Fire Brigades Union submission

LFB: Health and Safety Advisory Panel: PN633 high rise firefighting

29 March 2021

Introduction

1. This is the Fire Brigades Union (FBU) submission to the London Fire Brigade (LFB) Health and Safety Advisory Panel (HSAP) on the proposed revisions to *High Rise Firefighting – Policy Number 633* (PN633). The union represents 97% of wholetime operational firefighters in the LFB, as well as a significant proportion of fire control staff.

2. On 14 June 2017, the LFB was called to the fire at Grenfell Tower. The incident resulted in the deaths of 72 people. The Westminster government appointed the Grenfell Tower Inquiry (GTI) to investigate the fire. The FBU is a core participant in the GTI and totally committed to achieving justice for the bereaved, survivors and residents. But justice will not be done by undermining the health and safety of firefighters.

3. LFB has responded to the fire and the GTI's Phase 1 report with a revised PN633. FBU officials have participated fully in LFB's review. The FBU's principal concern is the paragraphs in PN633 on emergency evacuation and mass rescue. These would allow incident commanders to deploy firefighters to work beyond the entry control point at the bridgehead without first starting up their breathing apparatus (BA) sets. This is a new and unprecedented procedure, which is fundamentally flawed. The FBU's believes:

    - PN633 is illegal because it necessarily breaches the London Fire Commissioner's obligations under the Health and Safety at Work Act, the Management of Health and Safety Regulations, Control of Substances Hazardous to Health Regulations, Personal Protective Equipment Regulations and other regulations
    - The proposed procedure creates too great a risk to the immediate and long term health of firefighters deployed in this way
    - LFB's proposed procedure would expose firefighters to toxic fire effluents, including hazardous gases and particles, which risk damaging their health and safety at these incidents and afterwards
    - The proposed procedure removes a safety critical, reasonably practicable risk control measure firefighters have used for decades to protect themselves in already hazardous situations
    - PN633 contradicts longstanding national operational guidance and best practice for breathing apparatus
    - The LFB has begun to implement the new policy, including the training of its firefighters, without agreement on the unsafe procedure. The last minute revisions to the PN633 show that the proposed policy is not fit for purpose.

4. The scope of the draft policy is not spelt out in the draft, but it is significant. Home Office figures indicate that there are more than 20,000 purpose built flats of four storeys (11 metres) or greater in London.[1] LFB recently reported to the HMICFRS that London has 6,300 high rise buildings (six storeys/18 metres or higher) in residential use.[2] Last year, the mayor said that 4,256 residential high rise buildings had a premises risk assessment.[3] PN633 and the proposed unsafe procedure will apply at thousands of premises where firefighters may have to intervene.

5. The FBU is committed to learning the lessons from the Grenfell Tower fire. However, LFB is attempting to introduce a BA procedure that is inherently unsafe for firefighters. LFB is seeking to address the crisis in building safety highlighted by the Grenfell Tower fire by downgrading the safety provisions for firefighters. This is unacceptable. Putting firefighters at increased risk of death and injury will not provide justice for the bereaved, survivors and residents of Grenfell Tower. It will not improve safety for people living in high rise buildings, now or in the future. Further endangering firefighters will ***increase*** the risks to those the public rely on.

6. The FBU believes that other measures are available to the LFB and to those responsible for high rise buildings which, if implemented, would immediately improve the safety of residents. The FBU is willing to work with the LFB to find solutions. But the union cannot agree to those aspects of the policy that may foreseeably lead to the death of, or injury to, firefighters.

PN633 – main paragraphs in dispute

7. The FBU has a range of concerns with LFB's revised High Rise Firefighting Policy PN633. In the last month and after the LFB requested convening the Health and Safety Advisory Panel, LFB has issued the following drafts:

LFC-0304x·D High Rise Firefighting Policy PN663	12 February 2020
PN633 High rise firefighting – 04.03.21 – Following physiological trials	4 March 2021
PN633 High rise firefighting – 04.03.21 – Following physiological trials	8 March 2021
PN633 High rise firefighting – Final HSAP Submission	16 March 2021
PN 633 High rise firefighting - Final HSAP Submission (3)	17 March 2021

[1] Home Office, Number of premises and other fire safety activities, FS2 return, FIRE1204, 31 March 2020 https://www.gov.uk/government/statistical-data-sets/fire-statistics-data-tables#fire-prevention-and-protection

[2] HMICFRS, London Fire Brigade Inspection of the London Fire Brigade's progress to implement the recommendations from the Grenfell Tower Inquiry's Phase 1 report, 12 February 2021: 22 https://www.justiceinspectorates.gov.uk/hmicfrs/publications/london-fire-brigades-progress-on-recommendations-grenfell-tower-phase-1/

[3] Mayor's Question Time (MQT), Operational risk database (ORD) review, answered 16 March 2020 https://www.london.gov.uk/questions/2020/1352

8. When the panel was called, the draft in dispute was marked as "LFC-0304x·D High Rise Firefighting Policy PN663", signed by the London Fire Commissioner on 12 February 2020. This version included an important summary with 41 numbered paragraphs, which has not been included in later draft.[4] The February 2020 draft was the version presented to the Greater London Assembly's Fire, Resilience and Emergency Planning (FREP) Committee on 5 March 2020, according to the minutes.[5]

9. LFB made numerous revisions to PN633 in March 2021. It claims they arose from the Professor Bilzon report, which LFB commissioned in October 2020. However the changes dealt with a wider range of matters unconnected with Bilzon's research. It is clear from the tracked version that some changes have been made as a result of the LFB's new *Evacuation and Rescue Policy*, issued in October 2020.[6] This is a highly unusual way to conduct discussion on such an important document and especially in light of the agreement to proceed to a Health and Safety Advisory Panel.

10. The most recent version, marked as "PN 633 High rise firefighting - Final HSAP Submission (3)" was given to the FBU on 17 March 2021. This is the version we understand LFB wishes to bring before the panel. The FBU will refer to this version unless otherwise stated.

11. The FBU acknowledges that LFB has accepted a number of changes suggested by the union's officials. Originally, three paragraphs in particular were highlighted as areas of disagreement. All centred on the sending firefighters beyond the entry control point without first starting up their BA sets. Now two of those paragraphs have been eliminated. However serious concerns remain.

12. Key paragraphs of Section 6 *Emergency evacuation and mass rescue* are unacceptable. The union is particularly concerned about the paragraphs in the revised policy on the use of breathing apparatus in the context of calling an emergency mass rescue. The FBU's concerns begin with a paragraph not found in the February 2020 draft was added in March 2021:

> *6.3 The decision to initiate an emergency evacuation and/or mass rescue requires the IC to **strike a proportionate balance** between the prevailing risks and benefits. This cannot be exhaustively predicted in advance for every situation. [our emphasis]*

13. However the pivotal disputed paragraph is towards the end of that section. It states:

[4] LFB, High Rise Firefighting – Policy Number 633, 12 February 2020
https://www.london-fire.gov.uk/media/5160/lfc-304x-d-high-rise-firefighting-policy-663.pdf
[5] Greater London Authority, Fire, Resilience and Emergency Planning Committee, 5 March 2020
https://www.london.gov.uk/about-us/londonassembly/meetings/documents/g6695/Public%20reports%20pack%20Thursday%2005-Mar-2020%2015.00%20Fire%20Resilience%20and%20Emergency%20Planning%20Committee.pdf?T=10
[6] LFB, Evacuation and Rescue Policy, 9 October 2020
https://www.london-fire.gov.uk/media/5381/lfc-0391-evacuation-and-rescue-policy.pdf

*6.30 There may be exceptional circumstances where it is advantageous for crews working or travelling beyond the bridgehead to conserve air by not starting up **until necessary.** This activity involves **an increased level of risk** and must be proportionate to the benefits such as saving saveable life. This is only for the purposes of carrying out an emergency evacuation and/or mass rescue where high rise buildings have failed to behave as they are designed. The following control measures for this activity must be in place:*

(a) Teams must be committed through entry control wearing BA not started up and not under air.

(b) Their tally must be inserted into the BA ECB and telemetry between the BA set and ECB established. This will display to the ECO the ECB clock time while the BA team are not under air. If the BA team go under air, the ECO will be alerted by the display changing from the ECB clock time to a time of whistle display. [our emphasis]

14. The FBU would draw the panel's attention to the revisions made to this paragraph. In the February 2020 version (5.28), it referred to sending firefighters beyond the bridgehead without starting up their BA sets as an "extremely high risk activity":

*5.28 In this case [of catastrophic failure of compartmentation], the IC may commit teams beyond the bridgehead wearing BA sets that have not been started up. This is an **extremely high risk activity** which must only be implemented when the benefits are proportionate… [our emphasis]*

15. By 4 March 2021, the draft had been re-worded and toned down to refer to "an increased level of risk". However, the removal of the words 'extremely high risk activity' does not alter the actual risk which was originally identified in the earlier draft.

