

An accident waiting to happen?

A Transport Committee investigation into the Chancery Lane derailment

June 2003

Transport

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Chair's Foreword



Concern about the safety and good management of public transport systems has been an acute political issue for some years now. It has remained largely focused on the National Rail network, where, fairly or unfairly, Potters Bar, Southall and Ladbroke Grove have become etched in the public mind as examples of corporate failure causing danger, and death, to the public. The final conclusions of each of these incidents have yet to be reached, and some public disquiet continues. It was however a conclusion of those accidents that they collectively precipitated a political crisis which led to, and accelerated, the winding up of Railtrack and the return of the rail network to a 'public interest' owner. The transfer of control, and the commitment to quite enormous investment plans, has perhaps reassured people that such incidents should not happen again.

Meantime, the London Underground, which carries each day more passengers than the entire national rail network, whatever its other failings has largely maintained public confidence as a safe system. Then, in January this year, Chancery Lane happened. It is a matter of luck that the defect which apparently caused this accident did not happen elsewhere, such as at speed or on an embankment. If this had been the case a severe loss of life would probably have resulted.

In that sense we are very lucky. But the incident has raised very real concerns about the safe management of the system, about Tube management structures and about the corporate response of LUL to the incident. It appears to have been an accident waiting to happen. I do not mean to overstate this, and pay tribute to the dedication of railway managers to providing a good system, particularly during years of underinvestment. It is perhaps fortunate however that the Tube is about to go under new management, for this will allow a new focus to be placed on the issues of staffing, management and public risk that lie behind the accident. But by the same token, the extended interregnum while transfer has been awaited cannot have helped in the management of this incident. And clearly the change of management, which parallels the initiation of the PPP contracts, requires special vigilance to ensure that safety remains paramount.

There are statutory inquiries whose conclusions will lead to more technical recommendations. Our principal role at the Assembly is to pose a number of questions which need to be addressed, by the existing but also the new managers of the Tube. I think we can say that a number of things could be managed better but that, notwithstanding this, the Tube remains a largely safe system. While accidents are exceptional, they can always teach us something new about the way we work, and in that sense they are helpful. The London Tube has the potential, after years of neglect, to become a world leader and a beacon for London. Let's make sure that that happens.

A handwritten signature in black ink that reads "John Biggs".

John Biggs, Chair of the Transport Committee's Chancery Lane hearings

The Transport Committee membership for the Chancery Lane hearings

John Biggs (Chair)	Labour
Lynne Featherstone (Deputy Chair)	Liberal Democrat
Tony Arbour	Conservative
Roger Evans	Conservative
Nicky Gavron	Labour
Sally Hamwee	Liberal Democrat
Samantha Heath	Labour
Jenny Jones	Green
Eric Ollerenshaw	Conservative

Contact

Assembly Secretariat
Paul Watling, Scrutiny Manager
020 7983 4393 paul.watling@london.gov.uk

Chancery Lane Investigation: Executive Summary

On Saturday 25th January 2003, at around 2 p.m., a westbound London Underground Central Line train derailed as it came into Chancery Lane station. Around 500 passengers were on the train and thirty-two passengers received injuries.

Four days later the London Assembly unanimously agreed a motion that asked the Transport Committee to investigate the incident at Chancery Lane.

Over the course of three evidentiary hearings we heard from London Underground's senior management, leading members of the unions that represent the Tube staff and a number of eyewitnesses to the derailment.

From the evidence received, and from what we have seen as details of internal London Underground reports are published, we have a number of key concerns that we wish to report to the Assembly and bring to the attention of Londoners.

- We are concerned that more than four months into the official investigation London Underground has not yet identified the underlying cause of this problem.
- We find it difficult to reconcile this inability to identify the cause of the problem with London Underground's statement that they are absolutely confident it is safe to run trains on the Central Line.
- We have concerns over a management team that, even after a number of similar serious incidents involving Central Line trains, instituted a short-term labour intensive maintenance regime that proved to be potentially fatally inadequate instead of devising a long-term solution.
- **Overall, failure to identify the root causes of the problem after previous incidents on the Central Line, and concerns over maintenance practice, lead the Committee to believe that Chancery Lane was an accident waiting to happen.**
- The design and the purchasing procedures used to acquire the Central Line trains themselves, while motivated by good intentions, seem to have landed London Underground with a train that is inherently unreliable and performs badly.
- We have concerns surrounding the impact of high speed running on mechanical reliability, the inability to discover the root cause of the motor problems and the fact that these trains are planned to be in service for another 30 years.
- The relationship between London Underground management and unions appears close to paralysis. This cannot be conducive to the highest standards of health and safety. Long-standing union concerns over safety practices and maintenance do not appear to be adequately investigated.
- There was no mechanism that allowed passengers to receive advice, reassurance and counselling in the days after the event. London Underground should seriously review procedures for post incident customer care and the provision of information to customers at regular intervals following disruptions such as Chancery Lane.

1 The Chancery Lane derailment – a London Assembly Transport Committee investigation

- 1.1 On Saturday 25th January 2003, at around 2 p.m., a westbound London Underground Central Line train derailed as it came into Chancery Lane station. Around 500 passengers were on the train as the last four carriages of the eight-car train were derailed.¹ Thirty-two passengers suffered injuries. There was no fire but a considerable amount of dust was generated. London Underground staff promptly evacuated passengers from the train and the station.

Background to the Transport Committee Investigation

- 1.2 On 29th January 2003 the London Assembly unanimously agreed a motion that instructed the Transport Committee to investigate, as a matter of urgency, the incident at Chancery Lane.
- 1.3 The Transport Committee was asked to look into:
1. The circumstances leading to the derailment, including any relevant management and maintenance arrangements that may have a bearing on the incident,
 2. The efficiency of efforts to restore services to the Central and Waterloo and City lines following this incident,
 3. Project management and purchasing procedures used to acquire the Central Line trains,
 4. Safety procedures adopted under the PPP shadow running regime,
 5. Arrangements for evacuation following the incident,
 6. Provision of alternative transport facilities in the aftermath of the incident.

