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24 September 2012

Ms Carolyn Griffiths
Chief Inspector of Rail Accidents
Rail Accident Investigation Branch
Block A, 2nd Floor
Dukes Court
Dukes St
Woking GU21 5BH

Dear Carolyn

RAIB Report: Collision between an articulated tanker and a passenger train at Sewage Works Lane user worked crossing, near Sudbury, Suffolk.

I write to report¹ on the consideration given and action taken in respect of the recommendations addressed to ORR in the above report, published on 11 August 2011.

The annex to this letter provides details of consideration given/action taken in respect of each recommendation where recommendations 1, 3, 4, 5 and 6 have been implemented² and recommendation 2 is in progress.

We do not propose to take any further action in respect of recommendations 1, 3, 4, 5 and 6 unless we become aware that any of the information provided becomes inaccurate, in which case we I will write to you again³. We expect to update you on recommendation 2 by 30 November 2012.

We expect to publish this response on the ORR website on 5 October 2012.

Yours Sincerely

Chris O'Doherty

¹ In accordance with Regulation 12(2)(B) of the Railways (Accident Investigation and Reporting) Regulations 2005

² In accordance with Regulation 12(2)(b)(i)

³ In accordance with Regulation 12(2)(c)



INVESTOR IN PEOPLE

Initial Consideration by ORR

1. All 6 recommendations contained in the report were addressed to ORR when RAIB published its report on 20 November 2008.
2. After considering the report / recommendations, on 7 September 2011 ORR passed:
 - Recommendations 1 to 5 to Network Rail who provided its response on 1 November 2011.
 - Recommendations 6 to Angel Trains Ltd, Eversholt Rail Group and Porterbrook Leasing Company Ltd who provided initial responses:
 - Angel Trains Ltd on 19 October 2011.
 - Eversholt Rail Group on 21 October 2011; and
 - Porterbrook Leasing Company Ltd on 27 September 2011.

ORR also brought the report to the attention of Nexus (Tyne and Weir Metro), and the Heritage Rail Association to bring to the attention of its members, as it was concluded that there are equally important lessons for them.

Recommendation 1

1. *The intent of Recommendation 1 is for Network Rail to remind authorised 'business' users at user worked crossings of their responsibility to brief their own employees and contractors who may not know how to use such crossings safely.*
2. Network Rail should use the circumstances of this accident to remind authorised users who are also businesses of their responsibilities to brief staff and contractors on the safe use of user worked crossings (paragraph 194b).

Details of steps taken or being taken to implement the recommendation

3. Network Rail in its response on 1 November 2011, advised:

The action plan for this recommendation includes work being completed under the Improving Risk Management at Level Crossings Programme – Improving Relationships and Communications with Authorised Users workstream. The plan is;

- *Confirm the list of Authorised Users and type of business use (Note: there is a team already working on this under the Liability Negotiation Manager in Manchester).*
- *Incorporate the lessons learned into the communications strategy*
- *Implement by communicating with relevant organisations and businesses.*

Timescale: 31 May 2012

4. Network Rail in its response on 27 July 2011, provided ORR with copy of its 'closure statement' 30 May 2012:

Extract:

Network Rail used the circumstances of the accident to remind authorised users who are also businesses of their responsibilities to brief staff and contractors on the safe use of user worked crossings. This was done via a communication that was sent to all authorised users who are also businesses.

The communication outlined the accident and incorporated the key lessons learned which were identified as:

- Invitees of the authorised users (in this case sub-contract hauliers) were failing to use telephones at level crossings which were provided for their safety.
- The risk assessment carried out by the authorised user had not been briefed to their sub-contractors.
- The safe method of working was not adhered to and was inadequately monitored.

The communication then outlined that Network Rail would like to work with authorised users to prevent this type of accident occurring in the future and how Network Rail will do this. It then went on to make clear Network Rail's intention to provide users with accurate live information that will lead to safety at user worked crossings with telephones. Finally it reminded them of their responsibilities to brief employees and contractors on the safe use of user worked crossings.

