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The meeting report on page 449 summarising the London Underground Response to the bombings on 7 July 2005 and the attempted repeat event on 21 July 2005.

OCTOBER 2005 TOYNBEE HALL MEETING

Members who attended the Society's monthly meeting on Tuesday 11 October 2005 will recall that the Lecture Room at Toynbee Hall had been 'double-booked' — see the Committee Report in Underground News No.531, page 176. Our speaker for the evening, Andy Barr MBE, London Underground's Network Co-ordination Manager, was thus unable to give his presentation "Alarms and Excursions". However, through his good offices and contacts he was able to arrange an alternative venue at almost a moment's notice. And so it was that the 40 or so members that remained made their way swiftly by Underground to St. James's Park and assembled in the large room on the 10th floor at 55 Broadway, which is normally used only for special functions. In fairness to those members that decided not to stay to await developments (at Toynbee Hall), Andy's presentation "Alarms and Excursions" has been rescheduled at a future date. In lieu of the advertised meeting therefore, we were given a presentation about London Underground's response to the terrorist events that took place in July 2005. *The operational events, insofar as the effect on passenger services, have already been covered in previous issues of Underground News (August, September and October 2005).*

As Network Co-ordination Manager, it is normal for Andy Barr to visit the Network Operations Centre (formerly the Network Control Centre) at the start of his working day to catch up with overnight and early-morning events on the underground. Thursday 7 July 2005 was no different than normal, with three incidents recorded, all of which could possibly have started with a "bang" of some sort —

- A northbound Northern Line train stalled at Balham at 06.29 because of a hot axle box. Services were suspended south of Stockwell (and were still suspended at the time of the bombing incidents).
- A smell of burning under an eastbound Piccadilly Line train at Caledonian Road suspended services from 07.01 for 30 minutes.
- A defective northbound Bakerloo Line train at Piccadilly Circus suspended services south of Paddington for 30 minutes from 08.07.

It was therefore not unreasonable to consider that nothing out of the ordinary had occurred at 08.50, when a "bang" was heard near Liverpool Street (SSL) followed by a loss of current because of an 11kV feeder rupturing. Similarly at 08.51, reports were received of a "derailment" and "person under a train" at Edgware Road (also SSL) and at the time, nothing especially sinister was suspected, and even at 08.53 when a loss of traction current on the Piccadilly Line in the Russell Square area was reported. It was all consistent with a possible large-scale "power failure" of some sort. The press and TV soon reported these facts, which

were believed to have been correct at that time. But of course, it was soon realised that these three incidents were bomb explosions on Underground trains, as the information came filtering through, which was made more difficult because none of the trains were in stations.

These atrocities were the work of suicide bombers, the first ever such events on the London Underground (although not the first bombs to explode on the system). It was subsequently realised that the bombers had entered the system at King's Cross station and all three devices were timed to go off at about 08.50. It is believed that a fourth bomb was intended for a Northern Line train but because the Northern Line service through Kings Cross was suffering severe delays, the bomber sought another target. The fourth bomb was detonated almost an hour later on a No.30 bus in Tavistock Square at 09.47. Excluding the four bombers, a total of 52 people lost their lives, seven each at Aldgate and Edgware Road, 24 on the Piccadilly Line train between King's Cross and Russell Square and 14 on the bus. There were a total of about 700 people with varying degrees of injury from all four incidents.

The four 'copycat' incidents just two weeks later on Thursday 21 July 2005 were then covered (on the Underground at Warren Street, Oval and Shepherd's Bush and on a No.205 bus in Hackney) but fortunately none of these resulted in a loss of life and consequently there was less service disruption — there was no total shut-down and all of the affected sections and stations were up and running again two days later.

The trailer car on the incident train at Edgware Road had its underframe blown apart and could only be moved off site by being craned out. A 1,000-tonne crane was acquired from a company in Perth. The other damaged car was able to be moved by rail. A further six-car train suffered superficial damage, which was passing the incident train at the time of the explosion. There was no structural damage to the tunnel. The train at Aldgate was moved on its own wheels. Although there was no structural damage, the 11kV cable had to be replaced. One C stock and two A stock trains remained stalled in the area until the site was handed back to London Underground.

Amazingly, the train between King's Cross and Russell Square was able to be moved on its own wheels, even though the two cars involved were severely damaged. Being in the confined space of a tube tunnel, the force of the explosion expanded the train out to and touching the tunnel segments. Cable clips were broken and the current rails were left touching the ballast. This particular site had to undergo major decontamination. There were seven trains trapped in the area until this site was handed back to London Underground.

With the events of 7 July, London Underground had to consider —

- How to deal with the incidents.
- Manage the "fall-out" — people unable to use the Underground (the bus network in zone 1 was also suspended when the No.30 bus exploded at 09.47).
- How to get services back to normal as quickly as possible.

INCIDENT MANAGEMENT

On the morning of 7 July, once it became clear that three bomb explosions had occurred on the Underground, the decision was taken to evacuate the whole of the network, which had been done only once before, on 23 December 1991 during IRA terrorist activities. On this occasion, the whole system was evacuated within one hour, no mean feat bearing in mind

that at the height of the rush hour there were over 500 trains in service, each with a Train Operator, 200,000 passengers on the trains and some 2,500 station staff on duty throughout the network.