The Investigation

- 1.4 The Transport Committee held three evidentiary hearings:
- 13th February – London Underground senior management
 - 6th March – Unions representing London Underground staff
 - 20th March – Eyewitnesses to the derailment
- 1.5 In addition to the Assembly investigation three other enquires are underway:
- A statutory investigation by the Health and Safety Executive assisted by Her Majesty's Railway Inspectorate. The report is still some months from publication;
 - An internal London Underground (LUL) investigation, which produced interim reports in February and April. The final report is expected at the end of June;

¹ Initial reports suggested that 800 passengers were on the train. London Underground have since confirmed this was an overestimate.

- A hearing by the London Transport Users Committee (LTUC) on 13 May which looked into the decisions made ordering complete closure of the Central Line and actions taken to resume a full service.
- 1.6 The conduct of the first two enquiries has limited the scope of the Assembly's investigation. LUL was reluctant to prejudge the findings of its own enquiry and the HSE are prevented from releasing any information acquired by inspectors under section 28 of the Health and Safety at Work Act 1975 without the consent of all parties involved.²
 - 1.7 The Committee believes however that it is now in a position to report on the findings of its own investigation in as far as circumstances allow.
 - 1.8 This brief report seeks to update the Assembly on what is known, through evidence submitted to the Committee and other published sources.

² Letter from the Health and Safety Executive dated 25 March 2003.

2 Description of events

- 2.1 The train which derailed was train 002. It had been in passenger service since 05.30 on the morning of 25 January and was travelling westbound from Epping.
- 2.2 The driver of another train travelling in the opposite direction made the first report of potential problems at Leytonstone at 13.29. He reported an unusual noise coming from train 002. London Underground's interim report states that the report described a noise similar to "nails being rolled around a can".³
- 2.3 The Line Controller⁴ spoke to the driver of train 002 at 13.30, advised him of the reported noise and the fact that a Station Assistant would travel in the fifth car of the train from Leyton to Stratford stations to investigate any unusual noise. No noises were heard and the driver was ordered to continue the journey.

Concerns were raised with the Committee by representatives of the relevant Trade Unions about the availability of staff to investigate reported problems and the qualifications of staff for investigative duties. These concerns are detailed further in section 5 of this report.

- 2.4 Monitoring continued at Liverpool Street station where a member of staff was asked to listen from the platform for noises as train 002 left the station. This took place at 13.38, some nine minutes after the first report. Again no unusual noises were reported.

The Committee interviewed a number of eyewitnesses to the event, one of whom told us that he was aware of unusual noises as the train pulled out of every station from Stratford onwards. LUL also reported that passengers could hear noises from Mile End onwards. This is further described in section 3 of this report.

- 2.5 The driver of the train following 002 reported that there were "dusty and murky" conditions at Bethnal Green and Liverpool Street stations. On hearing that there might be a problem with train 002 the same driver recalled hearing a noise when it had left Leytonstone.
- 2.6 At 13.47, the Line Controller decided to take 002 out of service. At about 13.50, as train 002 was leaving St. Paul's station, the driver was advised to terminate the service at Holborn where sidings were available. This instruction was given following further reports of "murky" tunnel conditions at Bank station and from a Station Assistant working on the westbound platform who heard unusual noises as 002 left Bank.

³ London Underground Interim Report 11 April 2003, page 8.

⁴ A Line Controller is member of LUL staff on duty in a Line Control Office, Signalling Control Centre or Service Control Centre who is authorised to co-ordinate the day to day working of the railway.

- 2.7 The Committee was told that the Line Controller is not able to talk directly to staff on a station platform.⁵ This inability to communicate directly appears to the Committee to have cost time and allowed 002 to leave St. Paul's station.
- 2.8 On leaving St. Paul's, passengers on 002 noticed increased noise levels and sparking coming from underneath the train. A further loud noise was heard as the motor became detached from the train and struck the track. Passengers in the carriages behind the motor noticed the train "bounce" over the motor.
- 2.9 Entering Chancery Lane the driver of 002 noticed the train dragging and operated the "Mayday" signal at 13.52. Seeing what he thought to be smoke the driver tried to contact the Line Controller but operated the train's Public Address system by mistake. Passengers in the train heard the words "Mayday" and "Fire".
- 2.10 The noise, sudden stopping of the train, reports of fire and the failure of some of the train doors to open immediately, understandably caused some panic among passengers. The driver of 002 proceeded along the train opening doors manually and helping passengers leave the train.
- 2.11 Chancery Lane's Public Address system was broadcasting evacuation messages. Station staff and off duty members of staff who were on 002 assisted in the evacuation of the passengers from the train and station.
- 2.12 The first call to the emergency services was made at 13.54 and the first London Fire Brigade appliances arrived at 13.57, followed by police and ambulances.
- 2.13 A total of 32 passengers received treatment for injuries such as minor cuts, dust inhalation and shock. The most serious injury sustained was a broken ankle as one customer tried to escape from the train.
- 2.14 The following train was at St. Paul's at the time of the derailment and passengers were evacuated from that station by 14.25. The train behind this one however had halted in the tunnel just before Bank station. Problems isolating the electric current and freeing emergency exit doors meant that passengers were not evacuated until 14.55 having had to walk along the track to the platform.
- 2.15 The Central Line and Waterloo & City lines were closed after the derailment. A full service was not resumed on the Central Line until the end of May.
- 2.16 **We are concerned that, more than four months into the official investigation, London Underground has not yet identified the underlying cause of the derailment.**⁶
- 2.17 **We find it difficult to reconcile this inability to identify the cause of the problem with London Underground's statement that they are absolutely confident it is safe to run these trains.**⁷

⁵ London Underground, evidentiary hearing 13 February 2003.