The National Level Crossing Team valued that Authorised User [AU] contact data was a national issue and as a result the Central Libraries Team spent the last 12 Months gathering the latest AU data. This was the first national concerted effort to attain and maintain data integrity on AUs. This data is now being uploaded onto ALCRM, the data being held includes everything from name, address and telephone number of the authorised user, to the type of vehicle they use, the type of user e.g. children under 12, disabled etc. if they are transporting dangerous goods. Finally the process for the route to inform Liabilities with any updated AU personal information they receive is being mandated in The Operations Manual 5-16.

The lessons learned have been incorporated into the communications strategy, which has been developed as part of the wider National Level Crossings Improvement Programme. The standards have been amended to prescribe that AUs are involved and considered in the risk assessment process. The AUs will also be sent a follow-up output communication of risk assessment which includes a reminder of the AU's responsibilities and safe use of the crossing.

Network Rail also advised:

Please note that following a collision between a train and a car at a user worked crossing in Norfolk (12th July 2012), all AUs with email addresses were sent a note and the remaining AUs have been/ are being sent a letter. The letter contains the following:

- Summary of the accident
- The measures being undertaken to enhance the management of risk at LCs:
 - Developing an Authorised User pack containing safety and contact information
 - Strengthening the process for inviting Authorised Users to participate in the risk assessments at their crossings and incorporating their input into the assessment
 - Making risk assessments available on the Network Rail website
 - Broadening our processes so that in future results of risk assessments will be shared with Authorised Users
 - Recently writing to all business users advising them of a collision at Sewage Works Lane crossing and reminding them of their legal responsibilities.

- *Updating contact detail for all Authorised Users*
- *Introduction of Level Crossing Managers*
- *A reminder to consider all safety factors when using the crossing.*

The letter mentions the crossing user, their family, visitors, staff and contractors.

ORR Decision

5. Through this response and ORR inspections of Network Rail, ORR is content that shortcomings in communication with the users of user-worked crossings have been recognised by Network Rail as a weakness, and Network Rail now has a written programme of action to address this, which has been shared with ORR.
6. ORR also acknowledges the contribution made by Network Rail in a number of recent user-worked crossing safety events, aimed largely at the utilities sector.
7. ORR can see no reason to restrict any educational initiative to business users of crossings, and Network Rail is not restricting its activities in this way, or a particular reason why the precise circumstances of the Sewage Works Lane accident must be used to remind crossing users of their responsibilities.
8. ORR in reviewing all the information received from Network Rail concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:
 - taken the recommendation into consideration; and
 - has taken action to implement it.

ORR will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: *Implemented*

Recommendation 2

The intent of Recommendation 2 is for Network Rail to consider ways of managing the predictable risk that arises at user worked crossing equipped with telephones where long waiting times are frequently experienced by road users.

Network Rail should consider ways of managing the risk at user worked crossings equipped with telephones where long waiting times can arise as a result of the signaller having no means of knowing where trains are located, and implement any reasonably practicable measures identified (paragraph 195a).

Details of steps taken or being taken to implement the recommendation

9. Network Rail in its response on 1 November 2011, advised:

A Workshop is to be held to consider different ways that this risk can be managed by 30 November 2011.

New technologies and / or techniques are to be trialled by 31 December 2012.

Timescale: 31 December 2012

10. ORR was not satisfied that the initial response from Network Rail adequately addressed the recommendation and that Network Rail should be in a position to provide further details. ORR therefore wrote to Network Rail on 28 November 2011 asking for a summary of progress made, along with plans for implementing measures at affected crossings.

