

NOTICE, IN ACCORDANCE WITH SECTION 57C OF THE RAILWAYS ACT 1993, AS AMENDED, OF THE OFFICE OF RAIL REGULATION'S PROPOSAL TO IMPOSE A PENALTY ON NETWORK RAIL INFRASTRUCTURE LIMITED

28 FEBRUARY 2008

1. This document constitutes a notice, given in accordance with section 57C of the Railways Act 1993, as amended (the "Act"), stating that:

- (a) the Office of Rail Regulation ("ORR") proposes to impose a penalty of £14,000,000 on Network Rail Infrastructure Limited ("Network Rail");
- (b) the proposed penalty is in respect of a present contravention by Network Rail of condition 7 of its network licence;
- (c) ORR considers that Network Rail is contravening condition 7 of its network licence by not taking, including not having taken, such steps as are necessary or expedient to achieve the purposes in paragraph 1 of condition 7 to the greatest extent reasonably practicable, in that:

it is failing to plan and execute projects for the renewal, replacement, improvement, enhancement and/or development of the network which require possessions in an efficient and economical manner and in accordance with best practice so as to satisfy the reasonable requirements of persons providing services relating to railways and funders in respect of the quality and capability of the network.

The acts and omissions that, in the opinion of ORR, constitute the contravention are more fully set out in Annex A of this notice;

- (d) the other facts which, in the opinion of ORR, justify the imposition of the proposed penalty are set out below in this notice;
- (e) the penalty which ORR proposes to impose on Network Rail relates to continuing conduct of Network Rail, particularly taking into account specific events which have occurred in the past, and it is without prejudice to any other enforcement action and/or penalty which ORR might decide is appropriate in relation to Network Rail's planning and/or execution of projects for the renewal, replacement, improvement, enhancement and/or development of the network which require possessions; and
- (f) in accordance with the Act, the penalty should be paid to the Secretary of State. ORR will specify the date by which the penalty must be paid and the required manner of payment in any final penalty notice given under section 57C(6) of the Act.

2. Representations or objections with respect to the proposed penalty should be made by close of business on 31 March 2008 by post to:

Andy Burgess

Head of Network Regulation

Office of Rail Regulation

One Kemble Street

London WC2B 4AN

Or by e-mail to: andrew.burgess@orr.gsi.gov.uk

3. ORR will publish any representations or objections on its website and may quote from them. Persons making representations or objections should indicate clearly if they wish all, or any part, of their submission to remain confidential to ORR. If such persons make a representation or objection in confidence, they should also send a statement, excluding the confidential information, which they are content for ORR to publish. ORR may also publish the names of persons making representations or objections in future documents or on ORR's website, unless any such person informs ORR that he, she or it wants his, her or its name to be withheld.

Relevant Legal Provisions

4. Under section 57A of the Act, ORR may levy a penalty of such amount as is reasonable if it is satisfied that the licence holder is contravening or has contravened a licence condition. The amount may not exceed 10 per cent of the licence holder's turnover defined in accordance with the Railways Act 1993 (Determination of Turnover) Order 2005 (SI 2005 No 2185). In broad terms, the Order defines applicable turnover as turnover on regulated activity in Great Britain in the business year preceding the penalty notice under section 57C, plus, where the contravention lasted for more than a year, an additional sum for such additional period (provided that the total sum is not more than double the preceding business year's turnover). Network Rail's turnover for 2006-2007 on regulated activity was approximately £5.5 billion.

5. No penalty may be imposed in respect of a contravention unless a notice is served on the licence holder within two years of the time of the contravention.

6. Under section 57A(6) of the Act, ORR shall not impose a penalty if it is satisfied that the most appropriate way of proceeding is under the Competition Act 1998. In this case ORR considers that the issue is one of a breach of a specific licence obligation and is not satisfied that it is appropriate to proceed under the Competition Act 1998 when there is a specific provision in Network Rail's network licence which is being contravened.

7. The relevant condition of Network Rail's licence is condition 7.

8. Condition 7 requires Network Rail, by virtue of paragraph 2, to:

“take such steps as are necessary or expedient so as to achieve the purpose to the greatest extent reasonably practicable having regard to all relevant circumstances including the ability of the licence holder [Network Rail] to finance its licensed activities”.

