



LONDON FIRE BRIGADE

Consultation Response

Date 16 October 2018

Title of consultation: Consultation on the revision of the Technical Specification for Interoperability on Safety in Railway Tunnels (TSI SRT)

Organisation: European Union Agency for Railways

Introduction

London Fire Brigade (LFB) is the fire and rescue service for London, United Kingdom. LFB is one of the largest firefighting and rescue organisations in the world and we are here to make London a safer city. Decisions are made either by the London Fire Commissioner (the statutory fire and rescue authority for Greater London), the Mayor of London or the Deputy Mayor for Fire and Resilience. A Fire, Resilience and Emergency Planning Committee of the London Assembly holds the Commissioner, Mayor and Deputy Mayor to account.

Executive summary

LFB is the enforcing authority for fire safety legislation applying to railway infrastructure in Greater London. This includes railway tunnel infrastructure where The Railways (Interoperability) Regulations 2011—which implement EC Directive 2008/57/EC in the United Kingdom—and the Technical Specifications for Interoperability for Safety in Railway Tunnels (TSI SRT), apply. This infrastructure currently includes the Channel Tunnel Rail Link and new infrastructure currently under construction where the TSI SRT will apply includes Crossrail and High Speed 2. LFB is normally consulted by Statutory Undertakers and other railway infrastructure stakeholders in relation to safe management of existing transport infrastructure, modification of existing infrastructure and the proposed design of new infrastructure.

LFB has three independent teams that undertake work in relation to existing and proposed new transport infrastructure, both in London and nationally. In our Operations directorate, Fire Safety (Regulatory and Community) department, this involves two specialist fire safety teams: the Transport Fire Safety team and Fire Engineering Group. In our Operational Resilience and Special Operations directorate this involves the Transport and Infrastructure Liaison team. These three teams work closely together, as well as liaising with other directorates and departments in London Fire Brigade and with our staff at fire stations. Regular liaison is undertaken with Statutory Undertakers and transport operators, including Transport for London, Network Rail and Heathrow Airport Limited.

Observations on the draft for public consultation

1. These observations relate to the document 'Proposal for a revised technical specification for interoperability relating to safety in railway tunnels of the Union rail system', (European Union Agency for Railways, draft for public consultation, Version 1.0, 16/08/2018).

2. Clauses 2.21 and 2.2.2, general observation: we have a general concern regarding the distinction between 'hot' and 'cold' incidents. Whilst we note that the emergency response procedures for fires and explosions and emission of toxic smoke or gases will differ from those applied in response to incidents such as collision and derailment, it is our opinion that this distinction is not useful for the purpose of this document. Elements of the text in these clauses, as well as in clause 2.3(c) do not reflect the way that incidents are approached by emergency responders. We have made specific observations below.
3. Clause 2.2.1(a): The definition of fire given in this clause ("Fire is understood as a combination of heat, flames and smoke.") is imprecise and the following alternative is suggested:

"Fire can be understood as a chemical reaction that typically involves the production of heat, visible flame, soot and toxic or irrespirable products of combustion (smoke) which, in the context of railway infrastructure and especially when enclosed within a tunnel environment, will constitute a hazard to life, property and the environment."

4. Clause 2.2.1(b): "Ventilation is shut down to prevent smoke distribution".

We note that smoke control systems/smoke ventilation, whilst not forming a requirement for compliance with the TSI SRT, may be present and therefore we suggest the following amendment to the above sentence:

"Normal/environmental ventilation is shut down to prevent unwanted smoke distribution."

5. Clause 2.2.1(b): "If a fire extinguishing system can extinguish the fire, the incident will become a 'cold' incident".

The statement in 2.2.2 (b) that a 'cold' incident differs when "compared to the hot incidents" in "that there is no time constraint due to the presence of a hostile environment created by a fire" is misleading, as toxic or irrespirable products of combustion are likely to still be present even if a fire extinguishing system is able to extinguish the fire; this imposes a time constraint as could other factors. Emergency response services will normally continue to treat a fire incident as a 'hot' incident until they can ascertain that fire, products of combustion and/or other factors no longer pose a hazard to life.

6. Clause 2.2.2(b): We consider that collision, derailment and other incidents not involving fire will also impose a time constraint. This may be due to the nature of any injuries sustained by persons involved in the incident, which may be of a critical nature and require medical treatment at the earliest possible time, or this may be due to the present of a hostile environment resulting from factors other than fire, such as levels of heat in the passenger compartment of the rolling stock or the tunnel, pre-existing medical needs of persons on the train or non-availability of lighting, heating/cooling or welfare facilities.
7. Clause 2.2.3(a): "Prolonged stop (an unplanned stop in a tunnel, without the occurrence of a hot or cold incident, for longer than 10 minutes) is not by itself a threat to passengers and staff."