16. The revised draft stated:

*6.29 There may be exceptional circumstances where it is advantageous for crews working or travelling beyond the bridgehead in **clean air** to conserve air by not starting up until necessary. This activity involves an **increased level of risk** and must be proportionate to the benefits such as saving saveable life. [our emphasis]*

17. On 16 March 2021, LFB deleted "in clear air" from paragraph 6.30 in the new draft.

18. The nub of the dispute concerns these issues. The FBU maintains that sending firefighters beyond the entry control point at the bridgehead without first starting up their BA sets is an "extremely high risk activity". The issue of "clear air" – or lack of it beyond the bridgehead – is central to the disagreement. Under LFB's proposed procedure, firefighters are expected to proceed from clear air at the bridgehead into an unknown situation with many hazards, including the risk of exposure to hazardous substances. With this proposed policy, they are not required to use a well-established, reasonably practicable control measure to reduce those known and foreseeable risks.

19. The FBU believes that paragraph 6.30 is unacceptable and should be removed. This would also remove or revise paragraphs 6.3 and 6.31 to 6.38. On the same grounds, additional safeguards are needed for paragraph 5.42, because it currently states that after a bridgehead has been set up, firefighters are allowed beyond it without starting up. It states:

*5.42 If pump operators report gauge readings that indicate that dry rising main outlets above the fire floor may be open, or there are other signs that this is the case, the IC may consider committing a team **above the bridgehead** without BA or extinguishing media for the specific task of closing DRM outlets.*

20. The remainder of this submission explains the FBU's arguments at greater length.

Health and Safety at Work Act

21. Paragraphs 6.3 and 6.30-6.38 increase foreseeable risks to the health, safety and welfare of firefighters, while removing the significant control measure previously used to reduce those risks.

22. The FBU believes this proposed procedure is not compliant with the Health and Safety at Work Act, the Management of Health and Safety Regulations, Control of Substances Hazardous to Health Regulations, Personal Protective Equipment Regulations and other regulations. The FBU believes the LFB is wrong in law.

23. In particular the FBU does not accept the interpretation of Sections 2 and 3 of the Health and Safety at Work Act 1974, contained in the LFB's 12 February 2020 version presented to the FREP (and also in its new Evacuation and Rescue Policy), and which underpins the disputed paragraphs. This paragraph is no accident – it also appears in the LFB's recent *Evacuation and Rescue Policy*.[7] It is what lies behind paragraph 6.3, particularly the expression that incident commanders should "strike a proportionate balance" between risks and benefits when calling an emergency evacuation and/or mass rescue. The LFB states:

24. In approving this policy the Commissioner should comply with:…
*The Health and Safety at Work etc. Act 1974. Section 2 of the 1974 Act imposes a general duty on the employer to 'ensure, so as is reasonably practicable, the health, safety and welfare at work of all of his employees.'… Section 3 of the 1974 Act imposes a general duty to 'ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety.' In the exceptional circumstances encompassed by this policy, the LFC recognises that **striking the correct balance between these two general duties** is likely to depend upon and require nuanced, informed, and robust decision making. Such decisions may require an assessment to be made as to whether, and if so to what extent, it is or is not reasonably practicable to expose firefighters to increased risk in order to ensure that all reasonably practicable steps are taken to protect members of the public from risk. Those decisions may have to be taken rapidly and under pressure. Such decisions may properly be subject to scrutiny in subsequent legal proceedings… [our emphasis]*

24. The FBU believes the LFB misinterprets the law. First, the obligation imposed by Section 2 is strict. The section begins by stating the general duties of employers to their employees:

[7] LFB, Evacuation and Rescue Policy, 9 October 2020, paragraph 39

2 General duties of employers to their employees.
(1) It shall be the duty of every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees.
(2) Without prejudice to the generality of an employer's duty under the preceding subsection, the matters to which that duty extends include in particular—
(a) the provision and maintenance of plant and systems of work that are, so far as is reasonably practicable, safe and without risks to health;
(b)arrangements for ensuring, so far as is reasonably practicable, safety and absence of risks to health in connection with the use, handling, storage and transport of articles and substances;
(c) the provision of such information, instruction, training and supervision as is necessary to ensure, so far as is reasonably practicable, the health and safety at work of his employees;
(d) so far as is reasonably practicable as regards any place of work under the employer's control, the maintenance of it in a condition that is safe and without risks to health and the provision and maintenance of means of access to and egress from it that are safe and without such risks;
(e) the provision and maintenance of a working environment for his employees that is, so far as is reasonably practicable, safe, without risks to health, and adequate as regards facilities and arrangements for their welfare at work.[8]

25. It is a duty to ensure an outcome "so far as is reasonably practicable". If the prescribed outcome is not achieved, it is for an employer to demonstrate that it was not reasonably practicable to have achieved it. Reasonable practicability is a matter of weighing the risk against the cost involved in the measures necessary to avert it. Exceptionality is not part of the test.

26. The risk against which paragraph 6.30 of PN633 should seek to protect employees of the LFB is the risk of exposure to harmful substances when beyond the bridgehead. Weighing the quantum of the risk against the cost and trouble of averting it, it is **already known to be reasonably practicable for the LFB to avert the risk**. This is known because the control measure it has adopted in order to avert the risk prior to the revision of PN633 is the use of effective BA. The proposed procedure in PN633 expressly removes the control measure and thereby decreases the level of safety to employees to a level that is less than could reasonably practicably be achieved.

27. Second, LFB's misinterpretation of "striking a balance" between its duties under Section 2 and Section 3 is used to diminish the safety of its employees. In effect, the proposed revision to PN633 contends that in order to satisfy its obligation under Section 3, the LFB is entitled to reduce the level of safety it was hitherto otherwise reasonably practicable to ensure that its employees had.

[8] Health and Safety at Work etc. Act 1974
https://www.legislation.gov.uk/ukpga/1974/37/contents

28. Section 3 of the Health and Safety at Work Act begins:

> ***3 General duties of employers and self-employed to persons other than their employees.***
> *(1) It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety.*[9]

29. LFB seem to believe that the satisfaction of one duty under the Health and Safety at Work Act is an effective defence to a breach of a parallel duty. Or to put it another way, LFB seem to believe that compliance with Section 3 can only be achieved by exposing employees to a risk which it had previously been reasonably practicable to avoid. The FBU does not accept that interpretation of health and safety law.

30. Section 3 is generally understood to impose a duty on the employer to avoid exposing non-employees to risks caused by the manner in which the employer is conducting their undertaking. For the fire and rescue service, this means, for instance, taking care to ensure that members of the public are not injured by activities such as firefighting ladders, water jets or other equipment. The LFB appears to have stretched the scope of Section 3 to include its duty to the public beyond the Health and Safety at Work Act.

31. The FBU is of course aware of the HSE statement, *Striking the balance between operational and health and safety duties in the Fire and Rescue Service*.[10] The FBU worked with HSE and other fire stakeholders during the production of the statement.

32. The "balance" referred to in this guidance is between the duties placed on fire and rescue authorities as employers under health and safety law and their duties to the public as set out in legislation, such as the Fire and Rescue Services Act 2004 and in the Regulatory Reform (Fire Safety Order) 2005.

33. The HSE statement highlights key challenges for fire and rescue authorities as employers, when striking the balance between these duties:

    - *they have to send firefighters into dangerous situations in order to save lives when anyone else would be seeking to get away from the danger;*
    - *there is often an unrealistic public expectation that firefighters will put themselves at risk even when such risks outweigh any potential benefits to be gained;*
    - *many incidents firefighters face can develop at speed, some can develop in unexpected ways – and firefighters may, from time to time, be confronted with situations outside their experience;*
    - *they have to prepare individual employees to be able to make decisions in dangerous, fast-moving, emotionally charged and pressurised situations, even when there may sometimes be incomplete or inaccurate information about the incident;*

[9] Health and Safety at Work etc. Act 1974
https://www.legislation.gov.uk/ukpga/1974/37/section/3

[10] HSE, Striking the balance between operational and health and safety duties in the Fire and Rescue Service, March 2010
https://www.hse.gov.uk/services/fire/duties.pdf

- *they have to respond to dangerous situations which are not of their own making – this is different to most other sectors where it is the employer's own business that creates the hazards; and*
- *they may not be able to control or mitigate some aspects of the working environment.*

34. This HSE guidance does not sanction the exposure of firefighters to increased risks while at the same time removing an existing, reasonably practicable control measure to control those risks. The "balance" to be struck is not between different sections of the Health and Safety at Work Act.