“The purpose” referred to in paragraph 2 of condition 7 is defined in paragraph 1, and is:

“to secure:

- (a) the operation and maintenance of the network;
- (b) the renewal and replacement of the network; and
- (c) the improvement, enhancement and development of the network,

in each case in accordance with best practice and in a timely, efficient and economical manner so as to satisfy the reasonable requirements of persons providing services relating to railways and funders in respect of:

- (i) the quality and capability of the network; and
- (ii) the facilitation of railway service performance in respect of services for the carriage of passengers and goods by railway operating on the network.”

The Contravention

9. ORR is satisfied that Network Rail is contravening condition 7 of its network licence by not taking, including not having taken, such steps as are necessary or expedient, to achieve the purpose in paragraph 1 of condition 7 to the greatest extent reasonably practicable.

10. In particular, ORR is satisfied that Network Rail is failing to plan and execute projects for the renewal, replacement, improvement, enhancement and/or development of the network which require possessions in an efficient and economical manner and in accordance with best practice. Several areas of concern have led ORR to this view. These include weaknesses in Network Rail’s risk management, its management of suppliers, its site management and its communications with customers and rail users in relation to such possessions. These areas are explained in more detail at Annex A to this notice.

11. In concluding that the contravention is a present contravention, ORR has not (taking into account the nature of the breach) determined the precise date on which the contravention began but it considers that the contravention has been continuing for some time. ORR considers that it is appropriate and in line with its economic enforcement policy for it to focus on the sustained

weaknesses which it has identified in its investigation instead of focussing solely on identifying particular, specific past events which might in themselves have been capable of being contraventions.

12. The penalty which ORR is proposing in this notice particularly takes into account the specific events which have occurred in the past which it considers are a manifestation of the present and continuing contravention.

Whether to Impose a Penalty

13. Section 57B(3) of the Act provides that, in deciding whether to impose a penalty, and in determining the amount of any penalty, ORR must have regard to any statement of policy published at the time when the contravention occurred. In April 2006, ORR published its Economic Enforcement Policy and Penalties Statement.¹

14. At paragraph 5 of ORR's Penalties Statement, ORR states that, in deciding whether to impose a penalty, it will act in accordance with its duties under section 4 of the Act and will take account of five principles of good regulation: proportionality, targeting, consistency, transparency, and accountability¹⁵. ORR also says in its Penalties Statement that the penalty should be proportionate to the nature and severity of the contravention. At paragraph 7 of the Penalties Statement ORR has stated that it will consider, in particular:

- (a) the seriousness of the breach;
- (b) whether the breach or possibility of the breach would have been apparent to a diligent licence holder;
- (c) culpability;
- (d) the extent to which a penalty or reasonable sum would provide additional incentives on the licence holder to remedy the breach;
- (e) the impact the breach has had on third parties;
- (f) whether the licence holder has profited from the breach; and
- (g) the licence holder's record of compliance or non-compliance with this and other obligations and the need to provide an incentive for it to comply with its licence obligations generally.

16. On this basis, following its decision that Network Rail is contravening condition 7, ORR proposes that it should impose a penalty on Network Rail. This notice relates to the present contravention of Network Rail detailed in this notice, and it is without prejudice to any other enforcement action and/or

¹ <http://www.rail-reg.gov.uk/upload/pdf/287a.pdf> The Penalties Statement starts at section 4.

penalty that ORR might decide to be appropriate in relation to Network Rail's planning and execution of projects for the renewal, replacement, improvement, enhancement and/or development of the network which require possessions or more generally.

17. In reaching this decision, ORR has had regard to its economic enforcement policy which is considered in more detail below.

(a) Seriousness of the breach

18. ORR considers that this breach has affected and is continuing to affect Network Rail's ability to renew, replace, improve and/or develop the network.

19. The weaknesses in aspects of Network Rail's risk assessment, supplier management, site management, and communication which ORR has identified in its investigation and which were revealed in the overruns at Rugby, Liverpool Street and Shields Junction have had a serious impact on train operators, passengers and freight customers, and, by damaging the reputation of the railway, on the use of the railway network for the carriage of passengers and goods.

20. The fact that these weaknesses have not been addressed and are continuing makes this breach even more serious. A particular reason for this is that Network Rail is carrying out an increasing volume of work in respect of projects for the renewal, replacement, improvement, enhancement and/or development of the network which require possessions and it needs to be capable of planning and executing these possessions in an efficient and economic manner. Although there are many examples of good practice in planning, risk assessment and project management within Network Rail, ORR has concluded that its ongoing failure to apply these consistently across the network means that this is a serious breach.