11. Network Rail in its response on 15 December 2011, advised:

Network Rail has been exploring new technologies for identifying and tracking the location of trains within long signal sections. This work has progressed rapidly since the initial response to the report/recommendation. Two systems were demonstrated on site at Sewage Works Lane on 2nd December 2011 – as attended by the ORR. The systems were;

- *Nexus Alpha – train borne tag which broadcasts a pulse which is detected by track side equipment up to 100m away. When the presence of the train is detected a message is sent, via a server, to equipment at the crossing which then displays a warning of the approaching train.*
- *Futronics – a satellite (GPS) tagging system which monitors the location of the train. A train borne GPS aerial is connected to a modem which broadcasts simultaneously on 4 mobile phone networks to a server, which in turn is connected to equipment at the crossing. A virtual ‘geofence’ surrounds the crossing and when the train reaches the ‘geofence’ a warning is activated at the crossing.*

These demonstrations were very positive and favourable feedback was received from the ORR regarding both the equipment and the progress that had been made. The plan is to move to full trial on the Sudbury branch in January 2012

12. Network Rail has installed the ‘Futronics’ global positioning based system at the Swage Works Lane User Worked crossing with telephone (UWCT) and on the other UWCT on the Marks Tey to Sudbury branch line.

13. ORR was not satisfied that the response from Network Rail adequately addressed the second part of the recommendation to ‘...implement any practicable measures identified.’ ORR therefore wrote to Network Rail on 10 April 2012 requiring Network Rail to advise ORR when it expects to have completed the trials on the Sudbury branch and will be able to provide ORR with the outcomes of the trials, including reasoning and conclusions.

14. ORR also requested that Network Rail, following the trials, advise what actions, including any associated timescales, it will be taking to manage the risks at UWC(T) across its railway network where long waiting times are experienced by road users.

15. Network Rail in its response on 25 April 2012, advised:

The trial is due to complete July 2012.

Phase 1 of the trial, providing better information on the whereabouts of the train to the signaller, is operational.

Phase 2, providing information to users, involves a hazard and operability study HAZOP, which is taking place 24th and 25th April 2012.

Depending on completion of a successful trial on the Sudbury line, locations to roll out the solution are being identified. Currently site surveys are taking place in Wales on the 'Heart of Wales and Cambrian line'. Surveys, including testing mobile phone coverage, are taking place in Scotland in the Highlands. In England Network Rail has identified the Boston to Skegness line as potentially suitable.

A commitment has been made to implement a solution at long sections at 200 crossings by the end of CP4 with the remaining long sections to follow in CP5.

A further update will be provided post trial.

The ORR is being kept informed of the progress of the trial currently underway on the Sudbury line and this will continue.

16. Network Rail in its response on 27 July 2012, advised:

17. *Phase 1 of the Sudbury trial is nearly complete (trains fitted with GPS, control screen used by signallers at Liverpool Street CC). Phase 2, which is the installation of warnings at the crossing should complete by Oct 2012. At the moment, work is underway between the Head of Level Crossings, the Programme Manager (Change) Network Operations and the Commercial Scheme Sponsor (Network Operations) to determine exactly what the warning needs to be.*

18. ORR will monitor and review the results from the Sudbury trials and update RAIB when complete.

ORR Decision

19. ORR in reviewing all the information received from Network Rail concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- is taking action to implement it.

Status: In progress, ORR will update RAIB by 31 January 2013

Recommendation 3

The intent of Recommendation 3 is for Network Rail to clarify, enhance and provide additional guidance on its requirements for information gathering and consultation with authorised users at user-worked crossings so that local factors can be properly dealt with in the risk assessment process.

Network Rail should review the relevant procedures in its Operations Manual and make, as a minimum, the following requirements explicit:

- a. correspondence should be sent to all authorised users when trigger risk assessments are to be undertaken inviting them to participate, as well as when routine risk assessments are planned;
- b. engagement with authorised users should be sought as part of the response to near-miss incidents;

- c. reference to information held within the controlling signal box such as requests to use the crossing and the occurrence book should be a mandatory element of data gathering for all risk assessments; and
- d. where businesses are authorised users and have a facility in close proximity to the crossing, independent sources (such as site logs) should be sought and used, where possible, to obtain intelligence on crossing usage for all risk assessments (paragraph 195b and 195c).

Details of steps taken or being taken to implement the recommendation

20. Network Rail in its response on 1 November 2011, advised:

The four elements to this recommendation are covered within the Improving Risk Management at Level Crossings Programme.

