Policy committee
11.06.13

Secretariat memorandum

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London TravelWatch's engagement with rail safety issues

1 Purpose and structure of report

1.1 To outline the arrangements for safety regulation in the rail industry, and the nature and extent of London TravelWatch's involvement with rail safety issues.

1.2 For the purposes of this report, the term safety refers primarily to physical safety (i.e. from accidents), and unless otherwise indicated, it does not include matters relating to security (i.e. from assaults and other forms of crime).

1.3 The report comprises the following sections:

2 Recommendation

2.1 That the report be received for information.

3 Safety regulation

3.1 It is axiomatic that preserving the safety of its passengers, staff, and the public at large – as far as is reasonably practicable - is the first duty of any transport provider. This duty derives in part from common law, in part from general legislation applicable to all employers or occupiers of premises, and in part from a body of railway-specific statutes and regulations (some of which date back to the Victorian era while others have emerged very recently in the guise of EU directives).

3.2 The duty is placed on the railway operators themselves, to the extent that each has control of particular facilities or equipment, and it cannot be delegated. The various component parts of the industry are required to co-operate with each other to manage shared risks where these arise at the interface between different organisations. There is a high level of collaboration between them in recognition of the fact that safety should not be compromised by sectional interests or commercial rivalries.

3.3 There are a number of specialised industry-wide agencies which discharge specific safety-related functions. These are:

3.4 Office of Rail Regulation (ORR)

3.5 Since 2006, the ORR has been the safety regulator for the entire rail industry, which includes the main line network, metros, light rail systems, tramways and "heritage" lines. This is complementary to its role as economic regulator for the main line railways. Its functions include (a) monitoring safety performance and providing advice to operators, (b) scrutinising and approving applications for safety certificates, without which no operating licence is valid, (c) authorising the introduction of new works, equipment and operating procedures, and (d) enforcing the provisions of the Health & Safety at Work etc Act 1974 and related regulations (including, when necessary, issuing improvement or prohibition notices, and bringing prosecutions). Prior to 2006, this function was performed by HM Railway Inspectorate (HMRI), which functioned under the aegis of the Health & Safety Executive (HSE).

3.6 [More information about the safety functions of ORR can be found at http://www.rail-reg.gov.uk/server/show/nav.1210.]

3.7 RSSB

3.8 Now known simply by its initials, the Rail Safety & Standards Board was created in its present form to meet a recommendation made in the report of Part 2 of the Ladbroke Grove Rail Inquiry ("the Cullen report") in 2001. It is jointly owned and funded by all of the organisations which hold rail operating licences on the main line network, i.e. Network Rail, passenger and freight train companies, and those infrastructure maintenance/renewals companies which operate rail-borne engineering plant. Its functions include (a) producing the industry's five-year strategic safety plan, (b) drafting and publishing industry-wide safety standards, including the Rule Book, (c) recording safety-related incidents and issuing safety performance reports, (d) commissioning safety-related research, (e) sponsoring CIRAS, the industry's confidential Incident reporting and analysis system, and (f) managing groups which oversee joint industry action to address particular areas of risk, such as level crossings or suicides.

3.9 [More information about the work of RSSB can be found at www.rssb.co.uk.]

3.10 Rail Accident Investigation Branch (RAIB)

3.11 The creation of RAIB was also recommended in the Cullen report, and has in any event been made necessary in order to achieve compliance with an EU rail safety directive. It is a specialist – and operationally autonomous - unit within the

Department for Transport (DfT), closely modelled on equivalent bodies serving the civil aviation and shipping industries. It became fully operational in October 2005. Its duty is to conduct investigations into significant railway accidents and safety-related incidents, and to make recommendations for mitigating the likelihood of similar events occurring in future. It is solely concerned with establishing fact, and not with apportioning blame (responsibility for bringing any prosecutions arising from such events remains with the Crown Prosecution Service and/or ORR).

3.12 [More information about the work of RAIB can be found at http://www.raib.gov.uk/home/index.cfm.]

3.13 British Transport Police (BTP)

3.14 The BTP is the specialist police force serving the rail industry. The National Rail operators and Transport for London are legally obliged to maintain and fund it, and a number of light rail systems also contract into its services voluntarily. It is governed by a statutory police authority comprising both industry representatives and members of the travelling public, some of whom have been members of London TravelWatch (though they serve as individuals, not appointees). Its officers have exactly the same powers and duties as the members of any civil police force. But they are trained additionally to meet the particular policing challenges of the railway environment, e.g. working on and about the tracks or on trains moving over long distances. Their role is the same as that of the police generally, i.e. protection of life and property, prevention and detection of crime, preservation of public order, etc, but they have particular skills in relation to problems arising in the rail industry such as handling football supporters, preventiing terrorist attacks and dealing with the immediate aftermath of accidents.

3.15 [More information about the work of BTP can be found at www.btp.police.uk.]

3.16 Parliamentary Advisory Council on Transport Safety (PACTS)

3.17 Unlike the bodies listed above, PACTS is a purely voluntary organisation (and is a registered charity). But it has a highly influential and authoritative role in enhancing public and official awareness of transport safety issues. It is a registered all-party parliamentary group, with members drawn from both Houses and from a wide cross-section of individuals and organisations involved with transport policy making and administration, including manufacturers, operators, insurers, academia, local government and consumer groups. Its remit covers road, rail and air safety. It commissions research, publishes briefing papers, monitors parliamentary activity, holds conferences and seminars, and responds to consultation exercises. London TravelWatch has played an active part in PACTS for more than 20 years, particularly in its specialist rail safety working party.