⁶ London Underground Interim Report, 11 April 2003, page 3.

⁷ London Underground Press Release No. 56, 11 April 2003.

2.18 From the available evidence we have a number of concerns:

- *We believe that the train could, and should have, been taken out of service earlier. Liverpool Street station offered ample staff on duty to cope with a train being taken out of service and alternative connections for onward journeys.*
- *We are concerned that qualified staff were not available to investigate the reports of noise, either on board the train or in the Line Control Centre. Passengers could hear a noise – so how could not London Underground Staff?*
- *We were told that as soon as enough information was available to the Line Controller the train was taken out of service. However it has emerged that the Line Controller was not aware of the history of motor problems with these trains, and there was no engineering advice available in the Control Centre on the day of the derailment.⁸*

2.19 The basis for these concerns is discussed in more detail in the remaining sections of this report.

⁸ Section 5 of this report details the reasons for our concerns over this issue.

3 The passenger experience, arrangements for evacuation following the derailment and afterwards

- 3.1 The information in the previous section has been derived from London Underground. In order to understand the passenger experience leading up to the derailment and the evacuation the Committee contacted a number of passengers who witnessed these events.
- 3.2 The Committee is extremely grateful to the following members of the public who volunteered to appear before the Committee to answer questions surrounding Chancery Lane:⁹
- Mr Mark Barnes
 - Mr Jason Josefs
 - Mr Christopher Mison
 - Mr Winward Regis
 - Ms Linzi Stanford
- 3.3 Our eyewitnesses were on different parts of train 002 and on the platform at Chancery Lane. Mark Barnes and Linzi Stanford were in the last carriage, which derailed and stayed in the tunnel. They had to walk out through another carriage to get out of the train. Winward Regis was in the third carriage from the back of the train – this one also derailed. Christopher Mison was on the fourth carriage – this did not derail and made it through to the platform. Jason Josefs was on the platform at Chancery Lane when the derailment occurred.
- 3.4 A summary of the eyewitness accounts is contained in Appendix 1 to this report.
- 3.5 Members were impressed that after this traumatising experience eyewitnesses were willing to speak about what happened at a public meeting. The Committee gained a considerable amount of valuable information from the views of passengers, which is an important and (as we heard) overlooked aspect of the incident.
- 3.6 Key issues emerge from the evidence we received.
- 3.7 The question of unusual noises being detectable is unresolved, as only one of our witnesses was aware of something out of the ordinary.¹⁰ The fact that Mr Regis is a regular Central Line user is relevant. London Underground's latest interim report states that there was no chance to ask a qualified Call Point Train Maintainer to investigate the reports of noise; instead, it was a Station Assistant who was asked to do this.¹¹

⁹ Evidentiary hearing 20th March 2003.

¹⁰ Several other passengers in the carriage that derailed were aware of noises from Mile End onwards. London Underground Interim Report 11 April 2003 page 9.

¹¹ London Underground Interim Report 11 April 2003 page 16.

- 3.8 London Underground told us that they expect passengers to operate the emergency alarm if anyone suspects there are unusual circumstances. Representatives of the trade unions reiterated this expectation.¹² None of our eyewitnesses were aware of this fact. The Committee believes that this is not acceptable. London Underground must do more to make passengers aware of safety procedures and the responsibilities placed on those using the Underground.
- 3.9 The official injury count of 32 people seems to be understated. At least three of our witnesses reported whiplash injuries, back strains and suffering from dust inhalation. On visiting hospitals they were told of many more passengers who had attended for treatment to various injuries.
- 3.10 Understandably there was panic and confusion among those involved. The driver appears to have used the train's Public Address system to broadcast a Mayday message in error.¹³ Perhaps a pre-recorded evacuation message could relay the urgency of the situation in a calm fashion.
- 3.11 While some doors appeared to open, others did not. LUL has a policy of not making it possible for passengers to leave trains in an emergency unless they are supervised: it relies on staff to evacuate passengers.¹⁴ There is clearly an issue concerning the inability of passengers to open doors from the inside of a carriage in an emergency. Had there actually been a fire there was a real possibility of deaths or more serious injuries.
- 3.12 The emergency exit signs were clearly inadequate, as the thick dust obscured them, and there were no signs indicating that exit was not possible from the end of the platform away from the derailed train.
- 3.13 The Chancery Lane platforms are on different levels with no directly interconnecting passages between them. This means that there is only one exit to the opposite platform unlike most stations that have a number of connecting passages linking platforms together. The derailed train could have blocked the single exit at Chancery Lane making escape to the surface impossible for passengers.
- 3.14 At least four staff were available for immediate assistance on the platform after the accident along with a number of off-duty staff on the train. The Committee remains concerned that had the accident occurred on a Sunday, when Chancery Lane is closed, the staffing levels may have been inadequate to cope with the evacuation.
- 3.15 The Committee is concerned that the down escalator was not reversed to enable a more rapid evacuation. London Underground staff do not appear to have been equipped with lights or megaphones.¹⁵
- 3.16 Everyone involved was impressed by the speed with which the emergency services attended the Chancery Lane incident. Large numbers of the press and

¹² Evidentiary hearings 13 February and 6 March 2003.

¹³ London Underground Interim Report 11 April 2003 page 47.

¹⁴ London Underground Interim Report 11 April 2003 page 37.

¹⁵ Evidentiary hearing 20th March 2003.

television crews were also quickly at the scene, but our witnesses had no recollection of any member of London Underground being available outside the station to assist passengers.