Points a) and b) will be incorporated within the Improving Relationships and Communications with Authorised Users workstream.

Points c) and d) will be incorporated within the Use of Intelligent Sources during Risk Assessment workstream.

Timescale: 31 May 2012.

21. Network Rail in its response on 27 July 2011, provided ORR with copy of its 'closure statement' 30 May 2012:

Extract:

Part A and B have been actioned with the amendment of the Operations Manual Procedure NR/L3/OCS/041/5-16 clause 9.5 to include the following actions for trigger risk assessments: Misuse and Near Misses will require the following action: Make contact with authorized user to invite them to attend the risk assessment. Accidents will require the following action: If appropriate, make contact with authorised user to invite them to attend the risk assessment. The operations manual procedure goes on to state that the 'ORCC [Operational Risk Control Co-ordinator] shall document the method of contact and attempts to contact authorized users in the relevant level crossing file.'

Part C is fulfilled by clause 6.6 now stipulating that the ORCC 'request crossing usage information held by the controlling signal box for user worked crossings for use in risk assessments, e.g. request to use the crossing and the occurrence book' making it a mandatory element of data gathering for all risk assessments. It also now has a clause (fulfilling part D) stating that if the crossing's authorized users are business then the 'ORCC shall include a request for information on crossing usage from sources held by the business, e.g. site logs, for use in risk assessments.'

ORR Decision

22. ORR in reviewing all the information received from Network Rail concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- has taken action to implement it.

ORR will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: *Implemented*

Recommendation 4

The intent of Recommendation 4 is to ensure Network Rail reviews the safety of Sewage Works Lane UWC with Anglian Water to identify the measures that can be taken by one or both parties to address the safety risk.

Taking account of the accident on 17 August 2010 and intelligence in this report about the extent of misuse at the crossing, Network Rail should, in conjunction with Anglian Water, make a thorough and realistic assessment of the risk at Sewage Works Lane UWC, making allowance for local factors at the crossing that influence the risk to users, with a view to identifying and implementing measures to reduce the risk to all users at the crossing. This assessment must include consideration of options to manage the risk of misuse arising from long waiting times for road users (paragraphs 195e and 195f).

Details of steps taken or being taken to implement the recommendation

23. Network Rail in its response on 1 November 2011, advised:

Network Rail, in conjunction with Anglian Water, undertook a thorough and realistic assessment of the risk at Sewage Works Lane UWC. It made allowance for local factors at the crossing that influence the risk to users (e.g risk of misuse arising from long waiting times for road users), with a view to identifying and implementing measures to reduce the risk to all users at the crossing.

The actions arising from the assessment were:

- *Anglian Water's risk assessment was briefed out to all their staff and contractors (September 2010)*
- *Anglian Water erected additional signs at the crossing to reinforce their local instructions (March 2011)*
- *An acoustic hood was installed along with a an improved phone (to mitigate against the wind noise) and a new white LED beacon was installed to indicate incoming calls for when Anglian Water staff are waiting for a call back from the signaller on the phone. (July 2011)*

Miniature warning lights are to be installed at the crossing (due to complete December 2011).

In addition, when Network Rail were informed that some Anglian Water staff were hard of hearing, contact was made with the Anglian Water manager to advise that the phone was fitted with a hearing loop and this was briefed out to all their staff and contractors.

Following a reconciliation of all Anglian Water's duty logs with Network Rail's crossing log at the signal box (for the month of June 2011) along with the voice tapes, this highlighted that there was some confusion on the need to call back between the signaller and Anglian Water staff. A special signal box instruction was

therefore issued to Liverpool Street staff to ask all users of the crossing to call back regardless of whether they are crossing with a vehicle which is long or slow moving, so that instructions for both parties are the same.

Timescale: Complete

ORR Decision

Network Rail has installed the 'Futronics' global positioning based system at the Sewage Works Lane User Worked crossing with telephone (UWCT) and on the other UWCT on the Marks Tey to Sudbury branch line.