Management of Health and Safety at Work Regulations

35. The FBU also believes the LFB has misinterpreted the health and safety management process. The Management of Health and Safety at Work Regulations 1999 establish the process of risk assessment, the principles of prevention to be applied, health and safety arrangements, health surveillance and other vital matters. The Management Regulations, Approved Code of Practice and associated guidance establish a hierarchy of prevention and control measures. Schedule 1 of the regulations set out the general principles of prevention. These are:

> *(a) avoiding risks;*
> *(b) evaluating the risks which cannot be avoided;*
> *(c) combating the risks at source;*
> *(d) adapting the work to the individual…*
> *(e) adapting to technical progress;*
> *(f) replacing the dangerous by the non-dangerous or the less dangerous;*
> *(g) developing a coherent overall prevention policy which covers technology, organisation of work, working conditions, social relationships and the influence of factors relating to the working environment;*
> *(h) giving collective protective measures priority over individual protective measures; and*
> *(i) giving appropriate instructions to employees.*[11]

36. The FBU believes that LFB's risk assessment for PN633 is not "suitable and sufficient". LFB's risk assessment identifies the risk of oxygen deficit or toxic atmospheres (No.14) and identifies the control measure as "breathing apparatus and associated control measures". However it then under the alternative BA procedures (No.3) removes that control measure by authorising firefighters to go beyond the entry control point at the bridgehead without starting up their BA sets.[12]

37. Delaying the start up of breathing apparatus perversely downgrades a safety control measure in precisely a situation of increased risk. The LFB's risk assessment registers the increased risk, but removes the well-established and reasonably practicable control measure to control it.

[11] Management of Health and Safety at Work Regulations 1999
https://www.legislation.gov.uk/uksi/1999/3242/contents/made
[12] LFB, PN633 High Rise Firefighting RA - Final HSAP submission, 16 March 2021

38. In its risk assessment of 4 March 2021, LFB suggested that firefighters could go beyond the stairway and into lobbies and individual flats without going under air.[13] The risks of exposure are even greater, yet the LFB wanted to authorise activity that would expose firefighters to even greater risks of hazardous substances.

39. On 8 March 2021, FBU officials pointed out these risks and the LFB withdrew its proposal for lobbies and individual flats in the following drafts. This episode illustrates the slippage towards exposing firefighters to greater risks, once the LFB decided to allow firefighters to proceed beyond the bridgehead without starting up their BA sets.

40. Unfortunately, LFB continues to retain the disputed procedure for the stairway, despite the risk of oxygen deficit and toxic atmospheres.

Control of Substances Hazardous to Health Regulations

41. Similarly the FBU believes the LFB's new PN633 is in breach of the Control of Substances Hazardous to Health Regulations 2002. These regulations provide that:

> ***6.***—*(1) An employer shall not carry out work which is liable to expose any employees to any substance hazardous to health unless he has—*
> *(a) made a suitable and sufficient assessment of the risk created by that work to the health of those employees and of the steps that need to be taken to meet the requirements of these Regulations; and*
> *(b) implemented the steps referred to in sub-paragraph (a).*[14]

42. The regulations reiterate the hierarchy of measures by which the obligation to control exposure is to be achieved. It states:

> ***7.***—*(1) Every employer shall ensure that the exposure of his employees to substances hazardous to health is either prevented or, where this is not reasonably practicable, adequately controlled…*
> ***7.***—*(3) Where it is not reasonably practicable to prevent exposure to a substance hazardous to health, the employer shall comply with his duty of control under paragraph (1) by applying protection measures appropriate to the activity and consistent with the risk assessment, including, in order of priority—*
> *(a) the design and use of appropriate work processes, systems and engineering controls and the provision and use of suitable work equipment and materials;*
> *(b) the control of exposure at source, including adequate ventilation systems and appropriate organisational measures; and*
> *(c) where adequate control of exposure cannot be achieved by other means, the provision of suitable personal protective equipment in addition to the measures required by sub-paragraphs (a) and (b).*

[13] LFB, Grenfell PN633 High Rise Firefighting RA V7 040321, 4 March 2021
[14] Control of Substances Hazardous to Health Regulations 2002 https://www.legislation.gov.uk/uksi/2002/2677/contents

43. Regulation 7(3)(c) requires an employer, as a last resort, to provide employees with suitable personal protective equipment in order adequately to control their exposure to hazardous substances. It does not countenance the concept of reasonable practicability as a reason not to provide such equipment. Unless it is used, BA is not (and cannot be) suitable PPE.

44. Regulation 8 is also pertinent. It states:

> ***8.*** *– (1) Every employer who provides any control measure, other thing or facility in accordance with these Regulations shall take all reasonable steps to ensure that it is properly used or applied as the case may be.*
> ***8.*** *– (2) Every employee shall make full and proper use of any control measure, other thing or facility provided in accordance with these Regulations…*

45. The proper use of BA is for it to be operational. An employer who did not take reasonable steps to see that firefighters were operating BA when in an area in which they were likely to be exposed to a hazardous substance would be in breach of this obligation. An employer who instructed their employees not to operate BA in such areas would not only be committing a breach but instructing their employees to commit a breach. This is because full and proper use of BA is to turn it on before entering an area in which there is a foreseeable risk of exposure to a hazardous substance.

Other regulations

46. There are other health and safety regulations that may be breached by PN633, such as the Personal Protective Equipment at Work Regulations 1992, the Control of Asbestos Regulations 2012 and Confined Spaces Regulations 1997. HSE has also published important Approved Codes of Practice (ACOP) and guidance on these regulations. The FBU understands that these regulations apply in restricted circumstances. However breathing apparatus may be a control measure in these cases and therefore we believe they are relevant to the issues in dispute.

47. For example, the Personal Protective Equipment at Work Regulations state:

> ***4.****—(1) Every employer shall ensure that suitable personal protective equipment is provided to his employees who may be exposed to a risk to their health or safety while at work except where and to the extent that such risk has been adequately controlled by other means which are equally or more effective.*[15]

[15] The Personal Protective Equipment at Work Regulations 1992
https://www.legislation.gov.uk/uksi/1992/2966/contents/made

48. Regulation 4(3)(a) provides that equipment shall not be suitable unless it is appropriate for the risks involved, the conditions at the place where exposure to the risk may occur and the period for which it is worn. Regulation 4(3)(d) similarly states that equipment will not be suitable unless, so far as is practicable, it is effective to prevent or adequately control the risk involved without increasing overall risk. Regulation 10(1) provides that every employer shall take all reasonable steps to ensure that any personal protective equipment provided to his employees by virtue of Regulation 4(1) is properly used.

49. Breathing apparatus is a vital piece of personal protective equipment, part of a system of measures designed to reduce the risks to firefighters. The FBU believes that the disputed procedure is in breach of key health and safety regulations. The LFB is not justified proceeding in this way. Firefighters injured as a result of this proposed procedure will make claims for damages against the LFB for introducing unsafe systems of work, as will the survivors of firefighters who are killed in such circumstances.

HSE enforcement action

50. The LFB also appear to have ignored previous warnings from HSE concerning firefighter safety in high rise buildings, in particular, the HSE improvement notice issued to Strathclyde Fire Brigade after an incident in which firefighters were injured through engagement in firefighting activity on the fire floor.

51. On 17 November 2003, Strathclyde Fire Brigade were called to a fire on the 24th floor of 30 Petershill Court, which was in tower six of the Red Road Flats complex. The station officer (incident commander) entered the right hand lift with three firefighters, two rigged in breathing apparatus (BA) and a third carrying the BA entry control board and travelled to the 21st floor, which they understood to be three floors below the fire. The two BA wearers donned their masks while travelling in the lift. Two further BA wearers got into the other lift and donned their masks while travelling to the 21st floor.

52. When the first lift arrived on the 21st floor, which was actually the fire floor, CCTV footage shows the door opening and the picture blacking out as smoke fills the lift car. The station officer and firefighter who were not wearing BA were overcome by smoke. Attempts were made to close the lift door but this was unsuccessful. The second lift car arrived, this lift car also filled with smoke and the crew successfully closed the door and then withdrew to the 20th floor. The second BA team then proceeded to assist in the rescue of the firefighter and station officer.

53. The station officer was seriously injured by smoke inhalation and the report states that it was the opinion of the ambulance service that if the treatment to the station officer had been delayed by more than one minute he may have gone into cardiac arrest. Several other firefighters and ambulance staff were also injured and treated for smoke inhalation.

54. The LFB does not appear to have taken into account HSE advice and guidance on other relevant matters. HSE's report, *The management of health and safety in the GB fire and rescue service consolidated report based on the 8 inspections completed by HSE in 2009/10* (October 2010) found "several occasions where inspectors discovered failings that were serious enough to warrant consideration of enforcement action". HSE inspectors raised serious concerns about BA training. The HSE's investigation took place in the context of a spike in firefighter fatalities, including at high rise incidents.

Fire toxicity

55. The FBU believes the LFB's revised policy PN633 increases the risks of firefighters' exposure to hazardous substances, which can lead to ill-health, injury and premature death. These risks for firefighters are well grounded in international and UK-based research.

