

**Oliver Stewart**  
**RAIB Recommendation Handling Manager**



11 October 2022

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

Dear Andy,

**RAIB Report: Accidents involving a wheelchair rolling from a platform onto the track at Southend Central, and a pushchair rolling from a platform onto the track at Whyteleafe on 28 August 2013 and 18 September 2013**

I write to provide an update<sup>1</sup> on the action taken in respect of recommendations 2 & 4 addressed to ORR in the above report, published on 14 August 2014.

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

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 12 October 2022.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Oliver Stewart', written in a cursive style.

Oliver Stewart

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<sup>1</sup> In accordance with Regulation 12(2)(b) of the Railways (Accident Investigation and Reporting) Regulations 2005

## Recommendation 2

*The intention of this recommendation is for the rail industry to understand the point at which a slope becomes sufficiently steep for it to be more likely than not that an occupied wheelchair or pushchair without a brake applied would roll away. The work should consider the most appropriate methods of influencing the behaviour of passengers to minimise the risk.*

Network Rail in consultation with the Association of Train Operating Companies, RSSB and the Department for Transport, should (as part of the national strategy for managing the platform train interface risk) arrange for work to be undertaken to determine when a slope towards the railway could become a significant hazard, and ways of mitigating the risk. The scope of the exercise should consider:

- all slopes on platforms including those that have been installed intentionally (for example to accommodate changes in level along the platform length);
- at what point a slope towards the railway makes it more likely than not that a wheelchair or pushchair without brakes applied could roll away, taking account of modern designs of such equipment; and
- other factors such as how individuals perceive a slope hazard, the most appropriate way to highlight the hazard, appropriate methods to influence public behaviour, and other ways of mitigating the risk.

Once the work is complete the industry should publish appropriate guidance, including consideration of standardisation in the contents of signage, announcements, etc.

## ORR decision

1. Network Rail reported in its closure statement of 12<sup>th</sup> September 2017 on the work it had done to determine when a slope towards the railway could become a significant hazard, and ways of mitigating the risk. However, we were not satisfied that this work was sufficient to address the intent of the recommendation. Through our engagement with the Rail Delivery Group (RDG) passenger operator's safety group ORR reviewed the further work undertaken by RDG in response to this recommendation, supported by research activity commissioned from RSSB.

2. RDG issued guidance for Station Facility Operators (SFO) on the Safe Management of Pushchairs and Wheelchairs on Station Platforms<sup>2</sup>, aimed at helping an SFO understand if a platform may present risk of unplanned rolling movement of an occupied wheelchair or pushchair. This guidance note RDG-OPS-GN-022 was published by RDG in October 2019

3. The guidance was supported by several initiatives aimed at improving understanding of the point at which a slope becomes sufficiently steep for it to be more likely than not that an occupied wheelchair or pushchair without a brake applied would roll away, including the 2014/15 cross fall survey of platforms (see attached NR SIN 140) and guidance document RIS-3703-TOM (*Passenger Train Dispatch and Platform Safety Measures*).

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<sup>2</sup> RDG guidance: [Safe Management of Pushchairs and Wheelchairs on Station Platforms \(raildeliverygroup.com\)](https://www.raildeliverygroup.com)

4. RIS-3703-TOM was informed by two research projects: T1098 (Identifying mitigations for the risk of unplanned movement of wheelchairs and pushchairs on station platforms); and T1118 (Optimising the design and position of platform markings designed to keep people away from the platform edge)

5. After reviewing the information provided to ORR by Network Rail and the further work by RDG, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail and RDG have:

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

**Status: Implemented.**

### Previously reported to RAIB

6. On 10 August 2015 ORR reported that Network Rail provided ORR with a draft of the scope of the project (to establish a safe engineering configuration for platform cross fall) that had been suggested to RSSB. This scope was still to be agreed and would be discussed at a forthcoming meeting between RSSB, Network Rail ATOC and RAIB and to which ORR requested to be invited. See full response at Annex B.