This system monitors train positions using GPS and displays their positions on a screen in the signal box. The screen turns red when a train approaches any of the UWCTs on the branch line and a red light, warning sign and audible warning is activated at the UWCTs when a train approaches.

24. ORR in reviewing all the information received from Network Rail concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- has taken action to implement it.

ORR will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: *Implemented*

Recommendation 5

The intent of Recommendation 5 is for Network Rail to review the costs and benefits of combining the data gathering, processing and assessment roles for level crossing risk assessment, taking account of the possible benefit of one person or a dedicated team having all the necessary knowledge to make an accurate assessment of the risk.

Network Rail should review its level crossing management processes to establish the costs and benefits of making data gathering, processing and risk assessment of a level crossing the responsibility of a single person or a dedicated team with a comprehensive understanding of the operating environment at that crossing, and make changes to those processes as appropriate in the light of the outcome from the review (paragraphs 195e, 195f and 195g)..

Details of steps taken or being taken to implement the recommendation

25. Network Rail in its response on 1 November 2011, advised:

Network Rail is already progressing this through a workstream of the Improving Risk Management at Level Crossings Programme. The Dedicated Resource workstream has a Project Manager who is reviewing the tasks of data collection, risk assessment and inspection of level crossings with a view to organisation change.

Timescale: 31 May 2012.

26. Network Rail in its response on 27 July 2012, advised:

This recommendation was due to complete 31 May 2012, with the introduction of dedicated Level Crossing Managers, making the data gathering, inspections and risk assessment of a level crossing the responsibility of a single person. However, as rollout is on a phased basis through to 31 December 2012, the completion date has been revised to 31 December 2012. Phase 1 saw 1 route- Scotland introduce a dedicated resource 31 May 2012. Anglia will go live end August 2012 & remaining routes will retain current arrangement until after the Olympics & will roll out end November 2012

ORR Decision

27. ORR considered the initial response from Network Rail to be short, but noted it does refer to plans for organisational change already shared with ORR. ORR is content that Network Rail's action plan and delivery date are reasonable.

28. ORR in reviewing all the information received from Network Rail concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- is taking action to implement it.

ORR will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: Network Rail is taking action to implement the recommendation

Recommendation 6

The intent of Recommendation 6 is for owners and operators of Class 156 units to cooperate on producing a review of the crashworthiness performance of the tables and determine whether the table design should be changed. This review may have relevance for other classes of rolling stock which share a similar design of table to the class 156.

Owners of class 156 units should assess whether or not there is a case for improving the crashworthiness performance of the tables on Class 156 units and implement any measures found to be reasonably practicable. When undertaking this assessment, the owners should seek the co-operation of operators of Class 156 units (paragraph 196).

Details of steps taken or being taken to implement the recommendation

29. **Porterbrook Leasing company** in its response on 27 September 2011, advised:

Porterbrook has employed a contractor to consider an alternative design that can be adopted with respect to Class 156 tables. The information received from this work will be input to an assessment for reasonable practicability.

Porterbrook has also requested the preliminary cost benefit analysis study undertaken by RAIB as part of this investigation. It is the intention to build on this

with information received from the design study and liaison with other operators and owners of Class 156 units.

Porterbrook expect to provide an update of its progress regarding the above action by April of next year [2012].

30. ORR noted that Angel Trains Ltd's and Porterbrook Leasing Company's action were dependant on the cost benefit study by RAIB and there was a long time lag before they expected to be in a position to report the reasonably practicability assessment. ORR therefore wrote to Angel Trains Ltd and Porterbrook Leasing Company on 28 November 2011 asking an update on progress being made.

31. **Porterbrook Leasing company** in its response on 2 February 2012, advised:

Porterbrook has employed a contractor to consider an alternative design that can be adopted with respect to the Class 156 tables. This design has now been developed and associated costs established. This information has been put into an assessment for reasonable practicability.

Further detail on injuries sustained during the incident will be provided by RAIB on 3 February [2012].

