

# Report for the Grenfell Tower Inquiry

Report by

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**TABLE OF CONTENTS**

|  |               |
|--|---------------|
| <b>INTRODUCTION AND EXPERIENCE</b>   | <b>- 2 -</b>  |
| <b>SECTION 7(2)(D) OF THE FIRE AND RESCUE SERVICES ACT 2004: OPERATIONAL RISK MANAGEMENT</b> | <b>- 8 -</b>  |
| <b>TRAINING</b>  | <b>- 34 -</b> |
| <b>ASSESSMENT OF FIREFIGHTING ON THE NIGHT OF 14 JUNE 2017</b>                               | <b>- 57 -</b> |
| <b>ALTERNATIVE FIREFIGHTING AND SEARCH AND RESCUE STRATEGIES</b>                             | <b>- 77 -</b> |
| <b>APPENDICES</b>  | <b>- 86 -</b> |

## **Introduction and experience**

### **Introduction**

1. My name is Stephen McGuirk, and I have been instructed by the Public Inquiry Team (“the Inquiry”) to fulfil the role of Independent Expert for the purposes of its investigation. I confirm I am an independent expert; I understand my duty to the Inquiry, and I have complied with, and will continue to comply with, that duty.
2. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer, and I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not.
3. Where, in my experience, a range of professional opinions on any matter exists amongst fire officers, I have sought to summarise that range of opinion, while clearly giving my opinion along with the reasons for it. I have also sought to identify any assumptions that I have made in reaching my conclusions.
4. Moreover, particularly in the case of fire and rescue service guidance, I have referred only to the key documents that I consider might be most relevant to the Inquiry, in the context of the specific issues that this report seeks to address (outlined below).

### **Reference materials**

5. In order to produce this report, I have reviewed documents and witness statements that have been provided to the Inquiry by the London Fire Brigade (the LFB). I have also undertaken my own research via sources known to me as a consequence of my experience in fire and rescue services. Most of these reference materials are, or have been, in the public domain though, in some cases, I have submitted relevant papers to the Inquiry.

### **Professional expertise and disclosure of interests**

6. The views and opinions expressed in this report are based on my practical experience of working in fire and rescue services for 39 years and holding a senior leadership role for nearly 20 of those years.
7. As a senior and commanding officer, I worked with Government Departments and other bodies that make up the architecture of the fire and rescue sector. For example, the Local Government Association, the Institution of Fire Engineers, the Fire Protection Association, the Fire Brigades Union, etc. as well as a number of fire authorities. It is inevitable, given my length of service (especially at a senior level) and given the need for working relationships, that I have encountered and engaged with numerous fire officers, politicians, and officials associated with the bodies identified. It follows that it is equally likely that some of those individuals and entities will

provide evidence to Phase 2 of the Inquiry, and some bodies are Core Participants (CPs); for example, Government Departments and the Fire Brigades Union. However, I do not consider that these interactions have caused any actual or potential conflict of interest in my consideration of the facts and in expressing my opinion in this report. Notwithstanding, I have attached a more comprehensive CV as an Appendix to this report, and I have provided a brief overview of my fire service experience below.

### **Service (operational) experience**

8. I served as an operational officer at all levels of the fire and rescue service, starting as an operational firefighter in the mid-1970s, and spending nearly a decade on front line appliances, both as a firefighter and junior officer. I subsequently moved through the more senior officer ranks, though I continued to respond to incidents throughout my service.
9. My operational experience was gained in a wide and varied range of fire and rescue services and authorities, which included the three largest metropolitan fire services outside London, namely, Greater Manchester, West Midlands, and South Yorkshire. It also encompassed work in a smaller County Council Fire Service contiguous with London (Royal Berkshire), and an extended period commanding a medium sized fire and rescue service (Cheshire). Accordingly, this experience incorporated command roles at all levels of incident, including Gold (Strategic) Command for major fires and other emergencies (30+ pump fires and major chemical incidents); as well as civil contingencies (major flooding) and major civil disorder (in the 1980s, the 1990s and in 2011). With regard to wider, strategic command responsibilities, I was the Chair of the Greater Manchester Resilience Forum for a number of years, so I also have experience of command and control in multi-agency settings and situations.

### **Strategic management, corporate, and governance experience**

10. For around twenty years, I operated at the strategic tier of the fire and rescue sector.
11. In the context of fire and rescue services, I was the Divisional Commander of the inner-city (Birmingham) Division of the West Midlands Fire Service and subsequently Deputy and Chief Fire Officer (CFO) of Cheshire, with a period of nearly a year acting as the CFO of two fire services concurrently (Cheshire and South Yorkshire). My last six years of service were as Chief Executive and County Fire Officer of the Greater Manchester Fire and Rescue Service.
12. In the context of fire authorities, I have operated in a variety of fire governance arrangements and worked closely with most forms of fire authority (governing body). These comprise Metropolitan, County Council, and Combined Fire Authorities, but include, also, limited experience of the Metro Mayor and the Police, Fire and Crime Commissioner (PFCC) governance model.