- 3.17 The release of large amounts of tunnel dust and concerns about the presence of asbestos, worried a number of passengers. While sampling and analysis found no trace of asbestos, we believe that more could have been done to publicise this in order to reassure those who were exposed to the dust.
- 3.18 The way in which London Underground handled the aftermath of the derailment raises questions. We understand that LUL wrote to some 67,000 Central Line customers following the incident but our witnesses feel that more should have been done such as setting up an incident centre where anyone who was involved could seek advice, reassurance and the offer of counselling.¹⁶
- 3.19 From the evidence given by our eyewitnesses the Committee has a number of observations to make:
- *We believe the official injury figure is an underestimate. Our witnesses suffered injuries which were not part of LUL's official total. According to our witnesses other passengers attended hospitals throughout London and the South East in the following days complaining of injuries sustained in the derailment and evacuation – they were not part of LUL's total either.*
 - *The number of qualified maintenance staff appears inadequate in terms of guaranteeing immediate investigation of reported problems. Staff also appear to be inappropriately concentrated in too few depots along the line.*
 - *We are concerned that the expectation that the use of passenger alarms as anything other than an additional safety measure is flawed. What passengers should do in safety planning should be better explained and understood, and it cannot be a substitute for adequate technical expertise and intervention in this critical area. London Underground should immediately make passengers aware of safety procedures and the responsibilities placed on those using the Underground.*
 - *Consideration should be given to providing pre-recorded emergency Public Address messages to reduce the possibility of creating panic.*
 - *London Underground should review the adequacy and siting of emergency exit signs. More thought also needs to be given as to how passengers can more easily open the emergency doors from inside carriages.*
 - *We remain concerned that the emergency evacuation plan at Chancery Lane may not have been followed. Why were the down escalators not reversed to speed up passenger evacuation from the station?*
 - *The design of Chancery Lane, with only one exit from the westbound platform, poses a serious risk in the event of an emergency. We believe that London Underground should review emergency plans for stations with similarly limited options for escape.*

¹⁶ London Underground issued an appeal for witnesses to the derailment on their website on 6 February: <http://www.thetube.com/content/pressreleases/0302/06.asp#appeal>

- *London Underground should review procedures for post incident customer care, and the provision of information to customers at regular intervals following serious disruptions to the service, such as Chancery Lane.*

4 The circumstances leading to the incident

- 4.1 The Transport Committee was asked to investigate the circumstances leading to the derailment, including any relevant management and maintenance arrangements that may have had a bearing on the incident.
- 4.2 The derailment was caused when a motor became detached from underneath the rear of the fifth car of the train. This was the third time since September 2001 that Central Line trains had experienced the same problem.
- 4.3 In September 2001, during an examination at Hainault, it was discovered that two motors had become detached and wedged underneath a train. Failure of two mounting bolts and part of the motor mounting bracket was found to be the cause.
- 4.4 One year later, in September 2002, another motor became detached as a train was entering Loughton sidings. This caused a derailment. The train had been taken out of service following reports of noise from the driver and investigation by a Call Point Maintainer.¹⁷ Broken mounting bolts and a failed safety bracket were found to be responsible.
- 4.5 As a response to these discoveries a programme of regular checks of the motor mounting bolts was instigated every ninety days. Following the second incident at Loughton this check was extended to every five days and to cover safety bracket bolts. **The bolts on the derailed train had been examined 48 hours previously and had passed inspection.**
- 4.6 In order to check each train every five days, at least fifteen trains a day needed to be tested. Two members of staff carried out the procedure on six trains in a ten-hour shift with an additional member of staff on three trains at each of the depots at Ruislip and Hainault. More than 11,000 bolts needed checking.
- 4.7 We questioned both LUL senior management and the unions on the margin for error in this task. We were concerned that this task, while vital, was both boring and repetitive and would require an adequate supervision regime.¹⁸
- 4.8 Our concerns were supported by London Underground's own investigation. This procedure "entails checking a single bolt not being loose approximately every twenty-four seconds... While this is possible it is obviously highly repetitious and, being a safety task, one must question whether there might be any lapse in concentration".¹⁹
- 4.9 The same report highlights concerns about the adequacy of the safety checks which were implemented after Loughton and poor management control of the process – namely:
- Little formal training of the maintenance staff involved in the bolt checks
 - Inadequate supervision of the checks

¹⁷ Paul Godier, Managing Director of LUL, LTUC hearing 13 May 2003.

¹⁸ Evidentiary hearings 13 February and 6 March 2003.

¹⁹ London Underground Interim Report, 11 April 2003 page 41.

- Unhappiness of the maintenance staff with the tools provided and the procedure they were asked to undertake
- 4.10 In addition to motor bolt fixings, London Underground's investigation has revealed that gearbox failures were observed at both the Hainault and Loughton incidents. The gearbox on train 002 exhibited extensive damage and despite the manufacturers' recommendation of a gearbox overhaul every 4½ years it had not been overhauled in some ten years of service.²⁰
- 4.11 Section 5 of this report deals in more detail with safety procedures adopted under the PPP shadow running regime.
- 4.12 From evidence we received and have seen in other published sources we have a number of serious concerns about circumstances leading up to the derailment:
- *The remedial actions after Loughton were obviously inadequate.²¹ We have concerns that the 5-day check was not extended because of the impossibility of maintaining a full Central Line service that a more rigorous safety procedure would entail. It seems to us that the 5-day check seems more in line with maintaining a service than solving the underlying problem.*
 - *We have concerns over the reduction in the number of full-time maintenance staff and the inadequacy of supervision of the maintenance regime instigated after Loughton²².*
 - *The number and availability of qualified Call Point Maintainers able to respond immediately to reported problems may also have had an impact on the derailment²³.*
- 4.13 **Failure to identify the root causes of the problem after Loughton and failure to comply with manufacturer's recommendations concerning overhaul and maintenance leads the Committee to believe that Chancery Lane was an accident waiting to happen.**

²⁰ London Underground Interim Report, 11 April 2003 page 43.