Porterbrook expect to have completed the analysis shortly and be in a position to provide detail of its proposed actions regarding reasonable practicability by March this year.

32. **Porterbrook Leasing company** in its response on 30 March 2012, advised:

Porterbrook has had an alternative design developed that can be adopted with respect to the class 156 tables. These tables will be fitted as part of the C6 overhaul which is due to start in June this year [2012] Porterbrook has now ordered replacement tables to this design for all class 156 vehicles on lease with Abellio Greater Anglia. It is also Porterbrook's intention to fit the revised table design to its other fleets of Class 156, with East Midlands Trains and Northern, during their next scheduled C6 overhaul.

ORR Decision

33. ORR in reviewing all the information received from Porterbrook Leasing company concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Porterbrook Leasing company has:

- taken the recommendation into consideration; and
- has taken action to implement it.

ORR will write to RAIB again if it becomes aware that the information above is inaccurate.

Status: Implemented

34. **Angel Trains Ltd** in its response on 19 October 2011, advised:

Angel Trains Ltd has considered the recommendation and is working in conjunction with Porterbrook Leasing Company to address it.

To-date a contractor has been employed to consider an alternative design of table that can be used as a replacement to the existing Class 156 tables. The output from this work will be used as the basis for an assessment of whether a reasonably practicable solution can be identified.

In support of the above work Porterbrook Leasing has requested a copy of the preliminary cost benefit analysis study undertaken by RAIB as part of the investigation. Once this has been received, it will be used to support the reasonably practicability assessment alongside the design study and further information that may be available from operators.

Angel Trains Ltd expects to be in a position to provide an update by April 2012.

35. ORR noted that Angel Trains Ltd's and Porterbrook Leasing Company's action were dependant on the cost benefit study by RAIB and there was a long time lag before they expected to be in a position to report the reasonably practicability assessment. ORR therefore wrote to Angel Trains Ltd and Porterbrook Leasing Company on 28 November 2011 asking an update on progress being made.

36. **Angel Trains Ltd** in its response on 31 January 2012 (copied to Porterbrook Leasing company), advised:

Angel Trains Ltd is progressing towards reporting the reasonable practicability assessment for the replacement of existing tables on Class 156 vehicles.

An alternative design of table has now been produced that can be used as a replacement to the existing Class 156 tables. The design will be readily adaptable to alternative interface bracketry for other vehicles and fleets if required. The production of new tables in accordance with this design has been costed and these costs are being used to develop a cost benefit analysis.

Angel Trains Ltd expect to be in a position to provide the conclusions of this work identifying the reasonable practicality of these replacement tables by March 2012.

37. **Angel Trains Ltd** in its response on 30 April 2012 (copied to Porterbrook Leasing company), advised:

38. *Following a review of the cost benefit analysis, based on an improved table design developed by a consultancy, Angel Trains believes that, as a safety investment to the class 156, this modification should be regarded as not justified on the basis of safety benefit accrued as it does not realise sufficient benefits over the remaining fleet life for the routes operated by Angel Trains' vehicles to justify the required investment.*

39. *Angel Trains will be consulting with its customers who operate 156s to ascertain that this position meets their requirements.*

40. *However notwithstanding the above, as part of the Continued Service Operation, PRM TSI [Persons with Reduced Mobility Technical Specification for Interoperability] compliance and refurbishment works being taken over the next few years, Angel Trains will be considering the need to replace tables on relevant fleets, potentially including Class 156s, on a programme specific basis at which time an improved table design will again be considered.*

41. ORR was not satisfied that the response from Angel Trains adequately addressed the recommendation. ORR therefore wrote to Angel Trains on 9 May

2012 asking for sight of the supporting information to show how Angel Trains came to this decision and to provide the anticipated dates of 'C6' overhaul of class 156 units.

42. **Angel Trains Ltd** in its response on 26 June 2012 advised:

This modification should be regarded as not justified on the basis of safety benefit accrued as it does not realise sufficient benefits over the remaining fleet life for the routes operated by Angel Trains' vehicles to justify the required investment.