56. The International Agency for Research on Cancer (IARC) published *Painting, Firefighting, and Shiftwork, Volume 98* (2010), part of its series of monographs on the evaluation of carcinogenic risks to humans. In the UK, the Industrial Injuries Advisory Council (IIAC) has published three reports about firefighters and cancer:

    - IIAC, *Testicular cancer in firefighters*, IIAC position paper 21, (20 June 2008).
    - Richard Graveling and Joanna Crawford, *Occupational health risks in firefighters* (1 November 2010)
    - Joanne Crawford, *Firefighters and cancer: the epidemiological evidence* (September 2017).

57. In 2018, Professor Anna Stec and colleagues published *Occupational exposure to polycyclic aromatic hydrocarbons and elevated cancer incidence in firefighters* in *Nature* journal, based on two stations in Hampshire Fire and Rescue Service. Researchers examined firefighter exposure to polycyclic aromatic hydrocarbons (PAHs), finding evidence not just on PPE and BA but on firefighters' necks, arms and legs, with skin absorption as well as inhalation. PAH concentrations in skin wipe samples of an instructor and three trainees were found. Concentrations of PAHs were found in helmets, gloves and jackets. Storing gloves in helmets may lead to transfer of contaminants from the gloves to the inside of the helmet. Other contaminants were identified on fire appliances, in offices and in the appliance bay.

58. In 2018 the FBU commissioned Professor Stec and her team to conduct further detailed research into the exposure of firefighters to contaminants. Researchers visited a number of brigades and 18 fire stations in late 2019 and early 2020, until interrupted by the national lockdown.

59. A UK-wide contaminants questionnaire commenced in November 2019 and finished in February 2020. The survey amassed more than 10,600 responses, which provided an impressive quantity of data for the researchers to analyse.

60. On 23 November 2020, Professor Stec and colleagues published the *Minimising Firefighters' Exposure to Toxic Fire Effluents: Interim Best Practice Report*.[16] The report was circulated to politicians, fire and rescue service organisations and media outlets.

61. Indoor air testing at a number of fire stations and training centres highlighted that UK firefighters are exposed to the high levels of toxic contaminants during and after a fire, as cancer-causing chemicals remain on PPE clothing, equipment, and elsewhere at the fire ground. Test samples revealed carcinogens inside firefighters' helmets, on PPE, and even on breathing apparatus mask filters. The firefighters' survey revealed:

    - 4.1% of survey respondents had already been diagnosed with cancer, compared with less than 1% of the general population. Three quarters have served for at least 10 years before receiving their diagnosis. More than half were under the age of 50 and a fifth were under 40
    - Of those diagnosed, 26% have skin cancer, the most common, followed by testicular cancer (10%), head and neck cancer (4%) and Non-Hodgkin's lymphoma (3%)
    - Half of the survey respondents don't think their fire service takes decontamination practices, including cleaning PPE and equipment, seriously
    - 1 in 5 of the survey respondents store their fire gloves in their boots, 1 in 5 store in their pockets, and 1 in 10 store in their helmet, risking the transfer of toxic contaminants directly to skin
    - Nearly half of the survey respondents felt there was a "badge of honour" attitude in the service, particularly when emerging from fires with contaminants on their PPE or face as a sign of hard work.

62. The report made a series of urgent recommendations to minimise firefighters' exposure to toxic fire effluents. This included:

    - Every fire and rescue service must implement fully risk-assessed decontamination procedures en-route to, during and after fire incidents, and ensure all relevant staff are trained in implementing these procedures
    - Fire and rescue personnel should receive regular and up-to-date training on the harmful health effects of exposure to toxic fire effluents, and how these exposures can be reduced, minimised or eliminated
    - **Firefighters should wear respiratory protective equipment at all times while firefighting, including after a fire has been extinguished, but is still 'gassing off'**
    - **BA should not be removed prematurely or donned too late**
    - PPE should be clean and should be thoroughly decontaminated after every incident to avoid a build-up of toxic contaminants
    - Firefighters should shower within an hour of returning from incidents
    - Regular health screening and recording attendance at fire incidents over the course of a firefighter's career is strongly advised and will be key to the longer-term monitoring and management of their health.

[16] UCLan, Minimising Firefighters' Exposure to Toxic Fire Effluents: Interim Best Practice Report, 2020 https://www.fbu.org.uk/publication/minimising-firefighters-exposure-toxic-fire-effluents

63. After the interim report was published, the FBU held an initial, informal meeting with senior HSE staff, who confirmed that all the recommendations were as expected and would not be seen as controversial. These include the recommendation on the use of BA. Similarly, the LFB has welcomed the research and committed to implementing the recommendations. Yet its proposed procedure in PN633 clearly creates the risk of firefighters donning BA too late.

64. Although the research did not evaluate breathing apparatus procedures, it is clear that if anything control measures should be strengthened – and certainly not weakened. The LFB's proposed new procedure is not consistent with this report's evidence.

Operational matters

65. The FBU has a number of operational concerns with paragraphs 6.3, 6.30 and the related paragraphs, which authorise incident commanders to allow firefighters to work beyond the entry control point at the bridgehead without first starting up their BA sets.

66. First, the new disputed procedure creates additional, foreseeable risks to the lives and health of firefighters in a situation where the risks have already been elevated beyond the normal parameters of high rise firefighting. In the February 2020 draft – paragraph 5.28 – committing firefighters beyond the bridgehead wearing BA sets that have not been started up is described as "extremely high risk activity". In the new draft (6.30), it is only "an increased level of risk". It should be clear that merely changing the words in the document does not in any way alter the risks clearly acknowledged by the previous version.

67. Second, there is no indication of how the firefighters committed in this manner should judge when they need to start up their BA sets. The current draft (paragraph 5.23) refers to "safe air" at the bridgehead, but the policy does not explain how firefighters would judge or measure the air or conditions they may be committed into or when it would be "necessary" (6.30) to start up their sets. Firefighters will be exposed to noxious gases, which may not be detected (even with gas monitors); to oxygen deficient atmospheres undetectable without appropriate detection equipment; and to particles and other hazardous substances (such as asbestos) which may cause fatality or injury at the incident or some years afterwards. Adjusting other personal protective equipment (PPE, such as helmet, firehood and gloves), which may be necessary to initiate BA in such dynamic situations, amplifies the risk further.

68. Third, the LFB has not explained whether this use of BA is compliant with the instructions of the manufacturers of these sets. Breathing apparatus, the tallying system, whistle, Automatic Distress Signal Unit (ADSU) and related equipment are designed to be used in tandem to reduce the risks of committing firefighters into hazardous situations. The FBU has seen no evidence that the LFB's proposed procedure is compliant with the instructions of those who designed and made the technologies.

69. Further, the revised LFB policy does not explain how the officers managing the BA entry control can monitor and command those firefighters committed without starting up, to ensure their safety. This is important because, should the BA entry control officer have concerns about their safety, they may have to declare a BA emergency and deploy more firefighters to search and rescue for their colleagues.

70. The February 2020 draft (paragraph 5.29) introduced a further risk to the firefighters committed beyond the bridgehead while not under air. It stated:

> *5.29 Teams committed through entry control wearing BA not started up and not under air should not force entry into flats unless they are **confident** that there is no fire spread into these flats. [our emphasis]*

71. This was disputed by the FBU, but remained until 16 March 2021 draft (as paragraph 6.30). LFB has now removed the wording from the disputed section, with the latter wording put into paragraph 6.25d, when firefighters would be committed under air, but without firefighting media, for search and rescue.

72. Had this paragraph remained, it would have further increased the risks facing firefighters. It did not explain how the firefighters sent beyond the entry control point without starting up their BA sets would make the "confident" decision to force entry. It is not effective, safe or professional to expect firefighters to work without going under air in what is, by definition, an extraordinary emergency situation.

73. The LFB has not evaluated the utility of the activities in the disputed paragraphs. It is not stated how much air time it expects to "save". It is not clear whether those minutes or seconds are sufficient to undertake the tasks, which may include arduous activity rescuing one or more residents. Instead the elevated risk may lead to the death or major injury of the firefighters deployed. If incident commanders have to redeploy firefighters to rescue their colleagues who have become incapacitated through exposure to heat or noxious fire gases, they would have to divert firefighting resources, including search and rescue, from the public. Even setting aside the risks to the firefighters themselves, the proposed policy may also be counter-productive to efforts to evacuate or rescue members of the public.

74. Finally, LFB has not taken steps in all such premises at risk of catastrophic failure, where people may be living (or working) at such a great distance from the bridgehead, so as to enable pre-planning to avoid committing firefighters in this way or to manage the risks with other prevention and control measures. It is unknown if the premises fire risk assessments consider this situation is appropriate, suitable and sufficient and whether LFB has satisfactorily audited the plans.