²¹ Confirmed by LUL decision to immediately withdraw the Central Line fleet. London Underground Interim Report, 11 April 2003 page 23.

²² Evidentiary Hearing, 6 March.

²³ London Underground Interim Report, 11 April 2003 page 16.

5 Safety procedures adopted under the PPP shadow running regime

- 5.1 London Underground Limited has operated under the PPP structure of one operating company and three infrastructure companies (InfraCos) since 19 September 1999. This is known as 'shadow running'.
- 5.2 Shadow running is the period from the initial restructuring of the Underground until the transfer of the InfraCos to Tubelines and Metronet the companies who will renovate the Underground. This period was set aside in order to test and refine the new organisation and the effectiveness of the InfraCo PPP contracts.

In September 1999, HM Railway Inspectorate of HSE (HMRI) accepted the LUL "shadow running" safety case for PPP. In doing so, HMRI were satisfied that a safety justification for the Underground was being appropriately transferred and maintained; that there was clear allocation of individual responsibilities within the proposed new structure of the Underground; and that LUL were progressing adequate arrangements to take charge of any operational emergency and in particular to ensure suitable co-operation between parties.²⁴

- 5.3 London Underground has previously told an Assembly committee that they are proud of their safety record.²⁵ There have been no passenger fatalities, due to an accident involving a train, for over 25 years. The last one was at Moorgate in February 1975 where over 40 people died. Clearly there are, however, risks on the Underground as we have sadly seen with the Chancery Lane derailment.
- 5.4 Safety on the Underground was put into context for the Committee.
- 5.5 Paul Godier, Managing Director of London Underground told us that "I do think it is, perhaps, very important, without in any sense wanting to sound complacent, to just remind ourselves that the Tube remains safe as it stands today, and is an extremely safe system. One of the reasons why the Chancery Lane accident is attracting a lot of attention, and I entirely understand the attention, but one of the reasons, of course, (is) because it is so unusual. It is nearly three decades since there was a fatal train accident on the London Underground. And, of course, in that time, as you will know, in the Greater London area, probably between 20,000 and 30,000 people have died on the roads in that same time".²⁶
- 5.6 The Committee however was instructed by the Assembly to investigate the safety procedures adopted under the PPP shadow running regime and we were rightly determined to balance the assurances given to us by London Underground with a number of concerns expressed about current safety practices on the Tube system.

²⁴ Memorandum by the Health and Safety Commission to the House of Commons Select Committee on Environment, Transport and Regional Affairs. March 2000.

²⁵ Mind the Gap – between what Londoners want and what Londoners get. Report of the Future Tube Priorities Investigative Committee, January 2003.

²⁶ Minutes of the evidentiary hearing 13 February 2003.

- 5.7 Officials from the main trade unions representing staff working on the Underground outlined a number of concerns about safety practices adopted on the Tube.²⁷
- 5.8 These include:
- Reducing the number of depots at which train maintainers are based on the Central Line from six to two today
 - Failure of safety equipment on the trains involved such as the emergency detrainment ramp²⁸ and wrongly fitting short circuiting devices
 - Poor maintenance and cleaning regimes including the inadequate maintenance of batteries which should provide emergency lighting
 - Reduction in the number of permanent maintenance staff and their replacement with temporary contract workers
 - The poor availability of technically competent and qualified maintenance staff to attend when there are reports of problems
 - Cancellation of meetings between management and health and safety officials
 - Failure to release health and safety officials from duty to attend safety meetings
 - Poor communication of safety instructions to staff
- 5.9 London Underground's latest interim report seems to confirm trade unions' concerns over the functioning of some of the safety equipment such as emergency lighting, the detrainment ramp and short-circuiting devices.²⁹
- 5.10 Overall, the unions are concerned that pressure is put both on management and staff to keep trains in service, in order to avoid the penalties that will be incurred under full PPP operation.
- 5.11 London Underground management told us however that no party's interests are served by short-term maintenance savings and the over riding concern is that of safety.
- 5.12 The Committee cannot come to a view about the impact of shadow running on safety without more information. What is clear however is that there seems to be a very real sense of mistrust between the two sides. In fact the relationship between London Underground management and unions appears close to paralysis. Committee Members see considerable merit in moves to build confidence between management and unions in better partnership working.
- 5.13 There is one further area of deep concern to the Committee. Again this has been revealed in the latest London Underground Interim Report and was not

²⁷ Evidentiary hearing with Bob Crow (RMT), Steve Grant (ASLEF) and Rick Justham (TSSA), 6 March 2003.

²⁸ A detrainment ramp is a temporary ramp fitted in the driver's cab which assists the evacuation of passengers from the train and onto the track.

²⁹ London Underground Interim Report, 11 April 2003 pages 47 – 49.

available to the Committee in a public hearing. This relates to the briefing of London Underground staff on the results of previous incidents and subsequent directions issued from investigations.

