Oliver Stewart
RAIB Recommendation Handling Manager
T: 020 7282 3864
M: 07710069402
E-mail oliver.stewart@orr.gov.uk

10 May 2021

Mr Andrew Hall
Deputy Chief Inspector of Rail Accidents
Cullen House
Berkshire Copse Rd
Aldershot
Hampshire GU11 2HP

Dear Andrew,

RAIB Report: Near miss incident at Ufton Automatic Half Barrier Crossing, Berkshire on 4 September 2011

I write to provide an update[1] on the action taken in respect of recommendations 2, 4 & 5 addressed to ORR in the above report, published on 20 December 2012.

The annex to this letter provides details of actions taken in response to the recommendations and the status decided by ORR. The status of recommendations 2, 4 & 5 is **'Implemented'.**

We do not propose to take any further action in respect of the recommendations, unless we become aware that any of the information provided has become inaccurate, in which case I will write to you again.

We will publish this response on the ORR website on 11 May 2021.

Yours sincerely,

Oliver Stewart

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

Recommendation 2

The intent of this recommendation is to provide an interface which reduces the likelihood of IECC signallers setting a route over an automatic half barrier level crossing under local control without advising the level crossing attendant and cautioning the train driver.

The intent will be satisfied if a similar message is displayed in other crossing failure conditions and/or if the interface is provided within IECC software in a manner which provides a lower safety integrity level than required for some other signalling applications.

In respect of automatic half barrier level crossings supervised from IECC installations, Network Rail should consider interfacing information about level crossing status with signal controls to reduce the risk of signallers permitting a train to pass over the crossing without applying the rules applicable to local control.

Network Rail should include consideration of a warning or reminder which must be acknowledged on each occasion that a signaller attempts to set a route over a level crossing under local control. If found practical, Network Rail should modify standards and specifications to require this feature in future IECC upgrades and new installations.

ORR decision

1. Network Rail will address the recommendation by making changes to the IECC standard (RT/E/S/10067) to include a reminder that will prevent a proceed aspect being shown from all signals that protect a movement over a level crossing. Revising the standard will take some time, so as an interim measure Network Rail has issued a Technical Instruction to its main signalling suppliers.

2. Following analysis carried out in 2014, Network Rail initially planned to address the recommendation as part of the traffic management system. However, as the traffic management technology developed and was assessed, Network Rail chose to place the focus back on implementing separated signalling control systems. This approach would protect the level crossing, rather than the protecting signal. Any conflicting route will be barred by the control system. They system could be interfaced to a separated traffic management systems at a later date.

3. Network Rail are planning to trial a system incorporating the new requirements as part of the Port Talbot resignalling scheme.

4. After reviewing the information provided ORR has 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

Status: Implemented.

Previously reported to RAIB

5. On 13 October 2014 ORR reported the following:

Network Rail has still to decide on how the functionality may be implemented either as part of the first deployment of Traffic Management (December 2015), or, subject to risk assessment, implemented first in the next tranche of Traffic Management deployments.

Update

6. On 15 January 2021 Network Rail provided the following closure statement:

Ufton Rec 2 Closure Statement_ (002).do

7. *Network Rail state the following:*

The recommendation has been addressed by defining a requirement for a new form of reminder appliance that can be applied to the level crossing symbol on all types of VDU based signalling control systems (not just IECC control systems as stated in the original recommendation). This reminder prevents a proceed aspect being shown from all signals that protect a movement over the crossing. As with other "inhibits" on signalling control systems, the signaller can then use the reminder override function to show a proceed aspect on a one-shot basis. For AHBs, this reminder can be automatically applied when the crossing enters failed/local mode. The outcome is that passage over the crossing will be automatically inhibited when an AHB crossing has failed or entered local operation and the signaller will need to take an explicit action to give a movement authority for each train that approaches the crossing.

The feasibility of implementing this reminder (within the control system) has been discussed and agreed with the three main current signalling system providers (Siemens, Alstom and Resonate). Working collaboratively with NR Ergonomics, Siemens have already developed an early prototype of the software for the Port Talbot scheme (for application for protecting vehicular movements over user worked crossings). The new requirement will be added to NR standard NR/SP/SIG/10067. Recognising that an update to this standard cannot be issued quickly, the standard owner has agreed to the issue of a Technical Instruction that instructs suppliers of the requirement and which will be incorporated into the standard within a year.