75. These paragraphs indicate that foreseeable elevated risks to firefighters are already present. Even without the planned deployment of firefighters above the bridgehead without starting up their BA sets, these firefighters will already be placed at greater risk of death, acute injury or chronic ill-health. Adding to these risks, without evaluating the harm this could cause, is not an acceptable way to proceed with a policy. It is not a safe system of work.

76. Additionally, it also creates a wider threat to safety beyond the types of incident addressed in this policy. If this essential control measure can be removed at very high levels of risk, it may end up getting dropped in less hazardous situations.

77. The FBU believes the LFB proposal to allow firefighters to work beyond the bridgehead without first starting up their BA sets is fundamentally at odds with operational best practice. The FBU commissioned former ACO Lewis Ramsey to provide an expert report on these matters, to assist the panel in its deliberations.[17] The report explains how guidance has been developed, often based on learning lessons from incidents and fatalities, to ensure safe systems of work. It outlines how the LFB's proposed procedure breaks away from that best practice, putting the safety of firefighters at risk. The FBU appends Lewis Ramsey's report to this submission.

The Grenfell Tower fire and the public inquiry

78. The LFB's policy PN633 refers to incidents where there may be a catastrophic failure of compartmentation, which would require the measures set out. Clearly the LFB policy revision is motivated by the desire to do something to prevent such loss of life as occurred at the Grenfell Tower fire on 14 June 2017.

79. The FBU shares this sentiment and believes the Westminster government and local fire authorities can do much more reduce the risk of another similar fire taking place in the first place. More action to strip flammable cladding from buildings, alongside more resources for inspection and enforcement action are measures that are, or could be, currently available. These are matters the FBU campaigned on before the Grenfell Tower fire and has been demanding ever since that tragic day.

80. However the LFB's proposed procedure, sending firefighters beyond the entry control point at the bridgehead without starting up their BA sets, does not contribute to these goals. The Grenfell Tower Inquiry (GTI) phase 1 report does not require LFB to make these changes. The main recommendation on evacuation for LFB states:

> *33.22b. that fire and rescue services develop policies for partial and total evacuation of high-rise residential buildings and training to support them*[18]

[17] Lewis Ramsey, The Practical Danger Involved in Firefighters Going beyond the Bridgehead without Breathing Apparatus, Report to the Fire Brigades Union, March 2021

[18] Grenfell Tower Inquiry, Phase 1 report, 30 October 2019: 777 https://assets.grenfelltowerinquiry.org.uk/GTI%20-%20Phase%201%20full%20report%20-%20volume%204.pdf

81. The GTI has generated a great deal of evidence, including testimony that has a bearing on the matter in dispute. The GTI's Phase 1 report (30 October 2019) contains a detailed account of events.

82. Similarly, the LFB's own *Operational Response to Grenfell Tower* (v7, dated 7 February 2019 and published for the Fire, Resilience and Emergency Planning Committee meeting on 16 October 2019) contains a narrative of the events on the night.

83. Both reports show that the Grenfell Tower fire started on the fourth floor. As firefighters successfully put the fire out in the flat of origin, there was inevitably smoke in the lobby of that floor and then into the stairwell (because the door was partly opened by hose and because residents and firefighters had to pass through it).

84. The experiences and testimony of firefighters who were the first on scene are particularly relevant to this policy. These firefighters did everything possible to assist residents, including putting themselves at considerable risk. LFB's own *Operational Response* highlights some key moments early in the fire:

> *01:07:21 Firefighter O'Beirne, Firefighter Badillo and Firefighter Dorgu retreat from the fourth floor lobby to the stairwell due to the smoke. They shut the door to the fourth floor behind them to stop smoke getting into the stairwell…*
>
> *01:15 Firefighter Badillo, whilst on the third floor, meets a group of individuals who show signs of having been in smoke. He states they have streaming eyes, they are coughing and look panicked. They say they are from the fifth and sixth floors...*
>
> *01:28 Firefighter Badillo is travelling in the lift to the 20th floor. He states that the lift stops at the 15th floor, where the doors open and the lift car fills full of black smoke. He is not wearing BA. Firefighter Badillo manages to find his way through the lift lobby door and into the stairwell. He then descends the stairs…*
>
> *01:33:33 BA Team Five: CM Secrett, Firefighter Dorgu and Firefighter Badillo, go under air and remove their BA tallies. They tell WM O'Keeffe they are going to the 20th floor to rescue a girl (now known to be Jessica Urbana). This is following Firefighter Badillo's earlier attempt to get to flat 176. Firefighter Badillo still has the keys to the flat…*
>
> *01:37:12 BA Team Five: CM Secrett, Firefighter Badillo and Firefighter Dorgu exit the lift at this time, it is not confirmed which floor but the firefighters believe it to be around the sixth, seventh or eighth floor level. This is unexpected as they think they are going to the 20th floor. Thick black smoke enters the lift. They state they leave the lobby and make their way to the stairs and start to climb. They do not pass anyone on their way up the stairs to the 20th floor...*[19]

[19] LFB, Operational Response to Grenfell Tower (v7), 7 February 2019: 16, 24, 53, 70, 79-80 https://www.london-fire.gov.uk/news/2019-news/october/brigade-urges-government-to-stop-neglecting-fire-safety-at-grenfell-report-committee/

85. The risks of exposure to smoke were further illustrated later in the incident, during the rescue of residents from Flat 95, 12th Floor. Again, the firefighter involved – David Hill – went to incredible lengths to rescue the family of four, at considerable risk to his own safety. LFB's Operational Response report records:

> *02:36 Firefighter Hill from BA Team 21 states as soon as a male, female and two children leave flat 95 the children are screaming that they can't breath. They get to the stairwell and the male is shouting at Firefighter Hill that his children can't breath. Firefighter Hill removes his fire helmet and BA facemask and tries to give the four people some air from his BA set (The BA Data shows that this happens three times between 02:34 and 02:36). Firefighter Hill thinks he is going to pass out because he is breathing in the smoke. He puts his BA facemask back on and they then start to descend the stairs. Firefighter Hill believes he is around the ninth or eighth floor and decides to pick up one of the daughters and run with her down the stairs to clean air, where he hands her to another firefighter.*

86. Firefighter Hill's powerful testimony to the inquiry explains how, even in the stairway, conditions were exceptionally dangerous for anyone without breathing apparatus:

> *I got the family all in a line, I led them and they were holding each other and we left. As soon as we were in the hall they were plunged into the darkness, I don't think they were expecting how bad it was. Very quickly the girls starting screaming "daddy I can't breathe" I was saying "Let's go, let's go we have to get out of here". I did take in some of that smoke and one breath is toxic. We went through the door into the stairwell, they were making very slow progress and it took us quite a long time to get from the flat door out to the stairwell. They were screaming and the dad was shouting "Mr Fireman, Mr Fireman my children can't breathe" As I had come up I had seen a crew that had an extra set and a girl had walked out with a face mask, that stuck in my mind. I DRA'd [dynamic risk assessment] it and I knew there was safe air about 5 floors below which wasn't a long way. So I took my mask off, held my breath and gave the family each a breath. For some of them it worked well but it was very tricky to get the fittings of the back of the mask out of the way, especially for the youngest daughter. It's a sad reminder, now looking back I think the youngest girl hardly got any air. Some members of the family got more oxygen than others. I don't actually remember giving it to the mum at all.*
>
> *Whilst they had my air I did take in a few breaths of the smoke. I put my mask back on and we continued down. It was again slow progress, I was shouting at them all the time that we needed to go.... I gave them air 2 or 3 times from my mask. I think I tried to hold my breath but there were times when I took in some deep breaths of the smoke. By possibly the third time I realised I would end up passing out which was good for no one, we just needed to get out. I knew the building wouldn't collapse on them, I just needed to get them out…*
>
> *I got this lady down and by that point my time of whistle was going off on my set. I was absolutely exhausted at this point. I don't think I could have done much more and I was struggling to breathe. I soon realised that it was the mother not the daughter, she was however the same lady that I saw in the flat. Luckily another crew was there so they helped me with the mother... Taking her down took all that I had. I think at that I point I thought the dad must have taken the youngest daughter. I knew I couldn't go back up*

because I was exhausted and my time of whistle was going off. I thought wow that was intense, we'd got them all out.[20]

87. The LFB's own operational response report captures both the impact of the rescue on firefighter David Hill:

> *02:40 BA Team 31: CM Hoare and Firefighter Tanner both see who they believe is Firefighter D Hill. Firefighter Tanner states "Then a fireman came in in a right state his name was Hills or Mills, I don't know where he was based. He was proper exhausted, just all floppy, eyes rolling, people were helping him, trying to take his set off." CM Hoare from BA Team 31 is waiting for their brief and also states he sees a female firefighter (known to be Firefighter Bloxham, BA Team 24) assisting Firefighter D Hill…*