3.18 [More information about the work of PACTS can be found at www.pacts.org.uk.]

4 Role of London TravelWatch

4.1 With one exception, London TravelWatch has no formal duties relating explicitly to safety. But to the extent that safety is an area of concern to passengers (or would-be passengers) generally, it is properly and necessarily an issue of concern to their representative body. There is certainly an expectation on the part of the mass media that London TravelWatch will have an informed view about the industry's safety performance when it is invited to comment on this. And a proportion of its complaints caseload raises safety concerns, with which it has to be suitably equipped to deal.

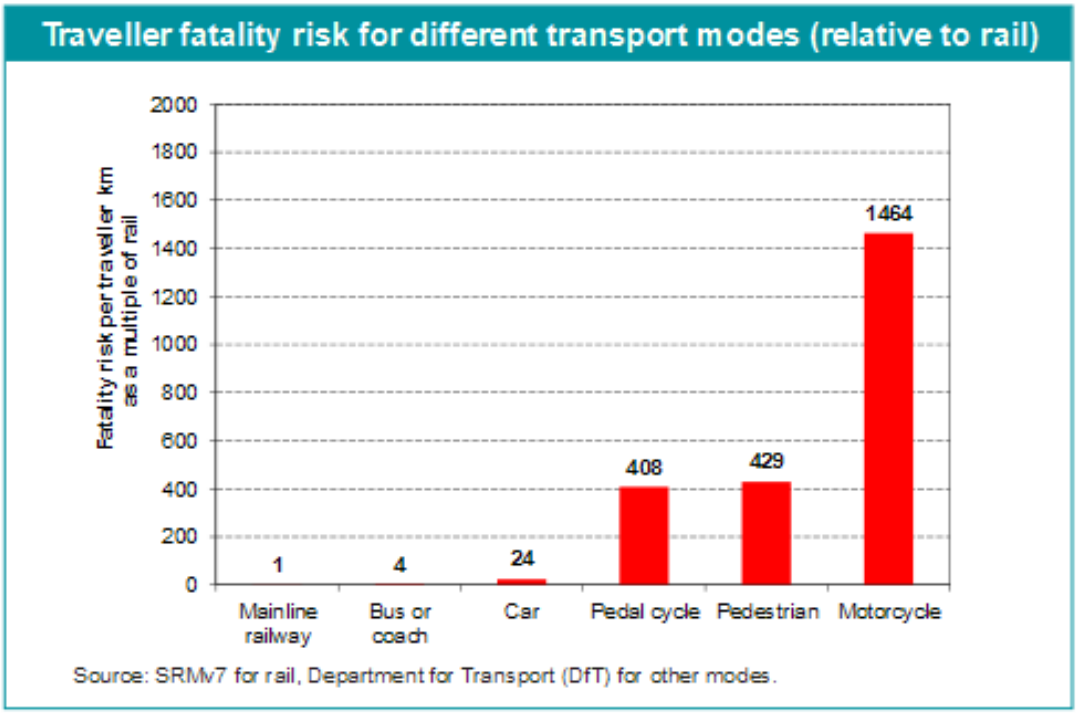
4.2 The exception mentioned in the previous paragraph is the Railways & Other Guided Transport Systems ("ROGS") Regulations 2006, which give effect in domestic law to an EU directive which requires all main line railway operators to hold safety certificates issued by the relevant national safety authority (which in Britain – except Northern Ireland - is the ORR). Such certificates are only issued to operators which can demonstrate that they possess a suitable safety management system. Applicants for such certificates must consult, among others, any representative bodies of rail users, which are defined in the regulations as London TravelWatch and/or Passenger Focus, as appropriate.

4.3 The assumption mentioned in paragraph 3.1 has found specific expression from time to time in official or quasi-official documents. For example, the report of the inquiry into the Kings Cross Underground station fire ("the Fennell report") recommended in 1988 that passengers should be represented on the Health & Safety Commission (HSC) (now the ORR)'s advisory committee for the railways. The similar report arising from the Southall collision ("the Uff report") recommended in 1999 that consideration should be given to enlarging the role of the representative body and providing appropriate funding for its full participation in such inquiries. Such recommendations - and the requirements of the ROGS regulations - clearly reflect not only a belief in other quarters that London TravelWatch and Passenger Focus have the capability to act as credible exponents of passengers' interests in relation to safety but also that they are the appropriate source to which official bodies should turn for this purpose.

4.4 A number of attitudinal research studies have shown that safety is very high amongst rail passengers' priorities, when they are asked to rank the relative importance of various service attributes (confirming the assumption asserted in paragraph 3.1). But it is usually ranked very much lower when they are asked to identify the areas in which they are keenest to see performance improved. This indicates that, whatever its other shortcomings, the industry is – rightly – recognised as having a generally good safety record, at least in comparison with private transport modes. Non-users tend to have a lower perception of rail safety than frequent travellers, particularly in relation to personal security, perhaps because their views are derived more from media reports and less from personal experience.