Technical Instruction 176 addresses Recommendation 2 (starts on P76 of the standard).

RT_E_S_10067.pdf

TI176 VSCS Crossing Reminder with Signal

Recommendation 4

The intent of this recommendation is to ensure that the planned arrangements for setting up, alteration and handing back of possessions, and any planned signalling input to associated activities, does not cause an excessive workload for any signaller.

Network Rail should examine and implement ways in which the workload of signallers can be kept within reasonable levels during engineering possessions, particularly those involving multiple changes to possession limits. This work should aim to avoid, where practical, situations in which signallers must delay engineering work or train services in order to avoid excessive workload (paragraphs 155 and 157).

ORR decision

8. On 30 November 2020 ORR and Network Rail held a workshop to consider outstanding matters and the path to resolution for a number of old RAIB recommendations relating to level crossings. The Ufton recommendations were among those discussed.

9. Mike Carey, Network Rail lead for Human Factors, recapped the various efforts Network Rail had made to design a workload assessment tool that would realise the intent of the recommendation by factoring in all tasks associated with possessions of various complexity. It had proved impossible – though great strides had been made more generally in signaller workload assessment. Network Rail proposed no further action, as it believed the other measures it had described demonstrated the limits of reasonably practicable delivery of the recommendation.

10. Subsequently, a group of ORR inspectors met to review all the material provided by Network Rail. We have considered the previous information provided by Network Rail in conjunction with their most recent, 26 Nov 2020 summary. Taken together, we consider that Network Rail have now examined and implemented an appropriate suite of relevant actions to implement Rec 4, including work to improve:

11. The methods used to assess likely signaller workloads have brought significant improvements in assessing routine activities and scope for taking line blockages, but such methods are not realistically able to meaningfully predict the likely workloads imposed by more complex, and in reality dynamic, engineering possessions.

12. The competence management of signallers, to ensure they have, and maintain, the requisite skills (technical and non-technical) has been improved compared to the regime at the time of the Ufton incident.

13. The consideration of signaller workload during the possession planning process (Network Rail standard NR/L2/OPS/202) is the most reasonably practicable way of addressing the intent of the recommendation. It relies on the contribution of suitably experienced staff with practical operating knowledge to highlight where possessions might be too demanding for the usual signalling complement. We will carry out some assurance work to see how the standard’s requirement (section 5.5h)

for involving operations expertise during the possession planning process is applied in practice – in particular ensuring that suitable staff are employed and that Ops contribute at all relevant stages of possession planning.

14. After reviewing the information provided ORR has 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

Status: Implemented.

Previously reported to RAIB

15. On 13 October 2014 ORR reported the following:

'Brief Summary on what was previously reported to RAIB on 17 June 2013

Network Rail has identified that the workload of a signaller has increased not only due to engineering requests but also in the number of requests for Line Blockages.

The Line Blockage tool is the first of a number of tools to identify and recommend limitations on the workload of Signallers. It is hoped that the line blockage tools will be fully in place by March 2013 with a review and feedback event planned for June 2013 to feedback in to the National Line Blockage Group.

The next step is to look at Engineers Possessions and to understand the planning process so the workload can be managed at this stage rather than when it gets to the signaller.

Update

16. *On 1 September 2014, ORR obtained a verbal update from Network Rail: Informal feedback up to now suggests a broadly positive reaction to the trialled procedures for assessing possession signaller workload overall, but some pushback from some Operations Managers (OMs) due to the procedure giving OMs some more work.*

Network Rail believes the process needs some more development but can't be firmer than this until they have reconvened to properly discuss findings with staff involved in the 2 month trial – meeting planned by end of September 2014 following summer leave absences.

Network Rail intends to update ORR by 30 September 2014.

Update

17. After timescale extensions Network Rail provided the following close out statement on 26 November 2020:

The original intention was to develop a workload tool that could be deployed by possession planners to identify possessions with "high" signaller workload and provide a range of clearly defined mitigations in the signaller and/or planner work space in the form of simple quantitative limits and/or additional resource solutions.

Network Rail ergonomists developed a tool derived from a similar model deployed for line blockages and it was subsequently trialled with planners and operational staff. However, from the evidence of the trial and subsequent consideration of the predictive value of the tool it was apparent that the translation of this approach into the field of possession planning and management was not only a greater challenge but likely to deliver a far less comprehensive or efficacious outcome than those involved originally anticipated.