88. The operational response report also demonstrates the risks during search and rescue, including the fear that David Hill was missing and needed assistance from other firefighters:

> *02:44:07 BA Team 28: Firefighter Reddington and Firefighter Upton report to the bridgehead on the third floor. They… are leaving the bridgehead when they hear firefighters shouting that a firefighter (Firefighter D Hill) is* ***missing****…*
>
> *02:55:05 BA Team 31: CM Hoare and Firefighter Tanner report to the bridgehead… WM De Silvo re-tasks them to go to the 12th floor for a declared* ***'firefighter emergency'*** *(believed to be Firefighter D Hill of BA Team 21)… [our emphasis]*
>
> *02:58:17 BA Team 32: WM Aston-O'Donovan and Firefighter Green are climbing the stairs in the stairwell making their way to the 12th floor to respond to a 'firefighter emergency'…*
>
> *03:10:00 AC Roe at CU8 confirms we have a potential firefighter emergency for Firefighter D Hill who is currently unaccounted for. At the same time WM De Silvo has already tasked BA Team 31: CM Hoare, Firefighter Tanner and BA Team 32: WM Aston-O'Donovan, Firefighter Green to go to the 12th floor to find Firefighter D Hill…*[21]

89. Finally, the inquiry has highlighted the long term effects of intervention at Grenfell Tower. Firefighter Robbie Gentry was part of the crew that rescued the residents of Flat 82, 11th floor at around 05.00, one of the last rescues firefighters were able to carry out on the night. Again, we emphasise the incredible lengths firefighters went to in order to rescue people trapped in the building. However this came at considerable cost to those involved. In his testimony to the inquiry, Firefighter Gentry explained:

> *Since the fire, and because of it, I've had treatment at the Brompton Hospital for scarring of my lungs. The condition was initially identified after I failed a brigade medical. My lung capacity had dropped and so I was sent for tests. The Brompton is a lung specialist hospital and the condition has developed since the fire.*[22]

---

[20] FF David Hill, Witness statement, MET000083299_0009-10
https://www.grenfelltowerinquiry.org.uk/evidence/witness-statements-david-hill
[21] LFB, Operational Response to Grenfell Tower (v7), 7 February 2019: 215, 226, 245, 251, 274
[22] FF Robbie Gentry, Witness statement, MET00019991_0009
https://www.grenfelltowerinquiry.org.uk/evidence/witness-statements-robbie-gentry

90. The inquiry has also taken valuable evidence from experts. Professor David Purser's report to the GTI explained the impact of toxic smoke:

> *265. Based on this assessment it is my opinion that if as little as 5% of the combustion products from the burning PIR outside each flat penetrated the flat after the flames reached the flat exterior but before the windows failed, then the flat would be filled with very dense smoke and almost zero visibility. This would result in some immediate distress and breathing difficulties. If the flat occupants did not evacuate immediately, then after a few minutes exposure (between approximately 2-25 minutes depending up on the exact conditions), they would collapse unconscious due to the combined asphyxiant effects of inhaling CO and HCN.*
> David Purser, Expert report, DAPR0000001_0077

91. The GTI has produced a great deal of evidence of the risks firefighters faced in a real incident, when there was a catastrophic building failure. This should inform LFB's PN633 revisions.

Physiological risks

92. The LFB has commissioned Professor James Bilzon and his colleagues to carry out some research on the physiological aspects of high rise firefighting. The union is familiar with Professor Bilzon's research on firefighter fitness, which has been used to inform the firefighter fitness standards discussed by the FBU with fire service employers, chief fire officers and governments.

93. The FBU welcomes all efforts to bring serious research to bear on this revised policy. Professor Bilzon's work adds to the Building Disaster Assessment Group (BDAG) research published by the Westminster government more than a decade ago. A key piece of research for that project examined high rise firefighting and concluded:

> *Firefighters may need to climb stairs to deal with a fire on the upper floors of a tall building where either dedicated firefighting lifts have not been provided or where they have failed. Climbing stairs in PPE while carrying EDBA and hose is very physically demanding. Operational planning assumptions, including levels of resources, should take account of the physiological demands of reaching the upper floors of tall buildings with RPE and PPE including any equipment carried. As an example, while it takes only around 15 minutes for the lead team and 10 minutes for the supporting hose team to reach the 28th floor, the cardiovascular and thermal demands are substantial, especially on the lead team. As well as feeling hot and fatigued by the time they reached the 28th floor, the physiological data indicated that the lead team would not be fit to commit to the fire compartment.*[23]

94. The new research comes to similar conclusions. First, the Bilzon report for LFB underlines the arduous nature of high rise firefighting:

[23] ODPM, Physiological Assessment of Firefighting, Search and Rescue in the Built Environment, December 2004: 50
http://highrisefirefighting.co.uk/docs/BDAG07.pdf

5.1 The main findings of this study were that, regardless of the breathing apparatus worn, performing a 120-m vertical ascent and descent of a high-rise building in a full firefighting ensemble and carrying an item of firefighting equipment during the ascent is incredibly demanding and resulted in maximal or near maximal cardiovascular strain for sustained periods.

6.2 Regardless of the breathing apparatus worn, core body temperature rose by an average of ~0.09ºC for every 10-m of vertical ascent and 0.03ºC for every 10-m of vertical descent. Heat-related exhaustion/illness appears to be a significant risk to firefighters during high-rise ascents.

95. The FBU believes these are important findings, because they indicate that the principal physiological limitation for working on the higher floors is not the limited air supply, but the impact on firefighters of having to reach these floors by ascending stairs. It is about the difficulty of the task relative to the human limitations of the firefighter. Even for the fittest firefighters, such a process leaves them exhausted and unable to carry out other duties for very long, whether it is firefighting or search and rescue. This is particularly so if they have to assist members of the public on their descent. This aspect of the Bilzon research does not support LFB's proposal for firefighters to ascend without starting up their BA sets.

96. Second, the new research goes further, indicating that firefighters were not better off working without starting up their BA sets – and indeed many preferred to go under air when ascending the tower:

5.4 There was no difference in physiological strain when ascending under air (UA) or not under air (NUA) in EDBA. Given all other observations, we have no reason to believe that the responses would have been any different in SDBA. While we anticipated there may be some benefit to ascending NUA, primarily by removing the effort of breathing on a respirator, the demands of the high-rise task appear to have nullified any potential small gains. Furthermore, many of the participants reported feeling a benefit when inspiring the cooler air from the cylinder(s), while UA.[24]

97. The FBU believes this is an important finding for the paragraphs in dispute in this proposed policy. There is no physiological advantage to the proposed procedure of ascending above the bridgehead without going under air. Indeed, there may be some physiological advantages of going under air. LFB has accepted this point – it was the last revision LFB made to the policy on 17 March 2021: "*6.40 It is important to note that wearing BA not under air does not offer additional benefits for managing core body temperature and exertions levels as detailed in 6.27*." This finding of the research cannot be used by LFB to justify its proposed procedure.

[24] Bilzon, James and Richard Stevenson, Physiological Demands of High-Rise Operations, 8 March 2021: 37-39

98. The research makes recommendations that firefighters (7.1) using SDBA should not go beyond floors above 80 metres (~20 floors) and (7.4) those with EDBA not above 100 metres (~25 floors). These recommendations arise from physiological impact of ascending to these floors via the stairs. These limitations are important. LFB estimates there are 45 buildings 90 metres or higher in London.[25] The industry forum New London Architecture estimates 525 tall buildings, more than 20 storeys high, currently in the pipeline in the capital, including 89 under construction.[26]

99. However the physiological limits of all firefighters cannot be used to justify the LFB's proposal on working without air. Professor Bilzon was not asked to assess the risks of working in areas where hazardous substances may be present. The LFB is wrong to use the physiological limitations of firefighters to put them at further risk of injury and ill-health from hazardous substances or irrespirable atmospheres. Adapting the worker to the work is the wrong way around. Safe systems of work seek to adapt the work around the worker.

Home Office and MHCLG Evacuation Steering Group

100. The FBU believes that the disputed issues raised by the LFB's revised policy have serious implications for firefighters across the UK. This is partly because LFB is the largest brigade in terms of employees and by the population it protects. The LFB may also set precedents that others will follow, on the assumption that if it's safe for the capital city, it will be safe elsewhere.

101. The FBU also appreciates that the Grenfell Tower Inquiry has directed much of its attention to the LFB. For the record, the FBU argued when the terms of reference were set in 2017 that the LFB should not be the main focus, because the Grenfell Tower fire could have occurred in almost any other brigade in the UK and because UK-wide regulation and guidance set the parameters within which LFB operated.

