1.85	40.2	2.96%
Opt. 7	Min	-5.1	-1.7	21.8	1.29	16.7	1.23%
	Max	6.1	-1.2	30.0	1.85	37.2	2.73%

169. Costs to business and society are lower for each option and so is the balancing percentage when compared with the full compliance case.

170. When discussing the cost to business of the ACOP on fatigue it was noted that, due to lack of information, this cost was set equal to the cost of the provision of guidance on hours of work and lifestyle education. However, it could well be larger or smaller than this. In particular, if its cost was twice as much, then the total cost to business of options 5 to 7 would increase by £3.4 to £5.9 million (£390,000 to £681,000 p.a.), while if it was half of it, total cost of options 5 to 7 would fall by £1.7 to £2.9 million (£195,000 to £341,000 p.a.).

³⁴ Compliance with familiarisation has been estimated at 87%, which is the average compliance across SC, ROTS and SCW.

171. As noted in the information sources and background assumptions section, at the time of writing HSE has received full responses to its request of information only from 3 companies. Partial responses were obtained from additional 18. The low number of responses has a negative impact on the robustness of the estimates. Any incoming additional response will be incorporated into the final RIA.
172. The Heritage Railway Association has estimated that 6,000 volunteers are engaged in safety critical work. Costs associated with the changes to the SCW Regulations and relating to these volunteers comprise training, competence assessment, fitness assessment, record keeping and sharing of information (see Table 7). Including these costs would raise the cost of options 5 to 7 by about £25.8 million (£3.0 million p.a.).

ENFORCEMENT AND SANCTIONS

173. As with the present permissioning requirement involving safety cases, railway operation will be prohibited unless an application has been made to, and accepted by, HSE. The existing level of compliance with this basic provision is high. Not only is the requirement well established and known by all parties within the rail industry, it is also formally linked into the checks applied by other regulators such as the Office of the Rail Regulator (ORR) in issuing licences and Strategic Rail Authority (SRA) in issuing franchises. Liaison between SRA, ORR and HSE (or their successor bodies) will continue to be important.
174. HSE inspectors will continue to be able to call upon a range of sanctions including the use of improvement and prohibition notice (with associated appeal processes), and if appropriate prosecution. In addition, HSE inspectors will also have the power to revoke a certificate or authorisation. Revocation is expected to be a last resort reserved for the most serious cases where there is clear evidence that an organisation is unable to maintain an effective safety management system and so should no longer be allowed to operate a railway. Where revocation was under consideration there would be a right of appeal.

CONSULTATION (full/final RIA)

175. [The proposals for the architecture of the regulations arose from the analysis of a long iterative process with rail industry stakeholders, which included their involvement in the evaluation studies on the safety case and the safety critical work regulations and which culminated in the HSC's Discussion Document "Safety on the Railway – Shaping the Future." Bilateral meetings with individual stakeholders and open meetings for all interested parties have been used to develop the policy proposals prior to the HSC Consultative Document. To be completed post CD consultation.]

ARRANGEMENTS FOR MONITORING AND EVALUATION

176. The current specific regulations on safety cases and safety critical work have been subject to evaluation by use of external contractors. The Railways Safety Case Regulations were subject to a full impact evaluation. This information will provide a baseline for future evaluation of the new regulations, which will be undertaken at a suitable date according to the current Cabinet Office guidance.

SUMMARY AND RECOMMENDATION (full/final RIA)

177. [This section will summarise the impact gathered for each option, in a table. It will then state which option is recommended and why, by referring to the analysis of the costs and benefits in reaching the decision.]

Option	Total cost per annum	Total PV costs	Total benefits per annum	Total PV benefits
1				
2				
3				
4				
5				
6				
7				

REGULATORY IMPACT STATEMENT (in addition to partial RIA - responsibility of the Policy contact)

178. [A proposal requires a RIS if it requires collective Ministerial agreement and is significant, ie if it costs more than £20m pa, sensitive, and/or it has a disproportionate impact on a particular group.]

MINISTERIAL DECLARATION (final RIA post consultation)

179. [‘I have read the Regulatory Impact Assessment and I am satisfied that the benefits justify the costs’]

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