The conclusion from the development work undertaken between 2013 and 2015 was that modelling the variables related to possessions and the other often transient and unpredictable activities and events that potentially demand the attention and intervention of the signaller had not been sufficiently successful to support the deployment of the tool as a normal part of the planning process.

Whilst the concept of developing a usable tool has not been abandoned the prospects of a break-through within an acceptable timescale are considered slender and priority has therefore been directed towards the implementation of other measures.

Concerns about progress with the recommendation and the challenges that had emerged around the development of a signaler possession workload tool were discussed with Anna O'Connor from ORR at the RAIB Investigation Review Meeting in September 2015. At the meeting it was agreed that Network Rail would adopt a broader strategy towards the control of "excessive" signaller workload related to possessions rather than rely entirely on an approach built around a critical dependency on a single workload prediction tool.

Given the significant limitations experienced in predicting the timing and significance of often transient workload producing events when working with possessions attention has shifted towards the development of signaller non-technical-skills {NTS) and how they can be applied in relation to scenarios affected by possessions so that signallers are better equipped to recognise emerging acute high workload situations and mitigate the potential impacts.

The review of signaller non-technical skills specifically in relation to possession management was undertaken during 2015 and the outputs from this were subsequently incorporated into the Operations Safety Brief Cycle for signallers that commenced in March 2016. This reflected our learning from the development and original trials of the workload tool where it became evident that signallers will still require the skills to respond effectively to immediate workload situations that arise from circumstances that are not reasonably foreseeable, difficult to forecast accurately and for which there are currently no reliable planning remedies.

In terms of NTS, the Operational Development Day for signallers that started in March 2016 (Operational Development 5) specifically covered line blockages, possessions and train movements into and out of possessions as a technical refresher. It also integrated the recommendations from RAIB's Ufton investigation to illustrate the issue and specifically considered the NTS of multi task capacity: what it is, how we do it and what we can do to improve it. The focus of the session was on improving strategies around:

- *Preparation: how to reduce the "cognitive load" by planning and preparing for what's going to happen and what might happen*
- *Prioritisation: looking at how to prioritise, deciding what is urgent and important vs what is urgent but not important*
- *Support: knowing when to ask for help, recognizing the signs of becoming overloaded and how to ask for help constructively*

A paper describing the development and application of NTS (originally prepared in response to Deep Dive actions B5 and B7) is attached as it explains the background and context for NTS and its application to possessions. The strategy of developing the NTS of signallers envisages that development is a long term continuous process in which the applications of NTS are progressively extended and reiterated in relation to all safety critical elements of the signaller role.

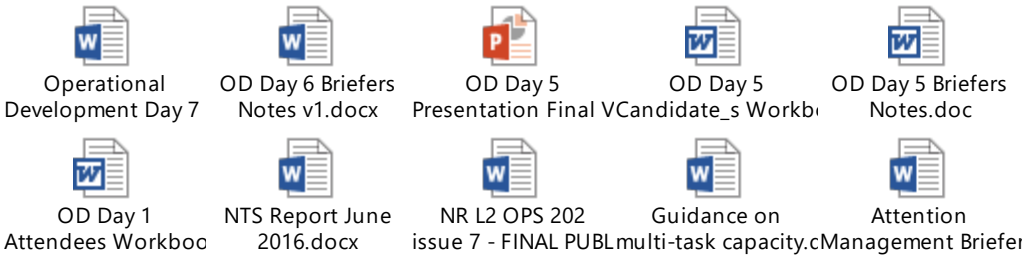
Consequently NTS has featured prominently in subsequent operational development days within the last 3 year competence cycle (OD 6, 7 and 9) and the current cycle (OD 1 and 2 so far). Possessions are included as a specific topic within the cycle and the relevant NTS appear frequently within other topics where workload challenges may arise from the interaction of possessions with other signaller activities.

Although the lack of success to date to produce a practicable workload prediction tool limits the ability to define, predict and prevent or mitigate signaller workload through the planning process this aspect has not been neglected. During 2016/2017 work was undertaken to review the requirements for engineering planning in response to various RAIB and formal inquiry recommendations concerning a series of collisions that had taken place within possessions.

As part of this review it was identified that the primary planning standard was deficient in relation to signaller workload matters and the opportunity was therefore taken to incorporate for the first time requirements that formally recognise a relationship between the planning of engineering work and subsequent signaller workload.