It is not our opinion that the 10 minute threshold serves a useful purpose for this document. Furthermore, and following from our observations on Clause 2.2.2(b) above, in

our experience a prolonged stop event, either in a tunnel or open route environment, can pose a threat to passengers and staff in addition to the possibility of spontaneous, uncontrolled evacuation onto railway infrastructure. Other threats can include medical conditions of passengers/staff that require treatment, elevated temperature levels in the passenger compartment or failure of on-board lighting and other facilities. It is important that Railway Undertakings have suitable procedures in place for such events and that the full range of potential threats and emergency conditions are understood.

At minimum, we would suggest modifying this clause to reflect the above, for example using the following alternative text:

2.2.3 Prolonged stop

- (a) Prolonged stop events (an unplanned stop in a tunnel, not resulting from a fire, explosion, collision or derailment) may not pose an immediate threat to passengers or staff.
- (b) However, a prolonged stop may result in conditions that can rapidly result in a threat to passengers or staff and require emergency intervention by the emergency response services and/or Railway Undertaking(s). Such threats may include, but are not limited to:
 - Elevated temperature levels in the passenger compartment.
 - Threats resulting from failure or absence of on-board facilities such as lighting, heating/cooling or welfare facilities.
 - Medical conditions of passengers or staff (pre-existing or developing as a result of the incident) that require urgent treatment.

8. Clause 2.3(c): We note that the definitions of 'hot' and 'cold' incidents given in this clause contradict those given in 2.2.1 and 2.2.2. For example, in 2.3(c)(2) it is stated that "In a 'cold' incident type" emergency response services are expected to "Provide initial help to people with critical injuries". However, the implication of the distinction between a 'hot' and 'cold' incident given in 2.2.1 and 2.2.2 is that there is less time constraint imposed by a 'cold' than a 'hot' incident. The expectation of providing assistance to people with critical injuries imposes a clear time constraint which may be no less demanding than where fire and smoke are present.
9. Clause 2.4(c): "Final place of safety: the final place of safety is the place where passengers and staff will no longer be impacted by the effects of the **initial** incident...".

We suggest the removal of the word "initial" from this clause. We are concerned that this could be interpreted as implying that a final place of safety is not necessarily required to be protected from the effects of incidents that develop as a result of/in conjunction with, but subsequent to, the initial incident. This may result in confusion. The removal of the word does not detract from the meaning of the clause.

10. Clause 1.1.4(a) and 4.2.1.2(b): We request clarification on the purpose of removing collapse of neighbouring structures from the risk scope of this document. We appreciate that it is very difficult to quantify the risk of a tunnel collapse to the potentially large number of structures that may be in the vicinity of a railway tunnel, especially where the tunnel is located in a metropolitan area. However, there may be cases where a tunnel is located directly beneath or adjacent to other structures and the collapse of the tunnel could result in the collapse of these structures.

We note that the requirement to design structures such that, in the event of an accident, the building will not suffer collapse to an extent disproportionate to the cause or result in the collapse of other structures may be covered in other national legislation and in relevant Eurocodes, but if this is the case it is our opinion that this should be explicitly stated.

11. Clause 4.2.1.6(3): "The height of the walkway shall be at bottom-of-rail level or higher". We note that it is proposed that "top-of-rail-level" be changed to "bottom-of-rail" level. We are concerned that rails protruding above the level of the escape walkway could pose a trip hazard for both evacuating passengers and staff as well as emergency response personnel. We request that the reason for this amendment be explained and it is our preference that the original wording of the clause be retained.
12. Clause 4.4.2: We note that the requirement for Railway Undertakings intending to use the tunnel to be involved in the development or adaptation of the Emergency Plan has been removed. The proposed clause states that it is optional for Railway Undertakings to be involved with development or adaptation of the Emergency Plan and that the Emergency Plan must be communicated to them.

We hold the opinion that involvement of the relevant Railway Undertakings in the development or adaptation of an Emergency Plan is essential as the Railway Undertaking(s) must be able to verify that they are capable of implementing the Emergency Plan. There is a danger that, by not involving the Railway Undertaking(s) in the process of development or adaptation of Emergency Plans and simply communicating this to them, the Emergency Plan may not be viable.

13. Clause 7.2.2.1 and 7.2.2.2: We note that no reference is made to the requirement for fire-fighting water supplies in either the 'Renewal or upgrading of a tunnel' or 'Extension of a tunnel' clauses. It is our opinion that the provision of adequate fire-fighting water supplies, including tunnel fire mains, is essential to fire and rescue services being able to effectively respond to fire incidents in tunnels.