4.5 The chart below shows the current relative fatality risk (per passenger kilometre) for travellers by the various land transport modes in Britain, expressed as a multiple of that for rail. In general, the rate for car travel is about one order of magnitude (>10x) higher than for public transport, that for the self-propelled modes is about two orders (>100x) higher, and that for motorcycles is three orders (>1000x) higher. The rate for

the Underground, not shown on this chart, is similar to or better than that for mainline rail.



4.6 Data on the passenger risk profiles of the main rail-based systems in London is shown graphically in Annex B to this report.

4.7 Although safety issues normally consume only a relatively small share of London TravelWatch's time and resources, it has to be prepared to deal with them effectively when they do arise. This means that it has to have access to specialist advice, either from within the organisation or elsewhere, and to provide suitable external representation when invited (and able) to do so. In determining the level and form of its involvement with safety matters, it is necessary to have regard not only to (a) the resource implications in terms of member and officer time, and (b) pressures on its funding, but also to (c) the utility of engagement with specific safety policy topics from a passenger perspective and (d) the possible reputational damage which the organisation might suffer from any precipitate or indiscriminate withdrawal from this area of work.

4.8 In concrete terms, London TravelWatch's involvement with rail safety policy-making and research includes the following activities:

4.9 Consultation

4.10 London TravelWatch is invited by the Department for Transport, ORR, RSSB, BTP and (from time to time) other bodies such as the Law Commission and the Sentencing Guidelines Council to comment on consultation exercises regarding (e.g.) draft legislation, regulations and safety standards (and proposed derogations from these), safety plans and strategies, white/green papers, performance targets, licence applications, etc. In the 5-year period ending on 18.4.11, a total of 421 such

requests was received, i.e. a rate of 1.8 per working week. Of these, substantive replies were sent to 191 (i.e. 44%).

4.11 Casework

4.12 A proportion of the appeals cases brought to London TravelWatch by members of the travelling public raise concerns about safety standards and performance. As the organisation's casework team has no specialist knowledge in this area, these (and the operators' responses) are routinely referred to the safety policy adviser for scrutiny and for further investigation when required.

4.13 ORR and RAIB liaison

4.14 There is a standing policy within ORR by which its regional field teams of inspectors have been required to meet London TravelWatch and/or Passenger Focus officers from time to time to review issues of common local concern. Similar discussions are held with senior representatives of RAIB.

4.15 Conferences, seminars, scrutinies, briefings

4.16 The safety policy adviser is invited from time to time to give presentations at (and/or submit evidence to) conferences, seminars, and Parliamentary and London Assembly inquiries/scrutinies. He also prepares safety topic briefings for members and the Chief Executive as required.

4.17 Accident inquiries

4.18 London TravelWatch (and its predecessors) has been a "recognised party" which has played a full part in the public inquiries or inquests which have been held into a number of multi-fatality rail accidents – the Kings Cross Underground station fire, Clapham Junction, Cannon Street, Southall, Ladbroke Grove and Potters Bar. At the invitation of the relevant industry bodies, it has also provided observers at the internal inquiries into the Hatfield and Chancery Lane accidents. More recently, the establishment of RAIB has largely supplanted such inquiries, and a protocol is in place under which London TravelWatch and/or Passenger Focus is consulted at the draft stage on reports arising from investigations into incidents which actually or potentially gave rise to significant risk to passengers.

4.19 Strategic advisory bodies

4.20 London TravelWatch is represented on three high-level industry advisory bodies which bring together representatives of relevant train and infrastructure operators, regulators, trade unions, manufacturers, government departments, academics and consultants to provide specialist support and guidance to their respective sponsoring organisations. These are:

ORR Rail Industry Health & Safety Advisory Committee (RIHSAC)

Originally sponsored by the HSC but now maintained by ORR, this is one of a family of such industry-specific bodies. It is unusual in including an element of consumer representation, reflecting the fact that – unlike most manufacturing

and many service industries – the safety performance of the railways can impact directly on members of the public at large. Its agenda covers the entire range of the safety regulator's responsibilities, other than prosecutions.

PACTS Rail Safety Working Party (RSWP)

This brings together the various rail industry bodies which are in membership of PACTS, to provide specialist input into this facet of the organisation's work.

DfT Transec Rail Advisory Panel

Transec is the Transport Security & Contingencies Directorate of the Department for Transport. A number of its current work streams relate to rail transport, including the experimental use of scanning equipment at termini, the "hardening" of rail stations against attack, and the security implications of EU policies aimed at widening the extent of international passenger rail services. London TravelWatch is represented on a panel of advisers convened periodically to review progress with this work.

4.21 Research stakeholder groups

4.22 RSSB sponsors an extensive research programme (largely funded by DfT) covering both technical, operational and managerial aspects of safety. All of the output is in the public domain, and can be reached via the RSSB website (see paragraph 2.3.2 above). Each research project has a small bespoke stakeholder group, which is convened to agree the project specification, select the chosen contractor, receive and comment on progress reports, and approve the final report. These groups have a finite life, and exist only for the duration of their respective projects. London TravelWatch has provided a member for those groups which are concerned with topics that it has put forward itself and which have passed the selection process, or with any others that are concerned with issues of immediate relevance to passengers. Such projects have been concerned with (e.g.) barrow crossings, crowding, wayfinding at stations, emergency evacuation from trains, and the interior crashworthiness of rolling stock.