The latest version of the standard was published in June 2017 as Business Process NR/L2/OPS/202 (Principles, Timescales and Functional Responsibilities for Engineering Work, Access and Heavy Resource Planning) and is attached for reference. It includes explicit requirements for the Operations teams within the Route Businesses to assess the signaller workload implications arising from the volume and complexity of possessions and implementing control measures to maintain signaller workload at reasonable levels. This is complemented by a requirement for Route Access Planning teams to facilitate the adoption of measures within the plan to avoid or mitigate significant increases in signaller workload arising from the volume and complexity of possessions.

18. The following attachments were sent with the close out statement:



Recommendation 5

The intent of this recommendation is to assist incident investigation and competence management of signallers by recording, and facilitating playback of, all signallers' actions during their work at workstations included in future IECC projects.

Network Rail should modify appropriate standards and specifications so that future IECC installations include a system to fully record signaller's actions. Information recorded should include:

- Reminder appliance override;
- Signaller's selection of VDU view; and
- The view used when controls are operated using a VDU view.

Where practical, the system should incorporate a playback feature.

ORR decision

19. RAIB identified the need for more detailed data capture in control systems as its investigation could not ascertain if signallers were viewing correct screens at the time of the incident.

20. Network Rail has agreed with its main signalling suppliers that this functionality will be included in control systems. Siemens have a requirement to add this functionality to the control system as part of the Tyneside signalling system renewal contract.

21. The new requirement will be included in the revision of Network Rail standard NR/SP/SIG/10067. Revising the standard will take some time, so as an interim measure Network Rail has issued a Technical Instruction to its main signalling suppliers.

22. After reviewing the information provided ORR has 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

Status: Implemented.

Previously reported to RAIB

23. On 13 October 2014 ORR reported the following:

Network Rail has still to explain how it is to modify appropriate standards and specifications so that future IECC installations include a system to fully record signaller's actions.

Update

24. On 15 January 2021 Network Rail provided the following closure statement:

Ufton Rec 5 Closure Statement_ (002).do

25. Network Rail state the following:

An improved form of signaller action recording on VDU-based signalling systems has been examined and found to have a number of uses in addition for its use in post-incident investigations. This includes for use in staff training, for real-time incident management (including allegations by drivers on the operation of the signalling system) and to generate data on signaller actions for use in human factors analysis.

The feasibility of implementing this functionality (within the control system) has been discussed and agreed with the three main current signalling system providers (Siemens, Alstom and Resonate). Siemens have a requirement to add this functionality to their Westcad control system as part of the Tyneside signalling system renewal contract. Alstom are also implementing a comprehensive event recording capability in their next generation Infinity signalling control system platform. Resonate have confirmed previously the intention to incorporate an enhanced logging capability in the next update to their IECC Scaleable product. The new requirement will be added to NR standard NR/SP/SIG/10067. Recognising that an update to this standard cannot be issued quickly, the standard owner has agreed to the issue of a Technical Instruction that instructs suppliers of the requirement and which will be incorporated into the standard within a year.

Technical Instruction 177 addresses Recommendation 5 (starts on P83 of the standard).

RT_E_S_10067.pdf

TI177 VSCS Interaction Logging a

Previously reported to RAIB

Recommendation 2

The intent of this recommendation is to provide an interface which reduces the likelihood of IECC signallers setting a route over an automatic half barrier level crossing under local control without advising the level crossing attendant and cautioning the train driver.

The intent will be satisfied if a similar message is displayed in other crossing failure conditions and/or if the interface is provided within IECC software in a manner which provides a lower safety integrity level than required for some other signalling applications.

In respect of automatic half barrier level crossings supervised from IECC installations, Network Rail should consider interfacing information about level crossing status with signal controls to reduce the risk of signallers permitting a train to pass over the crossing without applying the rules applicable to local control.

Network Rail should include consideration of a warning or reminder which must be acknowledged on each occasion that a signaller attempts to set a route over a level crossing under local control. If found practical, Network Rail should modify standards and specifications to require this feature in future IECC upgrades and new installations.

Brief Summary on what was previously reported to RAIB on 17 June 2013

A study will be carried out in order to develop and investigate options for software changes to IECC workstations that either; prevents a signaller from removing a protecting reminder; or which prompts the signaller each time they override a protecting reminder at a level crossing, reminding the signaller that the crossing is under local control.

