

**Andrew Eyles**  
**RAIB Relationship and Recommendation Handling**  
**Manager**

Telephone 020 7282 2026

E-mail [andrew.eyles@orr.gsi.gov.uk](mailto:andrew.eyles@orr.gsi.gov.uk)

25 May 2016



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

Dear Andrew,

**RAIB Report: Derailment at Bletchley Junction, Bletchley**

I write to provide an update<sup>1</sup> on the action taken in respect of recommendation 2 addressed to ORR in the above report, published on 21 November 2012.

Annex A to this letter provides details of the action taken. The status of recommendation 2 is '**Progressing**'. ORR will advise RAIB when further information is available regarding actions being taken to fully address this recommendation.

We will publish this response on the ORR website on 31 May 2016.

Yours sincerely,

**Andrew Eyles**

---

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

## Recommendation 2

*The intention of the recommendation is that, at potentially high risk diverging junctions, such as those where the approach speed is 60 mph (96 km/h) or greater and requiring a reduction in speed of a third or more, the risk from a train over-speeding on a diverging route following the clearance of the junction signal under approach control conditions is reduced. Different or additional mitigation may be justified depending on the level of risk identified; this may include replacement by position light junction indicators; replacement of junction indicator by one in modern equivalent form; alteration to signalling controls etc.*

Network Rail, in conjunction with train operators, should assess the risk from over-speeding at potentially high risk diverging junctions with approach control following the clearance of the junction signal.

As a minimum, the scope should include consideration of:

- Junctions where the speed of the diverging route is significantly lower than the approach speed;
- Junction signals fitted with standard alphanumeric route indicators; and
- The type of traction using the junction and its ability to accelerate following the clearance of the junction signal from red.

The outcome of the risk assessments should be used to determine whether different/additional mitigation is required.

## ORR Decision

1. ORR has sought from Network Rail additional information relating to the risk assessments carried out on West Coast Main Line (WCML). ORR judges that, although thorough in considering conventional SPAD risk, the assessments undertaken to date do not, in all cases, address the specific likelihood and consequences of overspeeding at diverging junctions. Whilst the outcome of discussions with Network Rail suggests that it will be very difficult to provide the additional mitigation envisaged by this recommendation, ORR considers that Network Rail needs to submit additional evidence to justify this conclusion. ORR has received some material explaining the constraints ruling out reasonably practicable solutions – but these do not yet provide a wholly satisfactory rationale.

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

- taken the recommendation into consideration; and
- taking action to implement it, but has yet to provide sufficient justification to allow closure.

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

## Previously reported to RAIB

3. On 17 October 2013 ORR reported to RAIB that Network Rail was planning to progress the recommendation in two parts:
  - Part 1 would review of the impact of the recommendation on a sample part of the infrastructure (West Coast South) and assess its impact; and
  - Part 2 would review this assessment and determine the reasonably practicability of the proposal for national implementation.

## Update

4. On 2 March 2016 Network Rail provided the following closure statement for recommendation 2:

*The agreed actions for the recommendation at Bletchley were as follows -*

- *Network Rail to take the work that Virgin Trains have undertaken along the line of route (LNW South), identifying where similar layouts and indications currently exist.*
- *Network Rail and Virgin Trains to examine these initial locations and to check the signal sighting details, any Signal Passed at Danger (SPAD) history, any reports of poor sighting and any other safety issues or reported details relevant to the location(s).*
- *Network Rail and industry to identify any issues for the respective signals and undertake a suitable risk assessment if required for any potential mitigation.*
- *Network Rail and Industry to consider other locations nationally where similarities exist to the layout at Bletchley and undertake the work outlined above.*

*In order to progress this, Virgin Trains has produced a simple table [Annex B] identifying locations where a Bletchley type over speed risk are.*

*This is a simple location and speed table and does not include signals. It also covers all potential locations on the Virgin line of route. Initially Network Rail has decided to concentrate on the West Coast South from Northampton to Euston. It has taken this a step further to look at the signals that are directly affected by this, then to look at these signals to see if any are of the same type as Bletchley (approach control + theatre indicator). The signals identified are on the enhanced simplifier, giving signal numbers. Several reports have been run to look at all of the signals identified, including Cat 'A' SPADS, Train Protection Warning System (TPWS) event and signal defects. After analysing these reports, the following was found:*

- *Cat 'A' SPADS - 19 events*
- *TPWS Track Events (2007-2010) -15*
- *TPWS Track Events (2010- 2014) - 49*

- Defects - 15 events

## SPAD

From the above info, we have looked at the text around the events and identified similarities to Bletchley in 4 Cat 'A' SPAD's. This is captured in the table below.