4.23 Industry topic groups

4.24 These bring together representatives of a range of interested parties from within the industry and (where relevant) from elsewhere to monitor performance in relation to a specific safety topic, disseminate good practice, initiate experiments and apply research findings, and oversee the activities of local groups which are addressing the relevant issue in particular parts of the network. Most have a finite life, and are wound up when their primary purpose has been served. Not all lend themselves to London TravelWatch input, and the organisation has therefore eschewed involvement with groups addressing (e.g.) suicides, signals passed at danger, wheel/rail adhesion, bridge strikes or the safety of track workers. But groups on which it is or has been represented have covered such topics as (e.g.) personal security, level crossings, route crime (i.e. trespass and vandalism), "human factors" such as crowd behaviour and disability, safety elements of train design, and the rail industry's community safety strategy.

5 Working with Passenger Focus

5.1 The rationale for London TravelWatch's involvement with rail safety issues set out in paragraphs 3.1 to 3.5 applies equally to Passenger Focus, the terms of reference of the two organisations being – for all practical purposes – identical. They have separate geographical remits, but (unlike some other aspects of their work) these do not impact on the application of rail safety principles and practice. It would therefore make little sense, and be a poor use of public resources, for their work in this sphere to be duplicated. By long tradition, therefore, they have acted together wherever appropriate. And since 2002 there has been a formal agreement in place between them under which they share the services of a part-time (one day per week equivalent) safety policy adviser, the costs of this post being borne jointly by the two organisations.

5.2 In relation to all National Rail matters, the safety policy adviser represents both organisations, and responds to consultations on their joint behalf. London TravelWatch has exclusive functions in relation to the other rail systems in London (i.e. the Underground, DLR and Tramlink), and in dealing with these, he acts in its name alone. Conversely, in relation to the Tyne & Wear Metro and to the tram systems in Blackpool, Greater Manchester. Nottingham, Sheffield and the West Midlands he acts on behalf of Passenger Focus. He submits a monthly report on his work to the Chief Executives of the two organisations.

6 Incident reports

6.1 The safety policy adviser receives copies of all of the reports published by RAIB on the accidents and serious incidents it investigates, and is entitled to comment on these at the draft stage if they have given rise to injuries to passengers. In addition, he receives copies of the reports of all formal inquiries convened internally by London Underground into serious safety-related incidents occurring on its system when these affect (or have the potential to affect) passenger safety, and if there are any issues of continuing concern, he raises these with the senior manager concerned. Summaries of such reports are presented for London TravelWatch board members' information in the case of particularly serious incidents taking place on railways within its remit – though happily the occasion for this has not arisen in the past five years (except in the case of the inquest into the Potters Bar derailment, which was not held until 2010, eight years after the accident concerned).

6.2 The table appended to this report as Annex A summarises all of the incidents which have been the subject of RAIB investigations (if they occurred in the London TravelWatch area) or London Underground formal reports since 1.1.08. It is noteworthy that there has been only one fatality, and very few injuries, in any of the incidents listed., during a time in which more than 8 billion passenger journeys have been made on the rail systems concerned.

7 Financial and equalities implications

7.1 This report has no specific implications of this nature.

8 Legal duties

8.1 Section 248 of the Greater London Authority Act 1999 places upon London TravelWatch (as the London Transport Users Committee) a duty to consider - and where it appears to the Committee to be desirable, to make recommendations with respect to - any matter affecting the functions of the Greater London Authority or Transport for London which relate to transport (other than of freight). Section 252A of the same Act (as amended by Schedule 6 of the Railways Act 2005) places a similar duty upon the Committee to keep under review matters affecting the interests of the public in relation to railway passenger and station services provided wholly or partly within the London railway area, and to make representations about them to such persons as it thinks appropriate.

Glossary

BTP	British Transport Police
DfT	Department for Transport
DLR	Docklands Light Railway
EU	European Union
FWI	Combined fatalities and weighted injuries statistic
HMRI	Her Majesty's Railway Inspectorate
HSC	Health & Safety Commission
HSE	Health & Safety Executive
ORR	Office of Rail Regulation
PACTS	Parliamentary Advisory Council for Transport Safety
RAIB	Rail Accident Investigation Branch
RIAC	Rail Industry Advisory Committee
ROGS	Railways & Other Guided Transport Systems (Safety) Regulations 2006
RSSB	(formerly) Rail Safety & Standards Board
RSWP	Rail Safety Working Party
SPAD	Signal passed at danger
Transec	Transport Security & Contingencies Directorate

ANNEX A

SUMMARY OF RAIB INVESTIGATION REPORTS INTO INCIDENTS OCCURRING IN THE LONDON RAILWAY AREA, AND OF LONDON UNDERGROUND FORMAL INQUIRY REPORTS, SINCE 1.1.08 WHERE THESE AFFECT PASSENGER SAFETY ISSUES