- 5.14 Following the Loughton incident one of a number of mitigation measures included a direction that “with immediate effect: all operational reports of smell, noise and or smoke under car will result in that train being removed from passenger service”.
- 5.15 “This requirement was not communicated to any London Underground staff involved in the operation of the Central Line on a day to day basis nor were any steps undertaken to update the Defective In Service Instructions or any other documentation”.³⁰
- 5.16 London Underground’s report also reveals that the Line Control Manager had no direct knowledge of the derailment at Loughton and had not received any briefing on the history of problems with the 1992 stock.³¹ LUL however have now appeared to contradict this aspect of the report.³²
- 5.17 The unions expressed concerns about the availability of qualified maintenance staff. “Train Doctors” are “competent technicians provided by the InfraCo to work in the Line Control Centre providing technical support to Line Controllers”. Train Doctors are not available at weekends. The Chancery Lane derailment happened at a weekend.
- 5.18 We would need to see more information before the Committee can be convinced over safety procedures adopted under shadow running. However from the evidence put before the Committee we have a number of concerns which include:
- *The relationship between LUL management and unions does not appear to be conducive to the highest standards of health and safety. Long-standing union concerns do not appear to be adequately investigated. There should be a review of how health and safety issues are raised and dealt with.*
 - *Maintenance staff and budgets appear to have been reduced in the run up to shadow running and this seems to have contributed to problems with the poor standard of maintenance of safety equipment.*
 - *There needs to be an urgent review of how safety issues are communicated from lessons learned and the relevant procedures and documents are updated.*

³⁰ London Underground Interim Report, 11 April 2003 page 36.

³¹ London Underground Interim Report, 11 April 2003 page 17.

³² London Transport User Committee hearing 13 May 2003.

6 Purchasing procedures used to acquire the Central Line trains

- 6.1 The Central Line trains are known as 1992 Tube Stock. There are a total of 87½ full-length trains, 85 on the Central line, and 2½ on the Waterloo & City line³³ making a total of 700 individual cars of this type.
- 6.2 Until 1987 London Underground carried out the design of most of its rolling stock covering most major components and Metro Cammell mainly built the trains.
- 6.3 The 1992 stock was the first to be procured from outside London Underground itself and were built by BREL³⁴, which won a contract in September 1989. BREL manufactured these trains to a broad specification prepared by London Underground. This departure from previous practice was based on the idea that it would bring innovation into design well as some of the safety features that London Underground required.³⁵
- 6.4 The trains were designed to run with Automatic Train Protection and Automatic Train Operation that allow faster overall running speeds to be achieved safely. When these trains were originally introduced speed was limited to 80 kph however when re-signalling of the Central Line was complete, in 1998, the maximum running speed was increased to 100 kph.
- 6.5 The Central Line trains are less than 10 years old. A LUL manager told LTUC in November 2002 that the Central Line rolling stock is “inherently unreliable in its design and manufacture” and part of the reason for the “appalling performance” was that the trains were procured at a low cost basis from manufacturers not used to building Underground trains.³⁶
- 6.6 It has been reported “there have been about 4,500 modifications since they (the Central Line trains) came into service. All new trains are subject to modification in service and this is expected – but nothing like what has had to be done here.”³⁷ LUL told the Committee that these trains are planned to be in service for another 30 years.
- 6.7 Bob Crow, General Secretary of the RMT told the Committee that:
“Since the Central Line trains came into service they have never been right. They were breaking down so many times - at huge cost - that they introduced a new grade called a “Train Doctor” because the trains were sick all the time... On top of that, the trains brought in were incompatible with the signalling system and the new track system. There have been constant problems with trains breaking down and so on.

³³ A full-length train is made up of 8 cars. The Waterloo & City Line runs shorter four-car trains. Five four-car trains run on this line which explains the 2½ train total.

³⁴ British Rail Engineering Limited has been through different ownership and is now part of Bombardier - part of the Metronet consortium now responsible for upgrading, replacing and maintaining two-thirds of London Underground’s infrastructure.

³⁵ Keith Beattie, Chief Engineer LUL. Evidentiary Hearing 13 February 2003.

³⁶ Bob Bayman, Service Delivery Manager Trains, BCV. Service Quality Sub-Committee, LTUC, 6 November 2002.

³⁷ Evening Standard, 27 January 2003.

When people say these contracts are better value... with all the amount of money that's been spent on these trains breaking down, they become a very, very expensive train.... The Metropolitan Line has a far superior train even though it was built some 30, 35 years before the present ones".³⁸

- 6.8 The Committee was told that it is highly unlikely that London Underground would replace the whole 1992 stock. Engineers would be expected to come up with modifications to deal with the problem identified as the cause of the Chancery Lane derailment.³⁹
- 6.9 In conclusion, we believe that there are two points to note from the design and procurement of the 1992 stock:
- The Central Line is the only fleet designed by manufacturers which do not have any maintenance obligation⁴⁰
 - Work recently completed on 1992 Tube Stock indicates that at high speed there is a resonant condition that produces high fatigue loads on the motor mountings⁴¹
- 6.10 There are issues with the 1992 stock in terms of design and we have a number of concerns over the procurement procedure:
- *The important principle of Design, Build and Maintain is demonstrated. There can be little doubt that the absence of this contributed to the poor performance of the Central Line trains. Will PPP improve maintenance of 1992 Stock? We need to be reassured that this remedied under PPP.*
 - *Automatic Train Operation allows high speed running and faster acceleration and braking on the Central Line. We have concerns surrounding the impact of high speed running on the mechanical reliability of these trains.*
 - *These concerns are multiplied by the failure, so far, to discover the root cause of the motor problems and the fact that these trains are planned to be in service for another 30 years.*
 - *Irrespective of safety implications what is the potential cost of maintaining these trains that are not yet a quarter way through their planned service lifetime?*

³⁸ Bob Crow, General Secretary of the RMT union, Evidentiary Hearing 6 March 2003.

³⁹ Mike Strzelecki, Director of Safety, London Underground, evidentiary hearing 13 February 2003.

⁴⁰ London Underground Interim Report 11 April 2003, page 31.

⁴¹ London Underground Interim Report 20 February 2003, page 12.