(b) Whether the breach or possibility of the breach would have been apparent to a diligent licence holder

21. ORR considers that the possibility of breach would have been apparent to a diligent licence holder and indeed Network Rail had a warning of the implications of not addressing weaknesses in its planning and risk assessment when ORR found it had breached its licence in the Portsmouth case².

(c) Culpability

22. ORR considers that Network Rail is culpable in that it is failing (i.e. has failed in the past and is continuing to fail) to apply best practice in its planning and execution of projects for the renewal, replacement, improvement, enhancement and/or development of the network which require possessions. Even where contractors are and have been involved in the weaknesses,

² see <http://www.rail-reg.gov.uk/server/show/ConWebDoc.8836>

Network Rail is responsible to its customers and funders and should ensure that it has fit for purpose processes in place to manage its contractors as effectively as possible.

(d) The extent to which a penalty would provide additional incentives on the licence holder to remedy the breach

23. As ORR has also issued a notice under section 56 of the Act stating that it proposes to make a final order to secure compliance with the condition 7 it does not consider in this case that a penalty would provide additional incentives on Network Rail to remedy the breach.

(e) The impact the breach has had on third parties

24. The contravention is continuing but there is clear evidence set out in ORR's investigation report of the impact that the weaknesses in Network Rail's processes (i.e. the breach) has already had on third parties particularly as a result of the events at Rugby, Liverpool Street and Shields Junction. The breach has therefore had an unacceptable impact on train operators and on passengers and freight customers in the short term. It is difficult to gauge the longer term impact at this stage, but, as our investigation report sets out, certain train operators have expressed concern about the long-term damage to future business.

(f) Whether the licence holder has profited from the breach

25. ORR has no evidence that Network Rail has profited from the breach. In the particular cases over the New Year period, it has told us that it estimates the cost of the three overruns at Rugby, Liverpool Street and Shields Junction, which are taken into account in our determination that there is an on-going breach, at £21.3m.

(g) The licence holder's record of compliance or non-compliance with this and other obligations and the need to provide an incentive for it to comply with its licence obligations generally

26. ORR has found the licence holder in breach of its licence six times previously since it was acquired by Network Rail Limited.

27. ORR's current investigation has identified significant shortcomings in the following areas – risk management, supplier management, site management, and communication with customers. Furthermore ORR's investigation has highlighted that Network Rail has failed to apply consistently the lessons arising from Portsmouth.

28. ORR considers it is important to use its enforcement and penalty powers to incentivise compliance. Its Penalties Statement calls for a penalty or sum set at the minimum necessary to incentivise compliance. Paragraph 12 of the Penalties Statement makes it clear that this is directed at compliance generally rather than the narrow aspects of the particular breach. ORR also

wants to encourage licence holders to be proactive in securing and maintaining compliance without regulatory intervention.

Assessment of the amount payable

29. When assessing the amount of a penalty ORR has stated in its Penalties Statement that it is likely to consider a number of factors falling into three categories:

- (a) proportionality;
- (b) mitigating and aggravating factors; and
- (c) financing issues.

The factors which ORR has taken into account in respect of this breach in assessing the amount of the penalty are set out below.

Proportionality

30. ORR has stated, in paragraph 10 of its Penalties Statement, that its principal objective in setting a penalty or imposing a reasonable sum will be to incentivise compliance with the relevant condition or requirement.

Context for Network Rail

31. When considering how to incentivise a company such as Network Rail, the impact of a penalty is likely to be largely reputational rather than financial. In this case, ORR considers that a penalty must be sufficiently high to signal unequivocally to Network Rail that it must address the weaknesses in its planning and execution of projects for the renewal, replacement, improvement, enhancement and development of the network which require possessions, while also being proportionate to the breach and consistent with the other factors in ORR's Penalties Statement.

32. In the context of the Portsmouth breach, ORR considered broadly, and without prejudice to future decisions, how breaches by a company such as Network Rail, with its current financial structure, might be categorised by reference to their level of seriousness. "Seriousness" would be likely to be judged by a number of factors, depending on the facts of the individual case, including the impact of the breach on train operators and passengers. In the case of Portsmouth, ORR said that, without prejudice to future cases -

- A "trivial" breach would not usually merit a penalty, although ORR would consider the merits of a penalty in relation to each individual case.
- For "minor" breaches, the range of penalty, where Network Rail has not profited from the breach and before any mitigating or aggravating factors are taken into account, might be up to £2m.