Date	Location	Line/operator	Nature of incident	Subject of recommendations
25.01.08	Paddington	Bakerloo line	Unauthorised reversal caused train to pass signal at danger	- siting and marking of stopping points at station - design of train stop equipment - CCTV and radio system - survey of other similar locations
03.04.08	Neasden control centre	Jubilee line	Power failure caused 9 trains to be stalled in tunnel with long delays in detraining passengers	- detrainment procedures - emergency planning - battery system design and maintenance - electrical supply to safety critical systems - power supply resilience
04.04.08	Deptford Bridge	Docklands Light Railway	First train struck drilling rig left on track and partially derailed	- safety critical communications - responsibility of site supervisors for checking that track is clear - use of “sweep trains” following engineering work
28.05.08	Liverpool Street	NX East Anglia	More than 1000 passengers detrained to track after train collided with debris which had fallen from newly constructed overbridge	- safety management procedures for construction work on or over operational railway - information for operational staff about construction projects - emergency plans for post-incident recovery work - safe use of polytetrafluoroethylene surfaces in bridge bearings
24.06.08	Acton West junction	First Great Western	Passengers evacuated after train suffered damage in collision with rail grinding machines on track	- safe planning and management of engineering work on tracks - layout signage at access points - balance of work between safety-critical staff
27.07.08	New Southgate	NX East Coast	Luggage van door became detached and struck passing train causing minor injury to one passenger	- design and maintenance of luggage van doors - rules governing entry into service of trains with known defects

Date	Location	Line/operator	Nature of incident	Subject of recommendations
10.03.09	North Quay junction	Docklands Light Railway	Train traversed points set for movement in opposite direction and partially derailed	- location and conspicuity of point direction indicators - change control procedures for design and operation of railway - alarm management system in control centre
27.03.09	Hanger Lane junction	District and Piccadilly lines	Train passing signal at danger (SPAD) caused risk of collision	- identification of sites with similar signalling layout - guidelines for signallers' action following SPADs - safety critical communications - reporting of signals passed at danger - use of simulators in competence assessments - guidance to managers on medical working time restrictions
23.09.09	St Pancras International	Eurostar	Overhead electrification wire failed and fell onto platform, narrowly missing passengers exiting from train	- maintenance of electrical supply components - management of safety related equipment - risk from broken overhead wires generally - controllers' awareness of safety procedures
11.10.09	Windsor & Eton Riverside	SW Trains	Charter train partially derailed on approach to buffer stops, owing to track spread caused by decaying sleepers	- competency of track inspection staff - gauge measurement checks - follow up of previous audit findings
14.11.09	Feltham	SW Trains	Scour created void in abutment of bridge over River Crane, resulting in its partial collapse and necessitating total reconstruction	- checking of bridges generally - reporting by third parties of obstructions to river flow - role of bridge examiners
17.11.09	Mile End	Central line	Three passengers struck by loose inter-car barrier	- replacement of barrier cords - procedure for reforming (assembling) trains - training of train maintenance staff - communication protocols
19.01.10	Aldgate	Circle line	Train collided with scaffolding beam erected above track which infringed clearance gauge	- design of safety hoardings at worksites - site management procedures - clearance and gauging process and documentation

Date	Location	Line/operator	Nature of incident	Subject of recommendations
04.02.10	Romford	NX East Anglia	Two passengers on platform suffered minor injuries from stones which fell from ballast wagons passing station at speed	- modifications to wagons - checking closure of wagon doors - staff training and competency
08.02.10	Arnos Grove	Piccadilly line	Train operated in passenger service with known door defect	- communication protocols - air filters on solenoid valves
17.02.10	Liverpool Street to Stratford	Central line	Prolonged delays in releasing passengers when signal failure caused 14 trains to be stalled in tunnels	- identification of stalled trains by controllers - competency of control room staff - emergency plans - use of train radio system
02.07.10	Barking	District line	Trackside fire destroyed signal cables resulting in 22 stalled trains and several detrainments to track	- inspecting, maintaining and policing rackside land on Network Rail routes carrying LUL tracks - crime reduction survey and fencing review to discourage unauthorised access to site of fire
13.08.10	Highgate	Northern line	An empty passenger train was being used to tow a stalled rail grinding unit (RGU) when the coupler between them broke allowing the latter to roll unbraked under gravity as far as Warren Street	- requirements for RGU approval for use - risk assessment of RGU operation - strategy for use of specialist engineering vehicles on the Underground
08.09.10	Plaistow	District line	Signal irregularity allowed train to be routed onto track in wrong direction	- procedures for introducing materials used in projects and maintenance activities - signalling design and installation process - managing programme delays effectively
18.10.10	St John's Wood	Jubilee line	Contact between train and tunnel telephone wire resulted in traction current discharge and delayed release of passengers from 5 stalled trains	- incident management procedures and associated training requirements - maintenance and inspection of tunnel telephone wires - training of line control team in identification of rolling stock failures - investigation of failure mode of certain components on Jubilee line rolling stock