The cost of making the changes to IECC for future applications can then be estimated, including any additional design and testing costs that will add to the on-going scheme design. To quantify the benefits, this cost of making the changes will then be compared against the potential safety benefits. This will form part of the same work programme and risk assessment study as Recommendation 1 and the results will be presented in a single consolidated cost-benefit risk assessment report.

Timescale: 30 November 2013 for cost-benefit assessment report.

Update

1. On 8 May 2014 Network Rail provided ORR with a copy of its 'Recommendations Owners' Form' This provided the additional information:

A risk assessment was completed to compare selected mitigation(s) for potential human errors caused by shortcomings in the information presented on the signallers' screens. This examined all occasions when reminders are used, but focused on those occasions where reminders are used to protect infrastructure that has a status displayed, but are not interlocked with the signalling system (as all those that are interlocked are already protected).

A survey of all IECC maps was undertaken to identify all cases where an item of infrastructure and the protecting signal (or set of points) are presented on different screens. This identified that the only cases where this risk is relevant

on IECC maps is for Automatic Half Barrier crossings.

Four mitigation options were identified and assessed in response to RAIB recommendation 2:

2.1 Software prompt requiring signaller to provide confirmation before allowing route to be set over a level crossing in failed state/local mode;

2.2 Protecting reminder prevented from being removed whilst level crossing in failed state/local mode;

2.3 Software prompt requiring signaller to provide confirmation before allowing protecting reminder from being removed whilst level crossing in failed state/local mode;

2.4 Software prompt requiring signaller to provide confirmation before allowing a one-shot override of any reminder protecting a level crossing in failed state/local mode.

The cost of modifying the IECC software for each of these options was extrapolated from data provided by the IECC supplier, Delta Rail. A risk assessment model was then constructed to estimate the risk of the current situation and the revised risk for each of the above mitigating options. This utilised level crossing specific data and calculated human error probabilities to derive a risk based on fatality weighted injuries. The monetary value of preventing a fatality was then compared with the cost of implementing each mitigation to determine cost versus benefit over a range of payback periods. To be considered for implementation, the value of preventing a fatality (benefit) was required to be at least twice the cost of implementation (in accordance with Network Rail investment rules).

The following conclusions resulted from the assessment:

1. The most effective option was found to be mitigation 2.1 - a software function that requires a signaller to confirm before allowing a route to be set over an infrastructure item that has failed;

2. It is not clear how this would be applied to an infrastructure item protected by an automatic signal (since a route is not set as such) and this would need to be addressed either in the software design or by converting the protecting signal to a controlled signal;

3. The risk assessment considering the campaign installation of this change on all IECC workstations determined that this would require operation over a fifteen year period to achieve an acceptable pay-back on the initial investment.

The risk assessment report therefore recommends that:

1. Mitigation 2.1 should not be implemented on existing IECC workstations. The modifications proposed in response to RAIB Recommendation 1 should be applied to address the risk for IECCs

2. Mitigation 2.1 should be implemented on future control system software platforms. In particular, the traffic management control system.

The risk assessment also includes the following observations:

3. A systematic study should be carried out of operational practices and

experiences in the use of reminders on signalling systems as a means of protecting staff and train movements. This should take into account:

a. The ability to remove a reminder from a signal using the isolated exit symbol without being necessarily being able to see any detail of the infrastructure being protected on the screen that includes the protecting signal;

b. The use of a single reminder on a signal to provide protection for multiple activities (such as for a possession and for a level crossing under local control in the Ufton incident), leading to the potential that the reminder is removed when one of the activities is complete, either by error or because the signaller on duty is unaware of all it has been applied to protect.

4. For the Traffic Management system, a change should be implemented to the way in which inhibits are applied to movements into a track section or over an item of infrastructure that is in a failed state. It is recommended that inhibit controls placed on signals should be replaced by the implementation of a 'track reminder' that prevents routes being set into the protected section such that the inhibit control is specific to the track section at risk. This should also include labelling to clearly identify the reasons it has been applied (which may be for more than one reason).

Requirements to address this recommendation are to be incorporated into Baseline 4 of the Traffic Management specification. This functionality may be implemented as part of the first deployment of Traffic Management (December 2015), or, subject to risk assessment, implemented first in the next tranche of Traffic Management deployments.

ORR Decision

2. Network Rail has still to decide on how the functionality may be implemented either as part of the first deployment of Traffic Management (December 2015), or, subject to risk assessment, implemented first in the next tranche of Traffic Management deployments.