102. It is important to note that the GTI's key recommendation on evacuation in its Phase 1 report was placed on the Westminster government:

> *33.22a. the government develop national guidelines for carrying out partial or total evacuations of high-rise residential buildings*[27]

103. As a result, in December 2019 the Westminster government established the Home Office and MHCLG Evacuation Steering Group, which includes representatives from the LFB and the FBU, to meet this recommendation. This body is convened by ministers and civil servants. It has met only a handful of times in the last year. The FBU has complained about the slow pace of the work. So far nothing has been produced. In view of the significant public attention to this issue, this lack of progress, in itself, may highlight just how complex the issues are which are being addressed.

[25] LFB communication to the FBU, 24 March 2021
[26] New London Architecture, London Tall Buildings Survey 2020, April 2020
[27] Grenfell Tower Inquiry, Phase 1 report, 30 October 209: 777

104. However given the UK-wide significance of this work, it is a mistake for the LFB to push ahead with controversial changes before other bodies have concluded their work. The FBU agrees that the status quo at the time of the Grenfell Tower fire was unacceptable. The union has gone further than most in demanding systemic, regulatory changes, to be implemented urgently. However it would make no sense for the LFB to push ahead with measures that should be rejected by governments and other national bodies. The FBU points out that previously, the Central Fire Brigades Advisory Council (CFBAC) would have been able to carry out this work. It was however abolished in 2004 and never replaced. There is a significant hole in mechanisms for the development of fire service policy on such matters.

National Operational Guidance

105. The national significance of the LFB's revised policy PN633 is further complicated by ongoing discussions concerning national operational guidance. However, some earlier guidance is still relevant. In 2014, the Department for Communities and Local Government and its chief fire and rescue adviser published operational guidance on breathing apparatus. It issued a stark warning against the practice the LFB want to enshrine in the revised policy PN633:

> *6B1.2 BA is worn at incidents to provide respiratory protection for firefighters working in oxygen deficient, toxic and hazardous atmospheres. It must only be donned and removed in 'safe air'. The practice of firefighters rigging in safe air but not donning their face masks until they reach contaminated atmospheres and then starting up their BA sets is extremely dangerous and must not be permitted.*[28]

106. In 2018, the National Fire Chiefs Council (NFCC) issued further guidance on breathing apparatus.[29] Under, *Role and responsibilities of the BA wearer*, it states:

> The BA wearer will:
> - *Be responsible for managing their own air at all times in accordance with their briefing*
> - *Ensure that they fully understand their brief, tasks and instructions, where and how they are required to enter the risk area, any identified hazards and any limitations on the duration of wear as determined by the person responsible for the BA entry control point*
> - *On instruction from the person responsible for the BA entry control point, start up the BA set, complete required apparatus pre-entry checks and proceed to the BA entry control point*
> - *Ensure an adequate face-fit seal is established in safe air*
> - *Hand the BA tally to the BA entry control operative before entering the risk area, ensuring the tally is placed in the BA entry control board with the 'time in' completed*
> - *Ensure that appropriate personal protective equipment is worn correctly*

[28] DCLG/CFRA, Fire and Rescue Authority Operational guidance: Breathing apparatus, January 2014: 32 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877179/131230-Operational_Guidance_Breathing_Apparatus__Web_archived.pdf

[29] NFCC, Foundation for Breathing Apparatus, 17 January 2018: 15-16, 18 https://www.ukfrs.com/foundation-knowledge/foundation-breathing-apparatus

- *Test all firefighting equipment before entering the risk area where there is, or is likely to be, a fire or flammable atmosphere*
- *Check cylinder contents immediately before entering the risk area. Calculate and select the required turn-around pressure in agreement with the person responsible for the BA entry control point and the BA team leader*
- *Carry out safe movement and search and rescue techniques at all times, maintaining close personal contact…*

107. Under the sub-heading Bridgehead or forward BA entry control point, the NFCC policy states:

> *This arrangement allows an incident to be dealt with by deploying BA wearers from a safe-air environment within a structure while being as close as practical to the scene of operations. This may be considered necessary by an incident commander where there is a need to establish a BA entry control point at a distance from the first point of access to a building or risk area, such as in high-rise building or large, complex structure such as a shopping mall.*
> *The location of the BA entry control point in these circumstances will be determined by the incident commander based on the incident plan and the outcome of a risk assessment.*

108. National operational guidance on high rise firefighting operative at the time of the Grenfell Tower fire, known as GRA 3.2, was withdrawn in March 2020. In May 2020, the NFCC began discussions on its draft national guidance on fires in tall buildings and fires in buildings that fail.

109. Last year the FBU held discussions with leading NFCC officials over their drafts. In those discussions, the union made very clear our opposition to any proposal to send firefighters above the bridgehead, but not under air.

110. In December 2020, the NFCC issued revised national operational guidance on *Fires in buildings*. It includes the following in the section: *Hazard – fires in tall buildings*:

> *Extended travel distances to uppermost floors may mean that it is **not practical** for personnel to be deployed wearing breathing apparatus under air above the fire floor. In circumstances where teams need to work in an area above the bridgehead, that is not affected by fire or smoke and it has been confirmed that the building's construction and any fire engineered solutions have not been compromised, teams should follow **local service procedure**. If this allows personnel to be committed with breathing apparatus (BA) but not under air, then all appropriate control measures should be followed including appropriate Breathing Apparatus Entry Control procedures, using a different BA entry control board.[Our emphasis]*[30]

[30] NFCC, Guidance: Fires in buildings. National Operational Guidance, 2021: 105
https://www.ukfrs.com/guidance/fires-buildings

111. The FBU does not accept this paragraph. It has the same flaws as the LFB's new procedure. The NFCC high rise paragraph (and LFB procedure) is in glaring contradiction with the NFCC's existing guidance on breathing apparatus, a contradiction which cannot currently be resolved. The FBU does not accept the suggestion that new breathing apparatus procedures should be left to local procedure. This is recipe for a race to the bottom on firefighter safety and the further fragmentation of national standards. Safety regulation and guidance is UK-wide and should apply to all firefighters.

Inadequate consultation

112. The LFB summary (12 February 2020) accompanying the draft claims:

> *1. The process of reviewing and amending PN633 began in the months immediately following the Grenfell Tower fire. The amendments to this policy have been informed by consultation with Representative Bodies (RBs)…*

113. The FBU's officials in London have taken part in negotiations with the LFB in good faith. Several suggestions made by our officials have been included in the revised policy, underlining the valuable role the union plays in these matters. The FBU is strongly committed to the functioning of safety committees, including in the LFB and recognises that the panel is part of ongoing efforts to resolve the dispute.

114. Nevertheless the FBU has significant concerns about the consultation process with regard to this revised policy. Section 2(6) of the Health and Safety at Work Act 1974 obliges employers to make and maintain arrangements that will enable employer and employees "*to cooperate effectively in promoting and developing measures to ensure the health and safety at work of the employees*".

115. Regulation 4A of the Safety Representatives and Safety Committees Regulations 1977 adds that "*every employer shall consult safety representatives in good time with regard to (a) the introduction of any measure at the workplace which may substantially affect the health and safety of the employees the safety representatives concerned represent*…"

116. The FBU explained why the disputed paragraphs were not acceptable. Our officials raised concerns with the disputed paragraphs at meetings with the LFB before the February 2020 draft and before it went to the FREP.

117. The union made a detailed submission on 23 March 2020, ahead of the LFB's Fire and Resilience Board meeting the following day (and at the beginning of national lockdown due to Covid-19).

118. Despite these legitimate concerns, the LFB has begun to train firefighters under the new policy in the second half of the year.

119. On 2 September 2020, when training packages were uploaded to the Big Learning site, the FBU only received the materials on the day of release, leaving no time for comment or amendment.

120. On 25 September 2020, FBU officials raised at the brigade joint committee for health and safety at work (BJCHSW) the concerns about the training (including on the disputed paragraphs) proceeding without agreement.

121. On 13 October 2020, senior FBU national officials joined a London Fire, Resilience and Emergency Planning Committee meeting about PN633.

122. On 15 October 2020, FBU officials again reiterated the request to cease training on the disputed paragraphs until the matter was resolved. LFB management refused to do so and invoked the advisory panel.

123. The FBU has made its senior national officials and staff available to assist with resolving the dispute. However the union cannot accept the introduction of this dangerous new practice.

124. When LFB asked for the HSAP to convene in December 2020, the draft in dispute was marked as "LFC-0304x·D High Rise Firefighting Policy PN663", dated 12 February 2020. This was the version presented to the Commissioner's Board originally on 29 January 2020 and then again on 4 March 2020 and the Greater London Assembly's Fire, Resilience and Emergency Planning (FREP) Committee of the on 5 March 2020, according to the minutes. It was accompanied by version 5 of the risk assessment. It was this draft, which had remained untouched for a year, which LFB originally intended to put to the panel.