London Underground was accustomed to having a 'site' declared as a 'major incident', but never before three at once. Each site at first became a rescue scene and thus each had their own emergency services activity — Fire Brigade, Ambulance and Police, the Metropolitan Police being in overall charge of each. Once all the living casualties had been rescued, the sites then became a 'scene of crime' with cordons set up with very strict access controls. At this stage London Underground and the Infracos themselves were unable to inspect the sites and estimate the damage.

The three incidents resulted in three severely damaged trains and (at that time, it was thought) possible infrastructure damage. Moreover, the safety and the security of the remainder of the Underground network had to be considered, as well as letting the public know what was happening.

Also for the first time, LU had to set up multi-site Incident Control, with "Gold Control" at the Network Operations Centre at 55 Broadway and three "Silver Control" sites at Edgware Road, Aldgate and King's Cross. The "Gold, Silver and Bronze" procedures were set up following one of the recommendations from the King's Cross fire in 1987.

CONSEQUENCE MANAGEMENT

London Underground had no previous experience of multi-site terrorist attacks, but —

- 1.5-million passengers had to get home, even though LU and the London Bus system (in zone 1) had closed down.
- Communications systems were under extreme pressure because of the high volume of mobile phone usage.
- The main line Train Operating Companies (TOCs), Docklands Light Railway and London Bus network resumed services later as the day (7 July) progressed and all assisted by accepting LU's passengers and tickets wherever possible. (Even Heathrow Express agreed to do this — the second time only since its opening, apart from 'planned' acceptance!).
- Health and Safety concerns and reassurance for staff became a priority as did the care of the bereaved and injured.
- 80% of the Underground was back in service the following morning, Friday 8 July 2005.

The locations of all three incidents couldn't have occurred at such inconvenient places, operationally-wise, as large sections of line had to be closed. Those at Edgware Road and Aldgate were at 'key' junctions, each affecting three SSL services, while that west of King's Cross put the Piccadilly Line out of action between Arnos Grove and Hyde Park Corner. The fact that 80% of the network was operating again the following morning in such a short space of time gave a comforting reassurance to the travelling public.

RECOVERY MANAGEMENT

The Recovery Strategy had to consider a number of priorities —

Identify the Recovery Structure.

- Recovery of the site(s).
- Restoring services.
- Restoring 'confidence'.
- Learning lessons.
- Learning for the future.

One of London Underground's Customer Services Directors was assigned full time to the Recovery process and Recovery Plans already in existence (for single sites) were utilised. It was necessary to separate day-to-day operations from the Recovery process. Project Plans for each site were agreed between London Underground and the relevant Infracos. Previous reports of a tunnel collapse (King's Cross — Russell Square) proved unfounded, as was the suggestion of a train being derailed (at Edgware Road).

There were several stages to the Recovery Strategy —

- Completion of "scenes of crime" work.
- Estimation of damage to trains and infrastructure, and repair timescales.
- Removal of damaged trains.
- Repair and testing of damaged infrastructure.
- Handing back of assets and return to service.

All the sites were made secure by the erection of hoardings. For example at King's Cross, hoardings separated the Piccadilly Line from the other 'tube' platforms serving the station and the Piccadilly Line tunnel mouths were 'sealed'.

LESSONS LEARNT

- The major incident plans worked well.
- The multi-site incident strategy was effective.
- The previous London Resilience Exercises meant that organisations had incident contingency plans and people in place.
- The Recovery Strategy used existing plans from previous major incidents, which were implemented after the first day, so the movement from 'incident' to 'recovery' was rapid.
- The Recovery Team process segregated from Operations worked well.

During the recovery process, a number of Health & Safety issues became apparent before services could resume, which were —

- Concerns over asbestos from damaged electrical equipment on trains.

- Bio hazards from casualties.
- Confirmation that health monitoring checks were being carried out and results were clear.
- Staff confidence about future security.

CONCERNS

- The three separate sites stretched resources to the limit, as working shifts were limited to twelve hours.
- Staff communications were slower than would have been desirable.
- An improved system of cordons — some were very restrictive and a change of only a short distance to some would have improved the speed of recovery. 500-metre cordons actually cover a very large area.

Our special meeting ended with a question-and-answer session, summarised as follows:

Q: What happened to all the trains (500-plus) that were still on the railway?

A: Apart from the damaged trains and those stalled within cordons, all were crewed up and moved to depots and sidings, most by 20.00 on the same day.

Q: Why was the No.30 bus off the line of route?

A: Because of the cordons affecting the King's Cross/Russell Square incident.

Q: Why was such a large section of the Piccadilly Line out of action (between Arnos Grove and Hyde Park Corner)?

A: There were no other closer reversing facilities available.

Q: Why wasn't the system shut down on 21 July?

A: No loss of life and using experience gained from 7 July.

Q: Why was the Circle Line only restored during the peaks to start with?

A: Insufficient train staff. Several Edgware Road Train Operators who were on the spot on 7 July were severely traumatised by what they saw and were still off sick. Indeed, at all three sites, London Underground staff of all different grades were the first on the scene to help the victims.

Q: Why were replacement bus services on the Piccadilly Line not organised along the line of route?

A: It became LU policy from the Chancery Lane derailment (25 January 2003) to feed passengers from selected stations to railheads on other lines, which is more effective than covering the line of route, although inevitably some stations will loose out and not have a service.

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