### Update

7. Following timescale extensions, Network Rail provided the following closure stamen and supporting evidence on 12 July 2017.



southend 2.pdf



NR\_SIN\_140.pdf

8. Network Rail state in summary the following:

*SIN 140 was completed by 3<sup>rd</sup> October 2015. One of it's intentions was the identification of hazardous cross falls which covers this recommendations purpose; "to determine when a slope towards the railway could become a significant hazard, and ways of mitigating the risk."*

*The SIN included an agreed method of inspection. Engineering assurance of planned platform works also ensure track facing gradients are removed via renewals intervention.*

## Recommendation 4

*The intention of this recommendation is for the rail industry to capture, share and use information relating to roll-off events with a particular emphasis on identifying where platform slopes were a causal factor so that it has a better understanding of the causes of roll-off events and the associated risk.*

Network Rail, in consultation with Station Facility Operators and RSSB, should implement a process to improve the investigation and recording of roll-off incidents and the way in which data is shared. Particular attention should be paid to the following areas:

- improvements in capturing and recording incidents involving roll-off type events, including the identification of the key factors that caused the roll-off such as the presence of a slope towards the railway on the platform;
- a review of previous roll-off incidents and accidents (covering at least the last five years) to identify those that may have been solely attributed to 'user error' or 'trespass', including establishing whether there may have been other causal factors such as a slope at the location concerned; and
- a review of how intelligence on roll-off incidents should be shared within and between SFOs and Network Rail as an input to decisions on the nature and content of improvement works at stations (recommendation 1 also refers).

## ORR decision

9. ORR considered the information provided by Network Rail around enhancements made to SMIS to introduce new coding to capture information which should allow roll-off incidents to be identified. This feature was enabled in SMIS. In September 2021 we revisited this recommendation with RSSB and concluded that this feature, due to the increasing complexity of SMIS, was now classed as optional and therefore rarely used, with the result that data quality was poor and had not in fact been used for regular reporting of such incidents.

10. ORR has also reviewed the work undertaken by RDG to develop guidance note RDG-OPS-GN-022 '*Safe Management of Pushchairs and Wheelchairs on Station Platforms*' and RSSB project T1098 *Identifying mitigations for the risk of unplanned movement of wheelchairs and pushchairs on station platforms* which whilst not supported by the SMIS data referenced by Network Rail, were based on a review and bowtie analysis of previous roll-off incidents. We consider that this work delivers the intent of recommendation 4 and the "*particular emphasis on identifying where platform slopes were a causal factor so that it has a better understanding of the causes of roll-off events and the associated risk*".

11. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, this recommendation has:

- been implemented by alternate means by RDG supported by RSSB

**Status: implemented by alternate means**

## Previously reported to RAIB

12. On 10 August 2015 ORR reported the following:

In its response, 27 November 2014, Network Rail stated:

*A Platform Train Interface (PTI) National Strategy Group has been established, comprising Station Facility Operators, DfT, ORR, ROSCO and RSSB.*

*The group has developed a strategy which is nearing launch to industry, this will be a live document supported by an action plan of deliverables aiming to reduce risk at the platform train interface.*

*A project management group has been established to support the delivery of the action plan. Part of the project management group's remit is improvements to the investigation and recording of roll-off incidents and the way in which data is shared.*

*This is being supported by the production of a report form which includes the identification of the key factors that caused the roll-off such as the presence of a slope towards the railway on the platform.*

*A new accident Level 2 description will be created in SMIS by RSSB to facilitate the collection of the key factors. The SMIS criteria will be established in conjunction with the RSSB and SFOs.*

*A review of previous roll-off incidents and accidents will be undertaken to identify those that may have been solely attributed to 'user error' or 'trespass', including establishing whether there may have been other causal factors such as a slope at the location concerned will be conducted. The results of this work will be fed back into the PTI National Strategy Group.*

*A monthly report will be produced to identify cross-fall incidents which will be used to communicate themes and issues with SFOs and the PTI National Strategy Group.*

Network Rail subsequently provided an update on 1 July 2015 indicating that the timescale for this work was likely to be extended from the originally planned 30 July 2015 to October 2015 to enable further work to be carried out by Network Rail and RSSB to implement the new level 2 codes within SMIS and recategorise events with the new code.