125. The LFB revised PN633 at the beginning of March 2021, after it received the Bilzon report. This version was entitled "PN633 High rise firefighting – 04.03.21 – Following physiological trials". This was accompanied by version 7 of the risk assessment. It was provided to the FBU on Thursday 4 March 2021.

126. However the FBU did not receive the Bilzon report until Monday 8 March 2021. During that day, FBU London officials met with LFB, and a further version of the document was produced, incorporating some of the points they made at the meeting. (This had the same title).

127. LFB told the FBU they further intended to revise the PN633 policy, with the intention of giving a final copy to the FBU on Monday 15 March 2021. However another version, together with a new risk assessment, was not sent until the afternoon of Tuesday 16 March 2021. The LFB made a further change and sent its final submission on Wednesday afternoon, 17 March 2021.

128. All of these revisions have meant the FBU has had to repeatedly reassess the policy. These last minute revisions have delayed convening of the panel. The revisions LFB have made go well beyond their response to the Bilzon report. Bilzon did not deal with hazardous substances, yet LFB have amended paragraphs on these matters. The tracked versions indicate LFB added changes from their new evacuation policy.

129. To illustrate the point, three particular paragraphs were highlighted by LFB as critical to the dispute. All have been changed in the last few weeks, after the panel had been called.

12 Feb 20	4 March 21	16 March 21
5.27	Deleted	Deleted
5.28	6.29, with "extremely high risk activity" deleted	6.30, with "clean air deleted"
5.29	6.30	Deleted, with some wording used in an earlier paragraph, 6.25d, (in a section when firefighters are under air)

130. The risk assessment has also undergone significant revision. In the alternative procedures section, listed as No.3, in the 12 February draft, firefighters were only permitted to go beyond the bridgehead without starting their BA sets if they were on the stairway ("protected shaft").

131. However on 4 March 2021, LFB worsened the risk assessment, allowing firefighters still not under air to enter lobbies, flats or other compartments. FBU officials challenged this on 8 March 2021, so LFB reverted back to original formulation.

12 Feb 20	4 March 21	16 March 21
Teams should not leave the protected shaft or protected lobby without starting up	Teams should not enter a compartment without starting up unless confident there is no fire spread within	Teams should not leave the protected shaft or protected lobby without starting up

132. Unfortunately LFB did not remove the unacceptable procedure for the stairway or anywhere else beyond the entry control point.

Immediate action

133. The LFB's motivation for trying to impose this proposed procedure appears to be that "something" has to be done, with urgency, at least until national building regulations and guidance are improved. The FBU shares this frustration with the slow pace of change. However the FBU has spent more than forty years warning that the regulatory system governing fire safety has been weakened and undermined, including by central government policy and the decisions of chief fire officers. In particular we have highlighted:

- The deregulatory changes to Building Regulations and guidance since the 1980s
- The risks of external cladding systems, when the FBU gave testimony to the parliamentary inquiry in 1999
- The deregulatory changes and downgrading of enforcement with the Fire Safety Order 2005
- The problems with high rise stay put, including our investigation of the Harrow Court fire in 2005, the Lakanal House fire in 2009 and Shirley Towers fire in 2010
- The austerity cuts imposed since 2010, which has reduced firefighter jobs by 20%, including inspectors carrying out enforcement work.

134. However, a hasty and ill-thought through new procedure that puts firefighters at risk of death and injury is no solution to these longstanding problems. LFB should scrap the proposed unsafe procedure of sending firefighters beyond the entry control point when not under air.

135. But the LFB can still take immediate significant steps to protect our communities, while simultaneously managing the risks to firefighters. Appendix 8 of the new PN633 states:

> *Buildings with combustible cladding*
> *3. Over 200 buildings in London have been identified as having cladding systems and compartmentation issues that do not meet the required standard and subsequently present a risk of uncontrolled internal and external fire and smoke spread.*

136. The LFB has powers under Fire Safety Order to take enforcement action, which would benefit both public and firefighter safety. The LFB can immediately put in place prevention and control measures for these premises.

137. The FBU would point to the example of the North Bank building on Wicker Riverside in Sheffield, which was served a prohibition notice following an inspection by South Yorkshire Fire Service on 11 December 2020. The building is 10 storeys high and has 132 flats. The notice meant 35 flats from the sixth to the tenth floor had to be vacated because of the fire safety concerns.[31] Rather than increase the risk to firefighters, in potential breach of requirements under safety legislation, the LFB has powers which it is not using, to remove or significantly mitigate the risk to both firefighters and the public.

138. The LFB could also increase the pre-determined attendance to any fires reported at these premises. The new policy expects the incident commander to increase the make up. However increased pre-determined attendance early in the fire would expand the options available to the officer in charge.

139. The FBU is willing to continue discussions with the LFB to find suitable solutions. However the FBU cannot accept the introduction of a new proposed procedure that puts firefighters at greater risk.

[31] BBC, Sheffield flats evacuated over fire safety failure, 12 December 2020 https://www.bbc.co.uk/news/uk-england-south-yorkshire-55286739

References

Bilzon, James and Richard Stevenson, Physiological Demands of High-Rise Operations, 8 March 2021

Control of Substances Hazardous to Health Regulations 2002
https://www.legislation.gov.uk/uksi/2002/2677/contents

DCLG/CFRA, Fire and Rescue Authority Operational guidance: Breathing apparatus, January 2014
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/877179/131230-Operational_Guidance_Breathing_Apparatus__Web_archived.pdf

Gentry, Robbie, Witness statement, MET00019991_0009
https://www.grenfelltowerinquiry.org.uk/evidence/witness-statements-robbie-gentry

Greater London Authority, Fire, Resilience and Emergency Planning Committee, 5 March 2020. LFB, High Rise Firefighting – Policy Number 633, 12 February 2020
https://www.london.gov.uk/about-us/londonassembly/meetings/documents/g6695/Public%20reports%20pack%20Thursday%2005-Mar-2020%2015.00%20Fire%20Resilience%20and%20Emergency%20Planning%20Committee.pdf?T=10

Grenfell Tower Inquiry, Phase 1 report, 30 October 2019
https://assets.grenfelltowerinquiry.org.uk/GTI%20-%20Phase%201%20full%20report%20-%20volume%204.pdf

Health and Safety Executive, Striking the balance between operational and health and safety duties in the Fire and Rescue Service, March 2010
https://www.hse.gov.uk/services/fire/duties.pdf

Health and Safety at Work etc. Act 1974
https://www.legislation.gov.uk/ukpga/1974/37/contents

Hill, David FF, Witness statement, MET000083299_0009-10
https://www.grenfelltowerinquiry.org.uk/evidence/witness-statements-david-hill

LFB, Operational Response to Grenfell Tower (v7), 7 February 2019
https://www.london-fire.gov.uk/news/2019-news/october/brigade-urges-government-to-stop-neglecting-fire-safety-at-grenfell-report-committee/

LFB, LFC-0304x·D High Rise Firefighting Policy PN663, 12 February 2020
https://www.london-fire.gov.uk/media/5160/lfc-304x-d-high-rise-firefighting-policy-663.pdf

LFB, Risk Assessment Form High rise policy 633 V5, 25 August 2020

LFB, Evacuation and Rescue Policy, 9 October 2020
https://www.london-fire.gov.uk/media/5381/lfc-0391-evacuation-and-rescue-policy.pdf

LFB, PN633 High rise firefighting – 04.03.21 – Following physiological trials, 4 March 2021

LFB, Grenfell PN633 High Rise Firefighting RA V7 040321, 4 March 2021

LFB, PN633 High rise firefighting – 04.03.21 – Following physiological trials, 8 March 2021

LFB, PN633 High rise firefighting – Final HSAP Submission, 16 March 2021

LFB, PN633 High Rise Firefighting RA - Final HSAP submission, 16 March 2021

LFB, PN 633 High rise firefighting - Final HSAP Submission (3), 17 March 2021

Management of Health and Safety at Work Regulations 1999
https://www.legislation.gov.uk/uksi/1999/3242/contents/made

NFCC, Foundation for Breathing Apparatus, 17 January 2018
https://www.ukfrs.com/foundation-knowledge/foundation-breathing-apparatus

NFCC, Guidance: Fires in buildings. National Operational Guidance, 2021
https://www.ukfrs.com/guidance/fires-buildings

New London Architecture, London Tall Buildings Survey 2020, April 2020

ODPM, Physiological Assessment of Firefighting, Search and Rescue in the Built Environment, December 2004
http://highrisefirefighting.co.uk/docs/BDAG07.pdf

Ramsey, Lewis, The Practical Danger Involved in Firefighters Going beyond the Bridgehead without Breathing Apparatus, Report to the Fire Brigades Union, March 2021

UCLan, Minimising Firefighters' Exposure to Toxic Fire Effluents: Interim Best Practice Report, 23 November 2020
https://www.fbu.org.uk/publication/minimising-firefighters-exposure-toxic-fire-effluents