Status: In progress. ORR is continuing to engage with Network Rail and will update RAIB by 30 May 2015.

Recommendation 4

The intent of this recommendation is to ensure that the planned arrangements for: setting up, alteration and handing back of possessions, and any planned signalling input to associated activities, does not cause an excessive workload for any signaller.

Network Rail should examine and implement ways in which the workload of signallers can be kept within reasonable levels during engineering possessions, particularly those involving multiple changes to possession limits. This work should aim to avoid, where practical, situations in which signallers must delay engineering work or train services in order to avoid excessive workload.

Brief Summary on what was previously reported to RAIB on 17 June 2013

Network Rail has identified that the workload of a signaller has increased not only due to engineering requests but also in the number of requests for Line Blockages.

The Line Blockage tool is the first of a number of tools to identify and recommend limitations on the workload of Signallers. It is hoped that the line blockage tools will be fully in place by March 2013 with a review and feedback event planned for June 2013 to feedback in to the National Line Blockage Group.

The next step is to look at Engineers Possessions and to understand the planning process so the workload can be managed at this stage rather than when it gets to the signaller.

Update

3. On 1 September 2014, ORR obtained a verbal update from Network Rail:

Informal feedback up to now suggests a broadly positive reaction to the trialled procedures for assessing possession signaller workload overall, but some pushback from some Operations Managers (OMs) due to the procedure giving OMs some more work.

Network Rail believes the process needs some more development but can't be firmer than this until they have reconvened to properly discuss findings with staff involved in the 2 month trial – meeting planned by end of September 2014 following summer leave absences.

Network Rail intends to update ORR by 30 September 2014.

ORR Decision

4. Network Rail believes the process needs some more development and has planned a meeting to take place by the end of September 2014.

Status: *In progress.* *ORR will update RAIB by 27 February 2015.*

Recommendation 5

The intent of this recommendation is to assist incident investigation and competence management of signallers by recording, and facilitating playback of, all signallers' actions during their work at workstations included in future IECC projects.

Network Rail should modify appropriate standards and specifications so that future IECC installations include a system to fully record signaller's actions. Information recorded should include:

- Reminder appliance override;
- Signaller's selection of VDU view; and
- The view used when controls are operated using a VDU view.

Where practical, the system should incorporate a playback feature.

Brief Summary on what was previously reported to RAIB on 17 June 2013

A specification will be generated for data that can be logged on signaller actions when operating an IECC workstation. The technical feasibility and options for logging the data (with both current IECC architectures) will be explored and alternative solutions such as video capture of screen interactions will also be considered.

Estimated costs for adding this functionality for future upgrades and on new IECC workstations will then be established.

A survey will also be carried out, amongst Local Operations Managers and Incident Investigators, in order to review and estimate the benefits of the changes against the costs. Modifications of the standards will be made based on the outcome of the cost-benefit review.

5. On 23 June 2014, Network Rail provided ORR with a copy of its Recommendation Owners' Form.

Extract; Part D Closure Statement:

This recommendation involved assessing whether there was a case to improve the requirements for recording facilities within Network Rail's IECC so that Network Rail could be clearer about a signaller actions and what screen they were in when they undertook specific actions as a way of enhancing the investigation process.

Research has been undertaken which has involved interviews with Line Managers, Investigators and the Competence team in Operations. This highlighted that as well as benefits to the investigation process, providing full play facilities supported improvements in competence management and had an impact on performance management in being able to provide an accurate and objective account of a signallers actions quickly thus saving on time resolving performance disputes and time spent undertaking technical investigations.

The recommendations from the work are to include full playback facilities in future systems, specifically traffic management and a set of requirements have been included for first deployment sites of traffic management.

It is also recommended that the requirements are included in any further revisions to the IECC products, although at this stage it is not clear what the strategy is for IECC given the introduction of traffic management.

The case for improving playback facilities for our current IECC systems is less clear cut. This is a function of the remaining life time of the IECC facility and the level of incidents in an area that particularly benefit from having play back facilities (such as wrong side failures). Therefore a set of requirements for play back facilities have been developed together with some guidance on the benefits arising from full play back facilities which the Routes can use to assess and develop a business case on a site by site basis.

ORR Decision

6. Network Rail has still to explain how it is to modify appropriate standards and specifications so that future IECC installations include a system to fully record signaller's actions.

Status: *In progress.* *ORR is continuing to engage with Network Rail and will update RAIB by 30 May 2015.*