Date	Location	Line/operator	Nature of incident	Subject of recommendations
05.11.10	Oxshott	SW Trains	One serious and several minor injuries caused to passengers when cement tanker lorry fell through parapet of overbridge onto train passing below	- guidance for highway authorities on marking bridges and identifying safety hazards - safety inspections of road-over-rail bridges
28.01.11	Brentwood	NX East Anglia	Alighting passenger fell between train and platform	- driver training and assessment - CCTV on trains - assessment of safety equipment on unstaffed platforms observation of doors by staff involved in train dispatch
29.01.11	Clapham North	Northern line	Visually impaired passenger suffered minor injuries after alighting from train, crossing island platform and falling onto opposite track	- fitting of tactile paving strips to platform edges - review of procedures for staff assigned to escort visually impaired passengers - liaison with RNIB and other organisations re stations with unusual features which may present hazards
24.03.11	Charing Cross	Bakerloo line	Service suspended because of flooding caused by incident which emptied Trafalgar Square fountains	- reviewing Formal Incident Management procedures - liaison with emergency services - briefing of Emergency Response Unit personnel
26.05.11	Kentish Town	First Capital Connect	Train moved with some doors open after being stranded without ventilation for a prolonged period as a result of overhead line problems, during which some passengers opened doors and alighted onto trackside	- protocols for handling of stranded trains - staff training - management processes for emergency preparedness - tracking lessons identified in incident reviews - maintaining facilities on board when power supply is lost
25.06.11	Chalfont & Latimer	Metropolitan line	Passenger fell onto track from moving train via inter-car doors	- reviewing cost-benefit analysis of fitting inner inter-car barriers - reviewing effectiveness of signage on inter-car doors

Date	Location	Line/operator	Nature of incident	Subject of recommendations
11.07.11	Warren Street	Victoria line	Train departed with platform-side doors still open, and was stopped part-way into tunnel	- reviewing drivers' instructions on activations of sensitive edges on doors - reviewing engineering change management process - reviewing driver competence management system - reviewing circumstances in which drivers should request help in resolving defects
19.07.11	North Wembley	Virgin Trains	Defect in door control mechanism caused it to open while train was travelling at speed	- revision of procedures for setting up door catches, locking doors out of use and checking defective doors - revision of instructions governing circumstances in which doors must be taken out of use
10.10.11	King's Cross	First Capital Connect	Doors closed on fingers of passenger on platform, who was dragged a short distance as train departed	- instructions and guidance for train despatch staff - poster campaign to alert passengers to danger of attempting to board when doors are closing - reminding drivers to stop train immediately if emergency alarm is activated while it is still in station
07.01.12	Edgware	Northern line	Suspended ceiling in ticket hall collapsed	- preventative maintenance programme for station roofs and ceilings - design and installation of suspended ceilings at Egware and other stations - preservation of evidence for incident investigators
06.02.12	Warwick Avenue	Bakerloo line	Train ran with some doors open after defect caused it to be taken out of service	- revising rules for train operators and station staff regarding despatch of empty trains - clarifying roles of staff in line control centre - reviewing control room telephone and radio systems

Date	Location	Line/operator	Nature of incident	Subject of recommendations
09.02.12	Dollis Hill	Jubilee line	Service disrupted by train failed in snow	- revising adverse weather plans - revising rules regarding testing for alcohol and drugs after potentially dangerous occurrences - improving liaison between line control rooms during operational incidents - revising instructions regarding battery isolation - providing line gradient information for managers
17.02.12	East Croydon	London Tramlink	Tram derailed on points approaching tramstop	- reviewing signalling controls at points - improving track inspection and cleaning regime - checking track circuit settings and electrical resistances in wheel tyres
26.04.12	Embankment / Waterloo	Bakerloo line	Trains damaged by contact with distorted secondary tunnel lining	- reviewing engineering standards for grouting - adding guidance on assurance regime for trial works - improving records of maintenance works - reviewing engineers' competency in risk assessment
16.05.12	Sandilands	London Tramlink	Pedestrian on crossing struck by and dragged under tram	- improving crossing risk assessment - removing obstructions to sightlines at crossings - revising ORR guidance on crossing design - conducting investigations into crossing safety incidents - reviewing arrangements for safety decision making
23.05.12	Baker Street / St John's Wood	Jubilee line	Passengers evacuated after long delay, when initial efforts to move stalled train failed	- updating software to advise train operators of faults in on-board systems - reviewing effectiveness of methods for rescuing passengers from stalled trains - confirming methods of identifying location of stalled trains - instructing maintenance staff on how to connect radio handsets to emergency channel

