Executive Summary

1 At about 17.25 on 8 January 1999, at Spa Road near London Bridge, the 16.22 Thameslink Brighton to Bedford train collided with the 15.51 Connex South Eastern train from Dover Priory to London Charing Cross. Four people were taken to hospital with minor injuries but none was detained.

2 The collision took place at a track junction on the approach to London Bridge station. There is no record of any previous incidents at this junction.

3 Both trains were electric multiple-units with eight carriages. The Thameslink train was made up of class 319 sliding-door units. The Connex train was formed of ‘Mark 1’ rolling stock (classes 423 and 411).

4 HSE investigations have concluded that the cause of the collision and subsequent derailment of both trains was the result of the driver of the Connex train passing a signal at danger, and that that was most probably the result of human error. Both the signalling and the braking systems have been tested and no evidence of malfunction has been found.

5 During the investigation, it became apparent that there were some deficiencies in the training and experience of staff when dealing with emergency situations and HSE has taken steps to ensure that these deficiencies are being addressed by the companies concerned.

6 Since the accident, HMRI has made public the results of a year long audit of the way the risks of signals being passed at danger are managed in the railway industry. Railtrack and all the train operating companies were asked to submit action plans to implement 22 specific actions identified by the audit. HMRI was awaiting receipt of those action plans when the tragic accident at Ladbroke Grove occurred on 5 October. Those action plans have been received and are currently being followed up as a matter of urgency and active consideration is being given to other measures to reduce the incidence of SPADs.

7 The Railway Safety Regulations 1999 were introduced in August. The Regulations require Railtrack and the train operating companies to install a train protection system throughout the network by the end of 2003. This consists of equipment on the track and the trains which will apply the brakes automatically if a train is travelling too fast on the approach to a red signal and
at other key locations where there is a high risk of collision. The junction at Spa Road is one of those that is intended to be fitted.

The incident

1. At approximately 17.25 on 8 January 1999, a collision took place between two passenger trains at Spa Road Junction, near London Bridge station in south-east London.

2. The two trains were the 16.22 Brighton to Bedford, operated by Thameslink Rail Ltd, and the 15.51 Dover Priory to London Charing Cross, operated by Connex South Eastern Ltd. Both trains were electric multiple-units with eight carriages.

3. The accident occurred at a very busy period during the peak evening rush hour. It was dark and the weather conditions were poor, with intermittent rain. The Thameslink train had been stopped at a signal to await a clear route across the junction at Spa Road. When this route became clear, the train was signalled to proceed. Signals protecting other routes across the junction were held at “danger”. The Connex train, which had run past a series of “caution” signals, approached the junction but its driver failed to stop at the protecting signal which is some 283 m (309 yards) away from the point where the two lines converge.

4. The Connex train approached the junction at about 39 mph at the same time as the Thameslink train, moving in approximately the same direction, approached from its left hand side at about 31 mph. Both trains were derailed in the collision which followed, and there was slight damage to eleven of the sixteen coaches. 282 people were evacuated from the trains, and about 100 from another train trapped on the viaduct a short distance behind. Four people were taken to hospital with minor injuries but none was detained.

5. The electric current was cut off from all lines around the accident scene immediately and the emergency services were called. The location of the accident, on a viaduct, meant that there was some difficulty reaching the scene.

6. There was severe disruption to rail services from London Bridge, Charing Cross and Cannon Street stations. Trains continued to run, at a safe distance, past the accident site to and from Cannon Street, and, inevitably, there was some overcrowding on these services.

The investigation

7. An inspector from HMRI reached the scene about four hours after the accident occurred. Assisted by the British Transport Police, he carried out initial investigations at London Bridge Signalling Centre and at the scene of
the accident, and later joined railway industry investigators in closely examining the signals concerned.

8. Extensive testing of the signalling in the area was carried out as part of the railway industry's inquiry into the collision. No faults were found that could have contributed in any way to the cause of the accident. In particular, a data logger fitted to the part of the signalling associated with the route taken by the Connex train confirmed that the signal concerned was at danger for the entire period as the train approached and passed it.

9. The Connex train was formed of "Mark 1" slam-door rolling stock (classes 423 and 411) and the Thameslink train of class 319 sliding-door units. Both trains were examined after the accident. There was no breach of the integrity of the bodywork on either train, and the type of stock had no effect on the injuries sustained.

10. Both of the trains involved in the collision were fitted with AWS, which was working correctly. Following the collision the AWS "sunflower" indicator was showing a black display, which would normally indicate that the previous signal had been at "green". However, there is considerable evidence that the shock of a collision can cause the AWS display to change, and no reliance can be placed on this display in these circumstances.

11. The driver of the Connex train had been a driver since 1994, before which he had been a guard. He had had one previous SPAD, in July 1998, following which he had been put on an "action plan" for increased supervision and monthly assessments. This was still in progress at the time of the accident. He had been on duty for 6 ½ hours at the time of the accident, but was well rested and had been working the same turn for a few days. He was permanently removed from driving duties following the accident.

12. The arrangements for the evacuation of the trains involved in the accident were also considered as part of the investigation. The Railway Inspectorate is satisfied that the evacuation of the trains involved in the collision was carried out as quickly and safely as was possible in the circumstances, and all passengers and emergency services personnel were clear of the site by 21.10. However, another train (the 17.25 from London Bridge to Guildford) was trapped between London Bridge station and the accident site. The evacuation of passengers from this train was not well organised. Some passengers were left to find their own way about half a mile along the track back to London Bridge, and were fortunate to escape injury, although the electric current had been cut off.

Findings

13. HSE's investigation has concluded that the collision occurred because the driver of the Connex train passed a signal which was at danger. Both the signalling and the AWS on the train were found to be in full working order. The
driver of the Connex train had received a series of cautionary signals as he approached the point of collision which he had cancelled. The signal concerned, L154, had not previously been passed at danger.

14. The Inspectorate is satisfied that the driver was being correctly managed in accordance with recommendations made following the Watford Junction accident.

15. Some deficiencies in the training and experience of staff dealing with emergency situations became apparent during the investigation. HMRI has taken steps to ensure that these are fully addressed by the companies concerned. The Connex train operating companies have changed their emergency procedures to ensure that a responsible person is appointed to deal with each train affected by a major incident, and to arrange the evacuation of passengers where necessary.

16. The railway industry’s internal inquiry into the accident has taken place and its report has been produced. HMRI has reviewed this report and is satisfied that it adequately addresses the circumstances of the accident and the issues arising from it.