- A “moderately serious” breach would be one that is more than a “minor” breach, taking into account a number of factors including the impact of the breach on train operators and passengers. For such breaches, the range of penalty, where Network Rail has not profited from the breach and before any mitigating or aggravating factors are taken into account might be between £2m-10m.

33. For the reasons set out above, ORR regards that the breach is more serious than any of the categories set out above. ORR considers that if the weaknesses in Network Rail’s planning and execution of projects for the renewal, replacement, improvement, enhancement and development of the network which require possessions are not addressed then the breach could continue to manifest itself in ways which could have a similar impact on third parties to those arising at Christmas and New Year. In exercising its judgment, ORR considers that this is a serious breach. ORR also considers that, in this case and without prejudice to future decisions, the starting point, before any aggravating or mitigating factors are taken into account, for the level of the penalty for contraventions of this nature is in the range of £10m - £25m.

34. Paragraph 10 of the Penalties Statement states that the starting point for any potential penalty or sum imposed should be an amount greater than any benefit for the licence holder from not having been compliant in the first place, such that it will be more expensive for the licence holder to have been or continue to be in breach of its licence condition than to comply. As we explain below Network Rail has not benefited from this non-compliance.

35. Paragraph 11 of the Penalties Statement sets out factors to which ORR shall have regard when setting the level of penalty. These are:

- (a) the amount it would have cost Network Rail to be compliant;
- (b) the cost incurred by third parties as a result of the breach;
- (c) any benefit from non-compliance enjoyed by the licence holder; and
- (d) the desirability of deterring contraventions of relevant licence conditions.

(a) The cost to Network Rail of compliance

36. We do not consider that the cost of compliance for Network Rail is a material consideration in respect of this contravention.

(b) The costs to third parties

37. This breach is continuing. There is clear evidence of the impact of the breach on third parties in the events at Rugby, Liverpool Street and Shields Junction. These overruns that arose as a consequence of the ongoing breach had an unacceptable impact on train operators and on passengers and freight customers. The impact in terms of cost in relation to train operators is unlikely to be significant because it is understood that they will have been or will be compensated under a combination of Part G of the Network Code and

Schedule 4 and Schedule 8 of their track access contracts. However, the cost of the additional disruption to passengers is likely to have been large, although ORR has not tried to quantify this, considering that it was not appropriate to do so for a continuing breach of this nature.

38. It is particularly difficult to gauge the longer term financial impact on train operators and on passengers and freight customers at this stage, but some train operators have expressed concern about the long term damage to future business.

(c) Any benefit to the licence holder from non-compliance

39. Network Rail has not benefited from non-compliance. It has suffered damage to its reputation and is likely to face significant costs.

(d) Desirability of deterring contraventions of relevant licence conditions

40. ORR's primary objective in setting a penalty is to incentivise compliance and to deter future contraventions of licence conditions. ORR considers that the fact that, as a result of this particular breach, Network Rail will probably have to bear significant costs to rectify it does not give it the same incentive to comply with its licence conditions in future as a penalty imposed by its regulator that is in the public domain. ORR therefore considers that a penalty is desirable in this case to deter future contraventions.

Conclusion on proportionality

41. The breach of condition 7 covered by this notice is a continuing and serious breach. Network Rail has not benefited from it; indeed it has incurred significant costs as a result. However, Network Rail's engineering programme is an important part of the renewal and growth of the network and this breach has had and, if not remedied, is likely to manifest itself in further adverse impact on stakeholders and, by damaging the reputation of the railway, on the use of the railway network for the carriage of passengers and goods.

42. Ultimately ORR considers that, having taking into account the factors referred to above, any decision on a proportionate penalty is a matter of judgement and not arithmetic. This is particularly the case where there is a continuing breach and where the full extent of the actual impact on the licence holder and third parties cannot be quantified. Taking all relevant factors into account, ORR has decided that, within the range of £10m to £25m that it would normally consider appropriate for a "serious" breach for a company such as Network Rail, a penalty around the middle of this range would be proportionate for this breach.

Mitigating and Aggravating Factors

43. ORR considers that the relevant mitigating and aggravating factory and any mitigation or aggravation will be a question of fact and judgement for each case.