## Update

13. Following timescale extensions, Network Rail provided the following closure statement on 25/01/18.



Southend &  
Whyteleafe Rec 4.pc

14. Network Rail state in summary the following:

*New coding's have been created in SMIS to enable improved data collection. Various scenarios were discussed by the RSSB and the SMIS User Group in October 2015 and the guidance document was published to the SMIS User Group members February 2016 (Appendices 1,2 and 3). In-depth analysis of previous similar events was not possible due to the poor data collection techniques and methods used in the past. This is now addressed as per the above. Improved data sharing has been made possible due to the production of automated reports within SMIS to share event occurrence information with the RSSB for the attendees of the PTI Strategy Implementation Group on a quarterly basis. Data was also provided to the chair of the Network Rail Station Managers meeting (13 June 2016) to promote discussion of events and the requirement to document causal factors on immediate incident reports.*

## Previously reported to RAIB

### Recommendation 2

*The intention of this recommendation is for the rail industry to understand the point at which a slope becomes sufficiently steep for it to be more likely than not that an occupied wheelchair or pushchair without a brake applied would roll away. The work should consider the most appropriate methods of influencing the behaviour of passengers to minimise the risk.*

Network Rail in consultation with the Association of Train Operating Companies, RSSB and the Department for Transport, should (as part of the national strategy for managing the platform train interface risk) arrange for work to be undertaken to determine when a slope towards the railway could become a significant hazard, and ways of mitigating the risk. The scope of the exercise should consider:

- all slopes on platforms including those that have been installed intentionally (for example to accommodate changes in level along the platform length);
- at what point a slope towards the railway makes it more likely than not that a wheelchair or pushchair without brakes applied could roll away, taking account of modern designs of such equipment; and
- other factors such as how individuals perceive a slope hazard, the most appropriate way to highlight the hazard, appropriate methods to influence public behaviour, and other ways of mitigating the risk.

Once the work is complete the industry should publish appropriate guidance, including consideration of standardisation in the contents of signage, announcements, etc.

### Steps taken or being taken to address the recommendation

1. In its response, 27 November 2014, Network Rail stated:

*Network Rail in collaboration with ATOC will propose a research project to be led by RSSB to establish a safe engineering configuration for platform cross fall. This study will review and propose changes to the current standards and address the compliance requirements of Persons with Reduced Mobility (PRM) and Technical Specification for Interoperability (TSI).*

*The research project will be proposed to:*

- *Determine the optimum platform cross fall gradient which would prevent an unassisted wheeled object (pram, buggy, wheelchair etc.) from rolling towards the tracks with consideration given to platform type and their exposure to the elements.*
- *To assess the behavioural responses and potential for slip when stood on a sloped surface and transferring onto a level surface.*
- *To assess the impact of a canted platform coper and the benefits (shedding standing water) it could bring.*
- *The creation of conceptual Computational Fluid Dynamics (CFD) models to evaluate the likely effects of high winds and the aero dynamic effect of passing trains to determine where the use of wind breaks or shelters to platforms are most effective.*

- *To review the controls for the positioning of vending machines and kiosks to ensure they do not impact passenger proximity to platform edge should they be encumbered.*

2. On 10 December 2014, ORR asked Network Rail to clarify if the research project will be expanded to cover all slopes, including those along the platform, and the public's perception of a slope when going onto a platform. On 2 February 2015 Network Rail provided the following information:

*Network Rail is mindful of the issues regarding gradients along the length of platforms with respect to un-braked pushchairs and wheelchairs.*

*However, the fundamental issue of stepping distances from platform edge to the train takes precedence for passenger safety in this instance. In other words the gradient along the platform is determined by the gradient of the track and the gauging requirements. Therefore the focus during the programme of platform surveys is directed towards identifying stations that have excessive cross-fall gradients towards the track as the priority factor.*