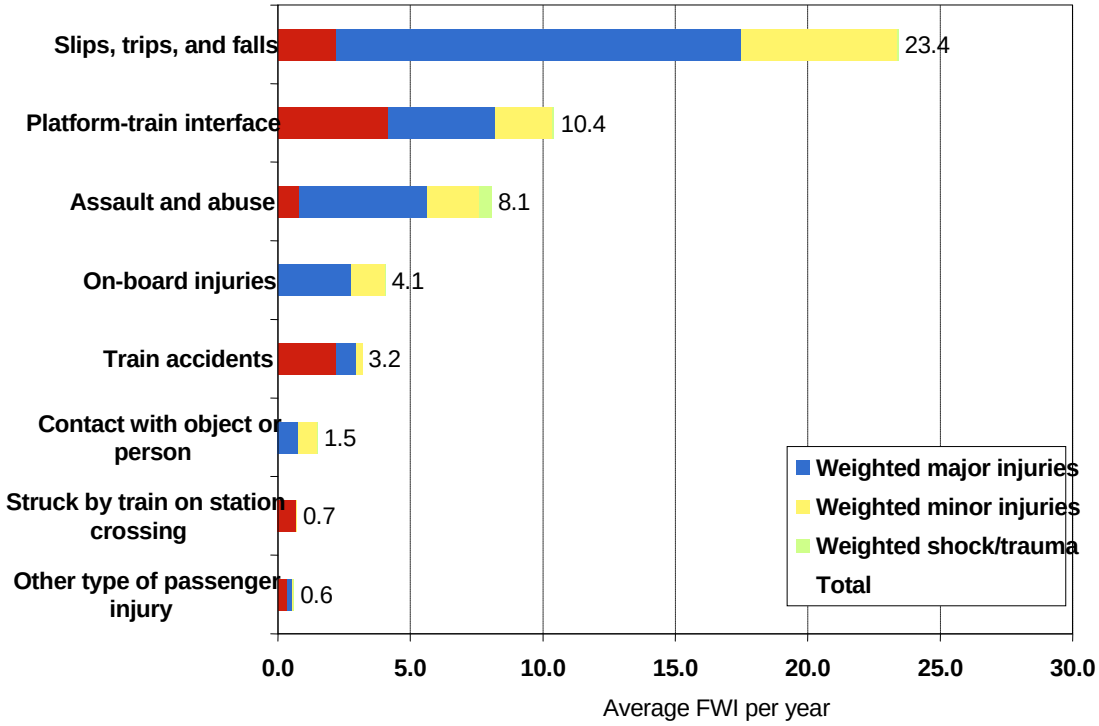
Date	Location	Line/operator	Nature of incident	Subject of recommendations
08.10.12	Queen's Park	Bakerloo line	Passenger overcarried into sidings on terminating train and escaped by climbing inter-car barrier	- publicising the risk of being overcarried to passengers - investigating measures further to prevent or mitigate the risk of overcarrying - investigating possible modification of inter-car barriers
31.10.12	Holland Park	Central line	Train stalled after striking shoe beam and trip cock unit from battery loco on track	- planning arrangements for use of battery locos in possessions - managing repairs to in-service defects on engineers' trains - reporting incidents involving engineers' trains to control - improving communications links to engineering staff
24.11.12	Charing Cross	Southeastern	Passenger injured by falling between train and platform	(report awaited)
14.12.12	Finchley Road	Metropolitan line	Passenger killed by falling between train and platform	(report awaited)
08.01.13	Old Street	First Capital Connect	Tunnel roof penetrated by drill bits from construction site above	(report awaited)
23.01.13	Liverpool Street	Greater Anglia	Train partially derailed and rerailed on leaving station	(report awaited)
13.04.13	Croydon	London Tramlink	Tram ran in passenger service with all doors open	(report awaited)

Passenger risk profile

(a) National Rail

Available data cover the whole of the National Rail network, and it is not possible to isolate those for the London railway area.

Risk is measured by the annual FWI total. This is a composite statistic, combining fatalities and weighted injuries. Ten major injuries are deemed to equate to one fatality, while in the case of minor injuries and shock/trauma events, the weighting is either 1:200 or 1:1000 depending on the severity of the event. The totals for fatalities and major injuries can be assumed to be complete, but there may be some under-reporting of minor injuries.