7 Provision of alternative transport facilities in the aftermath of the derailment

- 7.1 Over 600,000 passengers use the Central Line daily. While the line was closed these people faced serious disruption to their journeys.
- 7.2 From Monday 3 February LUL ran buses on ten special rail replacement routes linking Central Line stations with alternative Tube and National Rail services. All but one of these ten services ran daily.
- 7.3 Eight of the ten replacement bus routes served the east end of the Central Line as that part of London has little other alternative Tube service. The services were designed to link the Central Line routes to National Rail stations and the Victoria, Hammersmith & City, District, Metropolitan, Piccadilly, Jubilee and Bakerloo lines.
- 7.4 Concerns were raised that the replacement bus routes were not aimed at serving Central London. The Mayor told the Assembly that in Central London passengers have many more alternative Tube and bus services. Several options were considered by LUL and the advantages and disadvantages of each were considered before any decision was made.⁴² Nonetheless this led to overcrowding on the replacement buses and potential public disorder in many places, as passenger's frustration grew.
- 7.5 Some 100 buses were used in providing a replacement service.⁴³ The Committee was told that buses were sourced from all over the UK in an attempt to provide as good a service as possible. London Underground was responsible for planning and providing these services and there was liaison with TfL in an effort to plug the gap left by the complete closure of the Central Line.
- 7.6 London Underground offered refunds to passengers who would normally have used the Central Line. Over 150,000 claims have been made to the Customer Service Centre. But, with the resumption of, albeit a partial service, compensation payments will no longer be processed.
- 7.7 *Our conclusions are that it would be difficult to envisage any other response than that implemented by London Underground in the provision of alternative transport facilities in the aftermath of the incident. Buses however are no substitute for a functioning Tube line which normally carries some 600,000 passengers a day.*
- 7.8 *There may be issues surrounding the publicity and administration of compensation payments but more information would be needed before the Committee can make any judgement.*

⁴² Mayor's Question Time, 26 February 2003.

⁴³ LTUC hearing 13 May 2003.

8 The efficiency of efforts to restore services to the Central and Waterloo and City lines following this derailment

- 8.1 Initial reports estimated that Central Line services would be restored within a few days, but as the scale of the engineering task emerged (replacing over 11,000 bolts on 87½ trains), the date for restoring even limited services was put back.
- 8.2 On 30 January London Underground announced it would be another two weeks before a limited service could be resumed. However, after a number of cancelled re-opening dates London Underground decided only to make announcements of dates when they could guarantee a service.
- 8.3 London Underground decided to introduce a phased service as modified trains became available. The first phase of the reintroduction of services to the Central line commenced on 14 March and consisted of a limited local service on the eastern end of the line running between Leytonstone and Bethnal Green. Phase 2 extended the service to Woodford on 16 March.
- 8.4 On 12 April a Saturday service was introduced on the whole of the Central Line.
- 8.5 By mid May the service was still not up to its full capacity but London Underground was running a full weekday off-peak and weekend service. This equates to about 80 per cent of the normal weekday peak service.
- 8.6 London Underground had hoped to restore a full service by the end of April, but engineers had to carry out additional gearbox checks and repairs.
- 8.7 A normal service was not available on the Central Line until the end of May.
- 8.8 Some estimates have put the cost to London of the Central Line closure at £25 million per week.⁴⁴ It has been reported that Oxford Street traders have suffered a loss of retail trade of as much as 15 per cent.
- 8.9 At the beginning of April London Underground told the House of Commons Transport Committee that it had lost ticket revenue of up to £12 million. It expected compensation claims of £20 million and the cost of repairs to the Central Line of around £8 million.⁴⁵

Why has it taken so long to restore the service?

- 8.10 London Underground has offered the following explanation for the length of time taken to restore a normal service on the Central Line.
- 8.11 The modification process is time-consuming and engineers are working 24 hours a day at Ruislip and Hainault depots to ensure that this is being done safely. The

⁴⁴ <http://www.thisislondon.com/traffic/articles/3813403?source=Evening%20Standard>

⁴⁵ House of Commons Transport Committee, 1 April 2003.

finalised solution has involved a series of sequential and parallel activities including:

- Assessment of the original problem and design of alternative solutions
- Analysis of the test results and selection of the most appropriate solution
- Building, testing and manufacture of the prototype brackets
- Approval of the proposed system by LUL experts and HSE
- Development and approval of the new Quality Assurance maintenance regime by LUL, HSE and Infracore BCV
- Train modifications including bracket installation
- Design of phased introduction of service Case for Safety from Engineering perspective and testing the Case for Safety from Operational perspective
- Trial running of each and every phase
- Checking the infrastructure prior to phase service introduction
- Ensuring staff readiness prior to phase service introduction and the commencement of actual services⁴⁶

8.12 The London Transport Users Committee held an inquiry in public into two aspects of the aftermath of the Chancery Lane derailment.

8.13 The inquiry, which was undertaken by a panel of five LTUC members, took place on 13 May 2003. Alan Cooksey, formerly Deputy Chief Inspector and Head of the Technical Division with Her Majesty's Railway Inspectorate assisted members of the Committee.

8.14 LTUC's inquiry looked into two specific issues:

- On the basis of the information available to the management of London Underground in the immediate aftermath of the Chancery Lane derailment, was total closure of the line the only reasonable option open to them?
- Was there any action that could have been taken by London Underground that could have resulted in services being restored on the Central Line more quickly than was the case?

8.15 Following the hearing in public, LTUC will produce a report setting out its findings and that report and any recommendations will be submitted to, among others, the management of London Underground and the London Assembly. The report is expected at the end of July 2003.⁴⁷

8.16 We expect the LTUC investigation will provide details to answer more adequately a number of questions including:

- *Was it really necessary to close the whole of the Central Line for so long?*
- *Was London Underground too cautious in restoring the service?*

⁴⁶ http://www.thetube.com/content/pressreleases/0305/centralline_update_070503.asp

⁴⁷ LTUC hearing 13 May 2003.

