Rail Accident Investigation Branch

RAIB Bulletin 03/2008

Freight train derailed in July 2008

Description of the accident and findings of the RAIB

1 In July 2008, a freight train derailed at a set of points on the entrance to a goods line as it crossed over from a main line. At the time of the accident, a group of signal maintenance staff were working on these points.

2 The front of the train ran onto the points at approximately 15 mph (24 km/h) and all wheels on the front bogie of the locomotive derailed. The signal maintenance staff had moved quickly to a position of safety as it approached, but none were injured. However, the train driver suffered a minor back injury. The locomotive sustained damage to all of the front bogie gearboxes and minor damage to its front end skirt. The points and around 30 metres of track sustained damage.

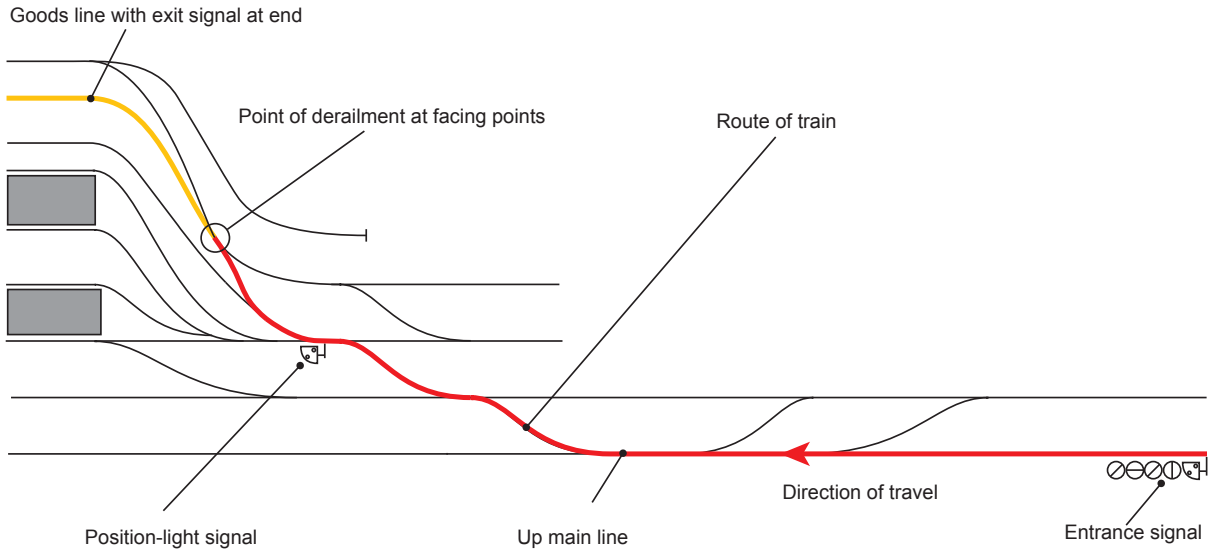

Figure 1 – Path of train with point of derailment highlighted

3 The signal maintenance staff had been carrying out routine maintenance on the points. As the planned work did not affect the running of the railway, they decided to use red zone protection arrangements. However, during this work, they noticed that the points required adjustment, so one of the group telephoned the signaller and asked to take local control. The signaller was busy at the time and asked the signal maintenance staff to call back in a few minutes. When they called again, the signaller agreed and gave verbal permission for the staff to do their work. No formal protection arrangements were put in place, although in such circumstances, the minimum levels of protection permissible are as defined in the rule book[1].

4 The signaller immediately placed reminder appliances on several signal pushbuttons on the panel to stop routes being set over these points. However, the signaller forgot to place a reminder appliance on the pushbutton for the signal at the exit of the goods line. In addition, the signaller did not place a reminder appliance on the pushbutton for the entrance signal on the up main line. This was because it was also the entrance signal pushbutton for other routes that the signaller would need to set while this work was taking place.