Mitigating Factors

44. Paragraph 13 of the Penalties Statement sets out a non-exhaustive list of factors that ORR may consider as mitigation. These are:

- (a) *remedial steps to rectify the breach and*
- (b) *any steps taken to minimise the risk of the breach recurring*

45. As this is a continuing breach, ORR has taken these two factors together. Network Rail has proactively conducted internal reviews into Rugby and Liverpool Street. The recommendations include establishing the capability of OLE resources, more robust schedules for complex projects, tests of core assumptions in SQRAs, and making improvements in blockade management and reporting. ORR therefore considers that there should be mitigation under both these headings.

- (c) *co-operation with ORR's investigation*

46. Network Rail has co-operated fully with ORR and has shared the reports of its internal investigations. ORR does not consider that Network Rail deliberately tried to conceal the breach. ORR considers that mitigation should be allowed in relation to Network Rail's cooperation.

- (d) *evidence that the breach was genuinely accidental or inadvertent*

47. ORR does not consider that the breach was genuinely accidental or inadvertent. No mitigation should be allowed under this heading.

Aggravating Factors

48. Paragraph 15 of the Penalties Statement sets out a non-exhaustive list of the factors that ORR may consider as aggravating. These are addressed below.

- (a) *Whether any infringement is deliberate or reckless*

49. ORR considers that the breach is not deliberate or reckless and therefore this should not be treated as an aggravating factor.

- (b) *Repeated or continuing infringement of this or other obligations, particularly if subsequent breaches occur after the licence holder becomes aware of, or is made aware of, the initial infringement*

50. Network Rail has had two warnings of weaknesses in respect of its planning and execution of projects for the renewal, replacement, improvement, enhancement and/or development of the network which require possessions. These were at Sandbach-Wilmslow where we identified a weakness in Network Rail's planning of complex engineering work and the breach at Portsmouth. Although the current breach is broader than that at Portsmouth because it is not limited to one project, after Portsmouth ORR

highlighted in letters to Network Rail the importance in applying lessons from that breach and received assurances that they would be applied. The evidence ORR has seen in its investigation has shown that the lessons have been implemented only partially. ORR therefore considers this to be an aggravating factor.

(c) *The extent of involvement of directors or senior management in the action or inaction which caused the breach or their lack of involvement in action to remedy the breach*

51. The breach involves both the overall approach Network Rail is adopting and its application on the ground. Both of these are the responsibility of Network Rail's senior management who should have ensured that past failings, including those at Portsmouth, were addressed. Network Rail's senior management has been proactive in trying to identify what went wrong in the specific events at Rugby, Liverpool Street and Shields Junction, but ORR remains concerned that the company needs to ensure that action is taken to remedy these weaknesses. ORR therefore considers that this is an aggravating factor.

(d) *The absence of internal procedures intended to prevent infringements occurring and the extent to which organisational weaknesses may result in repeated infringements of the same type by the same licence holder*

52. ORR has identified serious weaknesses in Network Rail's planning and execution of projects for the renewal, replacement, improvement, enhancement and development of the network which require possessions and, if these are not reviewed and addressed, there is a risk of repeated infringement with potentially greater impact. However, this is the subject matter of the breach and therefore ORR does not consider it should have an additional effect on the level of penalty.

53. In this case there are therefore three relevant mitigating factors and two relevant aggravating factors that ORR has taken into account.

Financing Issues

54. ORR has a duty under section 4 of the Act not to make it unduly difficult for a network licence holder to finance those activities in relation to which ORR has functions. In the case of Network Rail, this duty might have a bearing on the level of penalty ORR might impose. In this case, ORR does not consider that the range of the proposed penalty indicated in paragraph 33 would make it unduly difficult for the licence holder to finance its activities, and ORR considers it consistent with its duties under sections 4(1)(b) (to promote the use of the network for the carriage of passengers and goods), 4(1)(c) (promoting efficiency and economy) and 4(1)(g) (enabling persons providing railway services to plan their businesses with a reasonable degree of assurance).

Conclusion

55. Having regard to ORR's duties in section 4 of the Act, the factors listed in paragraph 7 of ORR's penalties statement and for the reasons set out above, ORR has decided that it should impose a penalty in respect of Network Rail's contravention of condition 7 as described in this notice.

56. For the reasons set out above and having regard to the factors listed in paragraphs 9-17 of ORR's penalties statement, ORR proposes that the appropriate amount of the penalty should be £14,000,000.

A handwritten signature in blue ink that reads "Bill Emery". The signature is written in a cursive style with a small dot at the end.

Bill Emery

Chief Executive of the Office of Rail Regulation

The Licence Contravention

1. This annex contains supporting information in relation to the Contravention. It is underpinned by the full facts and findings in the findings report³.
2. Our report reveals significant weaknesses within Network Rail's application of risk assessment and mitigation measures. These fail to reflect adequately the complexity and significance of the work and the potential impact of possession overruns on train operators, passengers, and freight customers.
3. Our assessment of these weaknesses has also taken account of the particular failings at Portsmouth, where one of the areas of concern which led us to conclude that Network Rail was in breach of its network licence was Network Rail's failure to:

“identify risks effectively and to develop adequate mitigation measures, including contingency plans, to address the possibility of extended disruption to services and the potential effect of this on third parties.”
4. We have concluded in our report that these weaknesses are unlikely to be confined solely to the three cases covered by our investigation, and that, based on the evidence we have seen, they are weaknesses which are present to some degree across the organisation and which, unless Network Rail takes action, will manifest themselves from time to time in similar disruptive overruns to those which took place over Christmas/New Year and at Portsmouth.
5. We understand that Network Rail has procedures and processes in place which require that schedule quantitative risk assessments (“SQRA”) and readiness reviews are undertaken in certain circumstances. As we have said in our report, in the case of Rugby, we have found that there was a high level of review and risk assessment in the months preceding the blockade.
6. At Liverpool Street, however, the SQRA process was not satisfactory⁴. Despite the engineering works involving a major possession which involved closing a major London terminus for a significant period of time, the last SQRA which was undertaken in relation to the overhead line engineering work was in August 2007, four months before the work began. Even when there were then later issues regarding the late ordering of materials and late addition of extra work to the blockade around T-4, no further SQRA was undertaken. We do not consider that this is consistent with good practice in the planning of engineering projects which require possessions.

³ Published on our website

⁴ See paragraph 2.58 of our report in particular

7. At Shields Junction (Glasgow), Network Rail dispensed with the application of the SQRA process altogether on the grounds that this methodology had not previously been found to be robust. Network Rail proceeded with the possession without having formally assessed and mitigated significant schedule risks, particularly those associated with signal integration problems that were clearly foreseeable but that which would only be crystallised at the end of the blockade. We do not consider that this is consistent with good practice.

8. We also note that Network Rail has chosen to carry out regular readiness reviews on certain types of signalling blockade which include scrutinising project plans in order to improve the robustness of the blockade plan. While Network Rail has recognised the value in carrying these out for certain types of signalling blockade, it does not apply them more widely to complex and/or significant work in other fields. We consider this a failure to apply good practice.

9. We also consider that the provision of inadequate information by Network Rail to train operators reflects failings in site management identified in our report, including lack of effective reporting lines and knowledge of physical completion of work on site.

10. In particular, our investigation into the three overruns over the Christmas period⁵ has led us to conclude that there is a lack of clear site management reporting milestones during possessions which would provide better visibility for all parties about the volume of physical work remaining and the time required to complete it.

11. In our view, an infrastructure manager applying best practice and adopting an economic and efficient approach would ensure it knows what work has been completed and whether the work is progressing according to its latest plan. It would ensure that it has the right level of understanding through effective site management of the amount of work to be done and the likelihood of an overrun and that it had an adequate chain of communication so that its customers receive timely and accurate information⁶. This is a significant weakness in Network Rail's current approach.

12. Connected with risk assessment and effective site management are issues shown in our report on the management of contractors. We have identified some over reliance on information from contractors, particularly on site, which has affected communication of accurate information.

13. We highlighted in the breach at Portsmouth the need for Network Rail to assess the plans and scrutinise the work of its contractor. We note that at Liverpool Street Network Rail was late to identify before the possession that its contractor had not ordered some essential material. We also note that

⁵ see paragraph 2.109 of our report

⁶ see paragraphs 2.35, 2.69 and 2.94-2.96 of the report.

Network Rail did not appear to challenge the low level of supervision from its contractor at Liverpool Street. All of these factors lead us to conclude that there are current weaknesses in Network Rail's risk assessment and management of its suppliers.

14. In conclusion, better risk assessment and mitigation as part of the planning of the work would address many of the weaknesses highlighted above. Significant improvements could also be made in arrangements with contractors, in site management - so that unexpected events can be dealt with and managed adequately as they arise -, and in communication both within Network Rail and to train operators. We consider that reasonably practicable steps were and are available to Network Rail to address the weaknesses highlighted above.