43. Angel Trains provided ORR with a copy of its cost benefit Analysis.

This report identifies the areas considered, the likely benefits and the cost benefit of carrying out any changes to the existing tables.

Angel Trains is currently in discussion with its customers who operate class 156 trains to ascertain their views and that this position meets their requirements.

As previously stated, as part of the on-going Continued Service Operation, PRM TSI compliance and refurbishment works being taken over the next few years, Angel Trains will be considering the need to replace tables on relevant fleets, potentially including Class 156s, on a programme specific basis at which time an improved table design will again be considered.

The anticipated dates for these programmes of work would be:

<i>First ScotRail</i>	<i>Q3 2015 – Q2 2018 on an outcome of a course programme</i>
<i>Northern Rail</i>	<i>Q1 2014 – Q3 2015 on C6</i>
<i>EMT</i>	<i>Q1 2014 – Q3 2015 on C6</i>

ORR Decision

44. ORR accepts the findings of Angel Trains cost benefit analysis.

45. However, ORR will review Angel Trains re-consideration of its position at the time of C6 overhaul or refurbishment of its class 156 fleets.

46. ORR in reviewing all the information received from Angel Trains Ltd concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Angel Trains Ltd has:

- taken the recommendation into consideration; and
- has taken action to implement it.

ORR will write to RAIB again if Angel Trains decide to fit the new design of tables or if it becomes aware that the information above is inaccurate.

Status: Implemented

Angel Trains will reconsider the possibility of replacing tables on relevant fleets during C6 overhaul or major refurbishment.

47. **Eversholt Rail Group** in its response on 21 October 2011, advised:

Eversholt Rail does not own any class 156 units nor does it have other units with identical design of tables. Many of its older fleets are suburban EMUs and so do not have any tables. However, Eversholt Rail has undertaken a review of the design of tables on its older fleets where there was a possibility that aspects of the design were similar to the Class 156.

The fleets reviewed were:

- *MkII locomotive hauled coaches used on the First ScotRail sleeper service;*
- *Class 158/9 DMU;*
- *Class 321 EMU first class tables; and*
- *Class 365 EMU first Class tables*

MkII Loco Hauled Coaching Stock (LHCS)

Of the 22 sleeper support vehicles on the First ScotRail services, only two Restaurant First Open (RFO) have tables that are similar to the class 156 arrangement. However, these tables have two substantial brackets that secure each table to the body side in addition to the table leg which is of rectangular cross section, although it is similar to the class 156 arrangement at floor level.

Class 158/9 DMU

The tables have three legs like the class 156 except that the two legs adjacent to the body side are shorter and are secured to the body side rather than the floor. There is an additional bracket that secures the table top to the body side and the edging is rounded, which will reduce the risk of injury. The main difference in design is that the single table leg is connected to the top by a substantial bracket that spans most of the width of the top and will distribute any loads applied to the table top.

Class 321 EMU

Tables are only fitted to a portion of the fleet, which were the units originally used on Euston outer suburban services. There are some miniature tables in standard class but the size and shape of these tables, which is fundamentally different to the class 156 arrangement, make injury unlikely. The first class table tops are connected directly to the body side with a single leg that is similar to the class 156 but is secured to the floor and table top with more fastenings and larger end plates than used on the class 156.

Class 365 EMU

The first class tables in these units are a more modern design than those used on earlier fleets. Whilst they are not fully compliant with the latest standards, the tops have deep edges with a substantial radius. The supporting brackets are considerably more robust than those fitted to earlier table designs.

For the reasons described above, no retrospective action is proposed on any of the above table designs but this position will be reviewed in the event of any future interior refurbishment on these or other fleets.

ORR Decision

48. Eversholt Rail Group does not own class 156 units nor does it have other units with identical design of tables. However, Eversholt Rail Group has reviewed other classes of rolling stock which share a similar design of table to the class 156

and concluded that the table fixings are more robust than those on class 156 units and that no retrospective action is required.