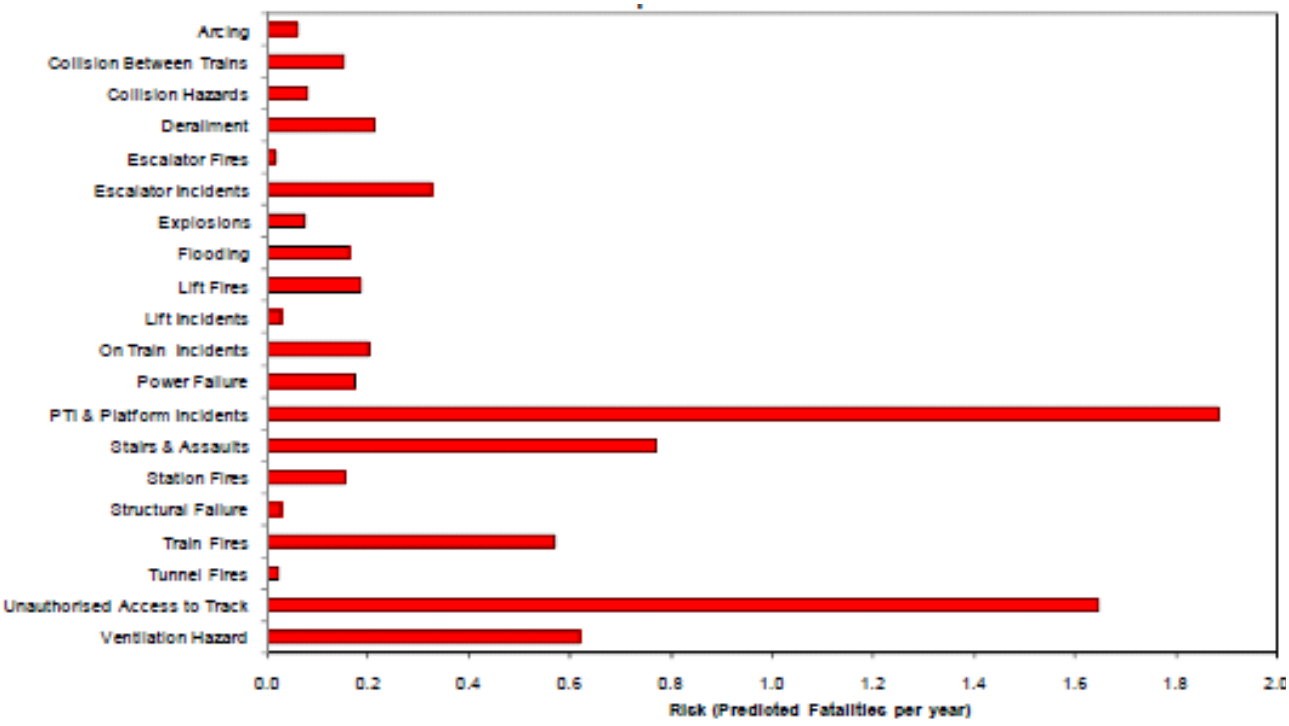


It will be seen that the annual FWI total is now 52, of which nearly half is contributed by slips, trips and falls at stations (other than at the platform edge). Platform edge incidents contribute about one-fifth, and assaults/abuse about one sixth. Only 14% arises from incidents on trains, and most of this occurs on board (e.g. tripping over luggage or being trapped in train doors) rather than from accidents to trains themselves. "Classic" railway accidents such as collisions or derailments at speed are now extremely rare.

But if fatalities alone are considered (i.e. the red section of each bar on the chart), a different hierarchy of risk emerges. Most fatalities occur at the platform edge, at a rate of about four per year, followed by slips/trips/falls (mainly on stairs and escalators) and train accidents (about two per year each). It should be noted that the risk profile is derived from data aggregated over several years, to smooth the impact of high-casualty events which occur infrequently, and that at the time of compiling this report no passenger has been fatally injured in a train accident for more than six years.

(b) London Underground

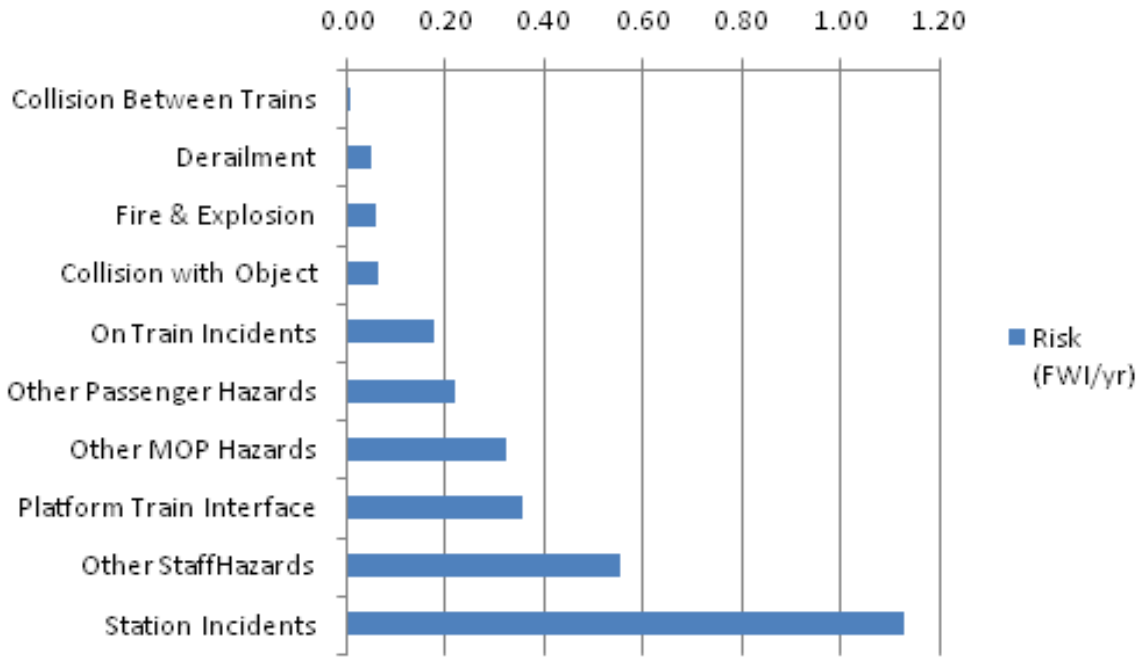
London Underground does not use the FWI statistic, so although it records and publishes details of non-fatal casualty rates, its risk profile chart is based on fatalities alone.



As on the National Rail network, the greatest risk to passengers arises at the PTI (i.e. the platform/train interface), followed by unauthorised access to the track, both accounting for somewhat less than two fatalities a year. No other category of event gives rise to a risk of even a single fatality per year. These totals should be seen in the context of an annual total of more than 1.1 billion passenger journeys (or, allowing for changes en route, about 3 billion boarding or alighting actions).

(c) Docklands Light Railway

Like that of the Underground, the DLR's published risk profile is based on fatalities alone, but in the case of this operator it includes risk to staff and to members of the public (MOPs).



It will be seen that, as is the case with National Rail and the Underground, most risk is associated with stations, not with trains.