*Some platforms will have topographic surveys done so that the gradient along platforms and gauging accuracy can be improved when platform projects are planned but to incorporate measuring this aspect specifically in the current programme of surveys would distract from the critical issues.*

*The scope of proposed research has been discussed with ATOC which include:*

- 1. Identifying at what point a slope towards the railway makes it more likely than not that an un-braked wheelchair or pushchair could roll away;*
- 2. Identifying when a gradient poses a risk to wheeled transport;*
- 3. Identifying how characteristics of the platform surface (such as type and condition) influence this risk;*
- 4. How individuals (passengers, non-passengers and workforce) perceive a slope hazard;*
- 5. The most appropriate ways to highlight the hazard and mitigate the associated risks along with supporting cost benefit analysis;*
- 6. The most appropriate methods to influence public behaviour;*
- 7. Identify other ways of mitigating the risk, for example promoting the development and use of wheeled vehicles with some form of automatic brake.*

3. On 1 July 2015 Network Rail provided ORR with a draft of the scope of the project that had been suggested to RSSB. This scope still has to be agreed and will be discussed at a forthcoming meeting between RSSB, Network Rail ATOC and RAIB and to which ORR has requested to be invited.

### **ORR decision**

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

- taken the recommendation into consideration; and



- is taking steps to address it. However, it has yet to confirm what these will be or the timescales in which they will be delivered.

**Status: In-progress. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.**

#### **Recommendation 4**

*The intention of this recommendation is for the rail industry to capture, share and use information relating to roll-off events with a particular emphasis on identifying where platform slopes were a causal factor so that it has a better understanding of the causes of roll-off events and the associated risk.*

Network Rail, in consultation with Station Facility Operators and RSSB, should implement a process to improve the investigation and recording of roll-off incidents and the way in which data is shared. Particular attention should be paid to the following areas:

- improvements in capturing and recording incidents involving roll-off type events, including the identification of the key factors that caused the roll-off such as the presence of a slope towards the railway on the platform;
- a review of previous roll-off incidents and accidents (covering at least the last five years) to identify those that may have been solely attributed to 'user error' or 'trespass', including establishing whether there may have been other causal factors such as a slope at the location concerned; and
- a review of how intelligence on roll-off incidents should be shared within and between SFOs and Network Rail as an input to decisions on the nature and content of improvement works at stations (recommendation 1 also refers).

#### **Steps taken or being taken to address the recommendation**

5. In its response, 27 November 2014, Network Rail stated:

*A Platform Train Interface (PTI) National Strategy Group has been established, comprising Station Facility Operators, DfT, ORR, ROSCO and RSSB.*

*The group has developed a strategy which is nearing launch to industry, this will be a live document supported by an action plan of deliverables aiming to reduce risk at the platform train interface.*

*A project management group has been established to support the delivery of the action plan. Part of the project management group's remit is improvements to the investigation and recording of roll-off incidents and the way in which data is shared.*

*This is being supported by the production of a report form which includes the identification of the key factors that caused the roll-off such as the presence of a slope towards the railway on the platform.*

*A new accident Level 2 description will be created in SMIS by RSSB to facilitate the collection of the key factors. The SMIS criteria will be established in conjunction with the RSSB and SFOs.*

*A review of previous roll-off incidents and accidents will be undertaken to identify those that may have been solely attributed to 'user error' or 'trespass',*

*including establishing whether there may have been other causal factors such as a slope at the location concerned will be conducted. The results of this work will be fed back into the PTI National Strategy Group. A monthly report will be produced to identify cross-fall incidents which will be used to communicate themes and issues with SFOs and the PTI National Strategy Group.*

6. Network Rail subsequently provided an update on 1 July 2015 indicating that the timescale for this work was likely to be extended from the originally planned 30 July 2015 to October 2015 to enable further work to be carried out by Network Rail and RSSB to implement the new level 2 codes within SMIS and recategorise events with the new code.

#### **ORR decision**

7. After reviewing all the information received from Network Rail, ORR 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 by October 2015.

**Status: *Implementation on-going.* ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation**