

**TRANSPORT FOR LONDON**

**SAFETY, HEALTH AND ENVIRONMENT ASSURANCE COMMITTEE**

**SUBJECT: FIRE SAFETY AND EVACUATION OF UNDERGROUND STATIONS**

**DATE: 14 SEPTEMBER 2009**

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**1 INTRODUCTION**

- 1.1 The TfL Safety, Health and Environment Assurance Committee (SHEAC) has asked for a report describing the evacuation procedures at London Underground (LU) stations and details of training provided to staff, together with a general overview of Bank and similar stations. This report provides these details.
- 1.2 The Safety, Health and Environment Assurance Committee is asked to note the report

**2 BACKGROUND**

- 2.1 Since the fire at Kings Cross station in November 1987, London Underground (LU) has progressively and very significantly reduced its fire risk. This reduction in risk has been achieved through:
- (a) Replacement of hazardous (flammable) materials on LU's infrastructure;
  - (b) Developing and implementing standards which place stringent controls on the use and type of material permitted on the LU network;
  - (c) Control of ignition sources permitted on the network ;
  - (d) Installation across the network of fire detection, suppression and alarm systems, together with compartmentation arrangements; and
  - (e) Provision of specific fire safety training and high levels of staff awareness of fire risks and related controls.

The extensive programmes that put all the above into place ensured that all the recommendations from the investigation into the Kings Cross fire (contained in 'The Fennell Report') were successfully closed out.

- 2.2 Over the last twenty years, the fire risk from all sources (excluding train fires which are initiated by terrorist action) has reduced to such an extent that it now

represents less than seven per cent of overall network risk, as modelled in the LU quantified risk assessment (LU QRA) model of all possible major accident types.

- 2.3 This very low residual risk is reflected in the fact that the numbers of confirmed fires on the LU network have been reducing year on year and, for the last few years, have been at their lowest level since effective records were kept in the early 1990s. This is attributed to the tight controls outlined above together with strictly enforced good housekeeping arrangements. As a result, all reported fires have been quickly extinguished and none has resulted in a significant fire for many years.

### **3 LU's ARRANGEMENTS FOR FIRE SAFETY**

- 3.1 Day to day responsibility for managing all risks on stations, including fire, rests with the relevant Group Station Manager (GSM). Reporting to the GSM are teams of Duty Station Managers (DSM) who work on a shift basis and are responsible for the management of the stations on a day to day basis. Reporting to the DSMs are the Station Supervisors and Station Assistants who are allocated to each station and who undertake the specific tasks necessary for the effective and safe running of each station on a daily basis. This includes specific roles for the evacuation of stations.
- 3.2 A key part of the fire safety arrangements are emergency plans, risk assessments and the station inspection regimes. These have all been developed over many years and continue to be the subject of on-going review and improvement. In summary, every station has:
- (a) A congestion control and emergency plan (CCEP) that includes the requirements for safe evacuation of the station. These requirements are regularly tested and staff debriefed after the evacuation to ensure continuous improvement. Both the tests and debriefs are recorded locally;
  - (b) Risk assessments specific to that location covering all risks to customers and employees, including fire; and
  - (c) Programmes of regular operational and planned general inspections undertaken by Station Supervisors and DSM's respectively. Where such inspections identify technical problems/faults e.g. with the fire detection or suppression systems or out of date fire extinguishers, these are reported to the Fault Reporting Centres (FRC) for logging and action within specified time limits.
- 3.3 In addition to the general inspection regime summarised above, GSMs are required by LU standards to undertake regular checks of all aspects of the local health, safety and environmental arrangements, including fire safety measures. These checks are, in effect, a local audit of the stations that the GSM is responsible for and include ensuring that:

- (a) The required number of staff have been familiarised with the locations where they are required to work;
  - (b) Staff have undertaken the appropriate training, including fire training;
  - (c) Staff understand their role(s) in the evacuation procedures; and
  - (d) One third of staff have undertaken a station evacuation or drill within the last 12 months, as required by LU standards.
- 3.4 All station staff that are required to work on a station, are familiarised with that station including its CCEP and their role within it. This forms part of their induction when they are allocated to a station. In addition to station familiarisation, as part of their training for their specific roles, staff are trained to understand the hazards associated with fire, the control systems LU has in place and the action they should take in the event of a fire. This understanding is re-assessed each year as part of their continuous development programme. Where shortfalls are identified, suitable mitigating actions are identified and become part of their personal development plan.
- 3.5 Periodic audits of all these arrangements are carried out by LU's qualified safety auditors. This ensures that the effectiveness of the safety management arrangements is independently assessed and that, when necessary, corrective actions are determined and tracked to completion.

#### **4 STATION EVACUATION**

- 4.1 The decision to evacuate a station is made by:
- (a) The Station Supervisor; or
  - (b) A police officer; or
  - (c) A member of London Fire Brigade; or
  - (d) In an extreme emergency, or when a station supervisor cannot be contacted, the Station Control Room Operator, who is in effect, an assistant to the Station Supervisor.
- 4.2 The specific requirements for evacuation, as detailed in the CCEPs are:
- (a) A description of the available evacuation routes;
  - (b) The minimum staff numbers required such that the station can be evacuated safely. These are considered for weekdays, at weekends and between specific times if the requirements are different from the rest of the day;

- (c) The roles and responsibilities of the staff required to take part in the evacuation;
- (d) The location of the rendezvous point where the nominated member of LU staff meets the London Fire Brigade and/or other emergency services. The location of the secondary rendezvous point in the event that the fire or other emergency affects the primary rendezvous point; and
- (e) The location of the staff assembly point and secondary assembly point where all staff, visitors and/or contractors must go. When the evacuation is complete, a roll call is taken against visitor sheets and the evacuation register.

After each evacuation event a debriefing session is held as soon as possible to check staff actions against those specified in the CCEP and to identify any improvements needed.

- 4.3 The CCEPs are reviewed and revised annually, when changes are made either temporarily or permanently at that station, when special events impose higher than usual customer loadings or when improvements have been identified from e.g. debriefs associated with actual evacuations or drills.
- 4.4 Where any works are planned for a station which may affect the means of escape, LU calculates the movement time to clear the platforms and to clear the whole station. These calculations are undertaken for the existing layout and for the revised station layout taking into account the impact of the proposed works. These calculations are based on worst case scenarios agreed with the London Fire and Emergency Planning Authority. The calculations demonstrate that either:
  - (a) The works have no adverse affect on the evacuation arrangements for a station; or
  - (b) That it is reasonably practicable to make improvements to the evacuation arrangements, for example by temporarily providing more staff; or
  - (c) That the works have an adverse impact on the current evacuation arrangements and that further work is required to reduce this time to at least that of the existing situation.
- 4.5 In all circumstances, works only proceed when satisfactory evacuation routes and times have been agreed and put in place, when the CCEP has been updated and when station staff have been briefed on revisions. At Bank station, for example, evacuation of the entire station can be achieved in 15 minutes or less in normal circumstances. The approach summarised above ensures that evacuation can still be achieved in 15 minutes or less when works, such as escalator replacement, are being undertaken on the station.

- 4.6 It should be noted that the information given to the Rail and Underground Panel concerning Bank station, which resulted in the request for this briefing note, was talking about theoretical worst case customer movement times under normal operating conditions. As noted in the preceding paragraph, evacuation times are much shorter (than the movement times) via the designated, shortest possible, evacuation routes with the fire alarms going, evacuation Public Address announcements in progress and station staff carrying out their evacuation duties.
- 4.7 In summary, LU has well established standards and procedures that cover:
- (a) How station staff/managers are trained/familiarised and how this knowledge is maintained;
  - (b) The roles and responsibilities staff undertake in a station evacuation;
  - (c) Station operations in normal, degraded and emergency situations;
  - (d) Engineering requirements for fire systems and materials; and
  - (e) Changes to the station infrastructure and the impact of the fire risk.

As a result, as with other safety risks, fire risks are consistently managed as low as reasonably practicable.

## **5 RECOMMENDATION**

- 5.1 The Committee is asked to NOTE the report.

## **6 CONTACT**

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