5 The signal maintenance staff began adjusting the points and manually moved them from normal to reverse and back to their normal position. At the same time, the freight train approached and stopped at the entrance signal on the up main line which was displaying a red aspect.

6 Approximately six minutes after applying the reminder appliances, the signaller decided to set a route for the freight train. The signaller pressed the entrance signal pushbutton closely followed by the pushbutton for the signal at the end of the goods line as neither pushbutton had a reminder appliance on it.

7 At this time the points were in their normal position, as needed for this route, so the signalling system successfully set the route.

8 The entrance signal changed to display a main yellow aspect and a route indicator informed the driver that the route was set onto the goods line. As required by the rule book, a position-light signal along this route, which was approximately 100 metres before the points, also changed automatically to display a proceed aspect.

9 Soon afterwards the train began moving. The distance from the entrance to the exit signal was just under a mile (1.6 km) and it was approximately two thirds of a mile (1.1 km) to the points. The train reached a maximum speed of 18 mph (29 km/h) on approaching the crossovers from the main line to the goods line. The speed limit for these crossovers is 25 mph (40 km/h).

10 During this time, the signal maintenance staff had continued working and around 30 seconds after the train had passed the entrance signal, they moved the points to a mid-position to carry out adjustments. As a result, normal detection was lost and the position-light signal reverted to showing a red aspect.

11 Due to the train's slow speed, it was almost two minutes later when it arrived at the crossovers. At this point, the driver saw the staff working on the track and sounded the train's horn. The staff acknowledged the warning but did not move, as they thought the signaller could not have routed a train towards them because they had local control of the points.

[1] The rules governing the protection arrangements to be taken by staff when working on points are being considered by another RAIB investigation. The findings will be published in the forthcoming RAIB report into the investigation of an accident, where a member of staff was hit by a train at Kennington junction, near Oxford, on 23 May 2008.

12 While concentrating on the signal maintenance staff on the track ahead of him, the driver briefly noticed the position-light signal was not showing the expected proceed aspect. The driver did not realise that the red position-light signal might be indicating a problem with the route ahead.

13 When proceeding on the authority of a main aspect, a driver has the authority to travel to the next main running signal, and to expect, as stated in the rule book, that any position-light signals along the route will show a proceed aspect. Drivers may not be able to sight a position-light signal along a main route, especially if travelling at speed, so they are not required to observe them under such circumstances.

14 The driver again sounded the train's horn for several seconds and began braking. Upon realising the train was travelling towards them, the signal maintenance staff quickly moved clear. As the points were still in a mid-position, they displayed a hand danger signal. The driver then saw the points were not set correctly and applied the emergency brake but was unable to stop. The front bogie of the locomotive derailed.

15 The driver called the signaller to report that the train had derailed. The signaller immediately admitted to making two errors, firstly omitting to apply the reminder appliance on the pushbutton for the exit signal and then setting the route through the points after verbally agreeing to provide protection.

16 As required by procedures, the staff involved were tested for drugs and alcohol; all results were negative.

Learning Points

17 Following a review of the evidence, the RAIB has decided not to conduct a full investigation as it does not believe that such an investigation would lead to the identification of any further significant lessons that would improve the safety of railways or prevent railway accidents and incidents. However, the RAIB does believe that there are some valuable learning points to be disseminated to other operators and infrastructure owners.

18 These learning points are:

- the necessity of following the correct procedures when arranging protection to carry out work on railway infrastructure; the rule book defines all of the methods of protection that staff can use. This accident demonstrates why verbal arrangements to take local control of signalling equipment are not permitted; and
- if a position-light signal along the route between main running signals is not showing a proceed aspect when it should, and the driver sees it, despite there being no requirement to do so, this may indicate that there is a problem along the main route.

19 The RAIB has written to the freight operator and infrastructure owner informing them of its decision and conclusions.

This bulletin is published by the Rail Accident Investigation Branch, Department for Transport.

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