- *Was enough made of the opportunity to do as much maintenance work as possible on the Central Line while it was closed?*

Appendix 1: Summary of eyewitness accounts

- 9.1 **Mr Josefs** was on the platform with his fiancée waiting for the train along with about 30 or 40 other people. As the train came into the station it was making a considerable amount of noise and shaking. At least one door became detached and slammed against the platform wall. The station then began to fill with what Mr Josefs believed to be billowing smoke but later found out was dust from the tunnel. Thoughts of a terrorist attack went through his mind.
- 9.2 He ran away from the derailed train not knowing that he was running away from the exit. Exit signs were difficult to distinguish or not visible due to the dust. Running back past the train and trapped passengers he had to run through the dust to the escalators. People were shouting “Fire”. Three members of London Underground staff equipped with radios were calmly coming down the escalators. On reaching the ticket office he shouted “Fire” and left the station. Within minutes the police and fire brigade were on the scene.
- 9.3 **Mr Regis**, an almost daily user of the Central Line, boarded the train at Stratford in the third carriage from the rear of the train. After spending longer than usual at the platform the train moved off with an unusual noise. At each station the train stopped for longer and there were more noises each time it left the stations. There were no announcements from the driver. At Bank the train stopped and since it remained there for a number of minutes the train became packed with tourists.
- 9.4 Heading from St. Paul’s toward Chancery Lane the train began to judder violently and the lights went out. There were no emergency lights; the only light coming from the tunnel lights. Glass was shattering and what looked like thick smoke came into the carriage. People were screaming and panicking.
- 9.5 The train came to a standstill with Mr Regis’ carriage out of the tunnel and people were able to get out of the train through an open door. Exit signs were obscured because of the thick dust and he began to help people out from between two carriages. Underground staff were on the platform calling for lamps. Upstairs, outside the station was filled with people choking and coughing as the fire brigade, ambulances and police arrived.
- 9.6 **Mr Mison** also boarded the train at Stratford getting on the fourth carriage, ie the one in front of that which eventually derailed. He intended to get off at Holborn and could not recall any strange noises and did not notice it noisier than usual. Coming into Chancery Lane he felt the train was coming into the station very fast, the train started to shake and there was a thundering noise. As the train came to a halt he was aware of an intense rattling noise.
- 9.7 The carriage was packed with people going shopping or to a football match. An announcement was made that there was a fire at the rear of the train, which made the passengers begin to panic. It was impossible to open the door further than inches apart. What he thought was an emergency handle failed to open the door and there was no hammer or other implement to use so started to try and kick open the door. Panic was getting more intense. A door was opened at the other end of the carriage and people began to escape.

- 9.8 Once on the platform people were fairly orderly in leaving the station although on the escalators it was less so. Mr Mison noticed very few staff as he assisted another passenger out on his way out to the surface. He was covered in dust and dazed but apart from the emergency services there was no assistance available.
- 9.9 **Ms Stanford** and **Mr Barnes** boarded the train at Bank and were together in the last carriage of the train. They did not notice any unusual noise but as the train began to shake they expected a large impact. This did not happen and the train juddered to a halt with their carriage remaining in the tunnel.
- 9.10 The doors were open and they could see soot on the tunnel lining. As the lights went out they could hear the real panic in the driver's announcement which said "There is a fire. Get off. Hurry, hurry, hurry". They believe that this added to the panic and confusion however other passengers managed to calm the situation.
- 9.11 Passengers on this car managed to escape through the ripped off doors of the carriage in front and onto the platform which was covered in glass. Other doors were still closed with passengers still trapped inside the train. People were trying to prise these open. Following other passengers out of the station they were impressed by the speed of arrival of the emergency services. They were suffering from shock but there was no one to check if they were all right.

Appendix 2: Evidentiary hearings and expert witnesses

First evidentiary hearing 13th February 2003

Paul Godier, Managing Director, London Underground Limited (LUL)

Mike Strzelecki, Director of Safety, Quality and Environment, LUL

Keith Beattie, Chief Engineer, LUL

David Crawley, Managing Director of Infracore BCV Limited

Second evidentiary hearing 6th March 2003

Bob Crow, General Secretary of RMT (Rail, Maritime and Transport Workers Union)

Steve Grant, the District Secretary, District No. 8 of ASLEF (Associated Society of Locomotive Engineers and Fireman)

Rick Justham, Negotiations Officer, TSSA (Transport Salaried Staffs' Association)

Third evidentiary hearing 20th March 2003

Mr Mark Barnes, derailment eyewitness

Mr Jason Josefs, derailment eyewitness

Mr Christopher Mison, derailment eyewitness

Mr Winward Regis, derailment eyewitness

Ms Linzi Stanford, derailment eyewitness

Appendix 3: Orders and Translations

For further information on this report or to order a bound copy, please contact:

Paul Watling
London Assembly Secretariat,
City Hall, The Queen's Walk,
London, SE1 2AA
paul.watling@london.gov.uk
tel. 020 7983 4393

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Appendix 4: Principles of Assembly Scrutiny

The powers of the London Assembly include power to investigate and report on decisions and actions of the Mayor, or on matters relating to the principal purposes of the Greater London Authority, and on any other matters which the Assembly considers to be of importance to Londoners. In the conduct of scrutiny and investigation the Assembly abides by a number of principles.

Scrutinies:

- Aim to recommend action to achieve improvements;
- Are conducted with objectivity and independence;
- Examine all aspects of the Mayor's strategies;
- Consult widely, having regard to issues of timeliness and cost;
- Are conducted in a constructive and positive manner; and
- Are conducted with an awareness of the need to spend taxpayers money wisely and well.

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Greater London Authority

City Hall

The Queen's Walk

London SE1 2AA

www.london.gov.uk

Enquiries **020 7983 4100**

Minicom **020 7983 4458**