EVENT_DATE	SIGNALBOX_DESC	SIGNAL_NUMBER	LOCATION_DESC	TRAIN_COMPANY_NAME	TRACTION_IDENTIFIER	OVERRUN_YDS	OVERLAP_YDS	SIGNAL_TOTAL_SPADS	PREVIOUS_SPAD_DATE	DRIVER_NUMBER_SPADS	TPWS FITTED AT SPAD SIGNAL IND	ERROR_CATEGORY_DESC
------------	----------------	---------------	---------------	--------------------	---------------------	-------------	-------------	--------------------	--------------------	---------------------	--------------------------------	---------------------

28/05/199	Rugby	RY1038	Northampton	London Midland	321431	240	20	1		2	N	Failure to check signal aspect
15/02/199	Watford Jn	WJ759	Watford South Jn	London Midland	321411	48	160	1		1	N	Failure to check signal aspect
04/07/199	Watford Jn	WJ759	Watford South Jn	London Midland	321409	54	160	4	16/08/1995	1	N	Failure to locate signal
25/05/199	Wembley	WM324/W	Kilburn	Freightliner	90143	70	200	1		3	N	Failure to locate signal

This information highlights the fact that Network Rail has not had a SPAD event at any of these signals since 1999, and of the 4, there are no similar train characteristics to Bletchley aside of the class 90 at Wembley, but this was a complete train and not a light engine. Also, none of these signals are of a theatre indicator type. The assessment details for RY1038 are provided along with the following statement – ‘This signal has a risk banding of J4 or 0.0000019399 FWI and as such Network Rail wouldn't recommend any further action to be taken on this signal)’.



Standard Assessment  
RY1038.pdf

## TPWS

From the above info, Network Rail has looked at the text around the events and identified similarities to Bletchley in 8 TPWS events, captured in the table below:

Event Date	SMIS Ref.	Location	Signal Number	Interested	Short Description
02/06/2011	HLM/020611/034	Northampton Mill Lane Jcn	RY1036	Yes	2Y14 - TPWS Activation - Too high speed
03/06/2011	QNW/2011/JUN/84	Bushey	WJ759	Yes	2J47 had a TPWS activation at signal WJ759 - Too high speed Approach control
07/11/2012	DWS/2012/NOV/47934	Watford South Jcn	WJ759	Yes	Cat A Spad for DBS 7M53 05:10 Acton to Watford at signal WJ759. - loss of concentration
14/03/2013	DWS/2013/MAR/48569	Wembley Central (WCML)	WM338	Yes	CAT A SPAD - DBS 6R60 21:45 Bescot to Camden passed signal WM336 at Sudbury Junction, Wembley, by 60 mtrs. due to reading incorrect signal.
14/07/2013	HSL/2013/1946	Watford Jcn (DC Lines)	WJ759	yes	TPWS - appr WJ759 @ RED - u377213 - 47mph/46mph - too high speed
27/07/2013	HLM/270713/032	Hillmorton	KR3345	yes	1U37 - TPWS Activation for KR3345 signal due to overspeed. - too high speed
01/09/2013	HWC/2013/SEP/1366	Northampton	RY1052	yes	1B90 had TPWS against Red at Northampton, signal RY1052. Set 390047, veh 69147 - too high speed
20/07/2009	HLM/200709/6027	London North West	RY1052	yes	1U36 - TPWS Activation - too high speed

*This information shows that Network Rail has 2 Cat 'A' SPADS listed as TPWS events in SMIS. This is being looked at separately by the safety team. These 2 events do not show any similarities to Bletchley due to being freight trains hauled by diesel locomotives and reasons being loss of concentration and reading an incorrect signal.*

*For the TPWS events, these all show travelling too fast and caught by the OSS, again no similarities to Bletchley.*

*In line with the agreed action plan for this recommendation, Network Rail has looked at the section of line from Northampton to Euston on the West Coast South Route, with a view to seeing if any other signals pose the same kind of risk as the Bletchley incident. From the information it has available, and analysing events at locations where a reduction in speed is necessary, it has not found any similar signals or previous incidents to the one at Bletchley.*

*With this information, and the findings as such, Network Rail does not believe that any further work is required outside of the locations checked to see if any similarities exist. The information it has gathered does not indicate that this is a common problem, and it has also asked Virgin Trains to share the over speed risk paperwork with other operators on the West Coast as a Good Practice guide.*