13. In the context of the fire and rescue sector, I was a Board member of the Chief Fire Officers Association (CFOA<sup>1</sup>) for nearly a decade, but I was also the President of the Chief Fire Officers Association between 2006-2008. In that capacity, I engaged regularly and frequently with officials and Ministers up to the highest levels. This included engagement with relevant national incidents and subsequent Inquiries and Reviews,<sup>2</sup> as well as providing evidence to relevant Select Committee Inquiries.
14. In recognition of my contribution to fire and rescue services I was awarded the Queen's Fire Service Medal in 2000 and made a Commander of the Order of the British Empire (CBE) in 2005. I was also made a Fellow of the Institution of Fire Engineers (FIFireE) in 2004.

### Site visits

15. I carried out five visits to Grenfell Tower between 2017 and 2018 in order to prepare this report, and I will briefly explain the purpose of these visits:
  - (i) **9<sup>th</sup> October 2017:** this was a general familiarisation visit along with a number of other Inquiry Experts to acquire an overall awareness of the site and the event.
  - (ii) **30<sup>th</sup> October 2017:** this was to orientate myself in relation to the site layout, the buildings' facilities and access and egress, as well as walking the building from top to bottom (in protective clothing). This was to gain some appreciation of the physical demands imposed on the operational crews as a result of the building's layout and features. I acknowledge that this is not a like-for-like comparison with the experience of the crews on the night in any way, rather it was more an endeavour to be able to properly contextualise my understanding of the witness testimony.
  - (iii) **4<sup>th</sup> December 2017:** this was to review the wider area (geography/topography) around the Tower and to orientate myself in relation to the access and other facets of operations on the night, such as water supplies. I also wanted to reflect on external firefighting tactics, notably the deployment of aerial appliances and ground monitors, and to understand the practical impact of falling debris.
  - (iv) **13<sup>th</sup> March 2018:** this was to clarify emerging questions associated with:
    - a. The ground floor access points – including the second access point on the west side of the tower;

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<sup>1</sup> The work of the Chief Fire Officers Association was taken over by the National Fire Chiefs Council (NFCC) in 2017.

<sup>2</sup> For example, I was responsible for the collective operational response of Fire and Rescue Services to the 2007 floods, as well as co-ordinating the response of all chief fire officers to the subsequent 2008 Independent Review, undertaken by Sir Michael Pitt. I was also responsible for the co-ordination of the service response to the deaths of four firefighters at a major fire in Atherstone on Stour, Warwickshire, in 2007.

- b. The ground floor lobby area – as well as lobby areas at all levels – in the context of breathing apparatus deployment, and concerns associated with the dry rising main and outlets. Importantly, also, to understand the manner in which fire survival guidance information was recorded;
  - c. The mezzanine floor and access to the main staircase and the breathing apparatus control location(s);
  - d. The Fire Lift control location(s);
  - e. The Stairwell and fire door conditions at different levels;
  - f. The detail of window construction and the relationship to fire spread, as well as the implications of fire spread around the crown of the tower and the manner of fire spread across the north and west sides of the tower;
  - g. Access for vehicles – especially aerial appliances, locations of command units, Breathing Apparatus Main Control, etc.
  - h. Information to assist understanding of the deployment of a positive pressure ventilation (PPV) fan and also a light portable pump (LPP).
- (v) **25<sup>th</sup> July 2018:** this visit was to observe tests being undertaken by Dr Stoianov, the Inquiry's Water Supply Expert, who was seeking to determine the capability and capacity of the rising main and surrounding water supply networks to support firefighting operations. He will provide a separate report on this issue, so I will not cover the matter of water supplies in any detail in my report. That said, I will comment specifically on the extent to which the need to augment the supply was addressed as part of the command and control structure on the night.

### Documents considered

16. I have also been provided with and had regard to the following categories of documents, in order to prepare this report:
- (i) Key LFB policy documents, including but not limited to the LFB's policies on Incident Command and High-Rise Firefighting.
  - (ii) Other documents, witness statements and exhibits provided to the Inquiry by the LFB that have been identified by the Inquiry team as relevant to the issues that I have considered as part of this report.
  - (iii) Witness statements of Babcock Training Limited (Babcock), together with their exhibited documents, which have been provided by Babcock in order to assist with the Inquiry's Phase 2 investigations, specifically in relation to the training provided to LFB personnel prior to the Grenfell fire.
  - (iv) The various reports of the other experts who have provided evidence to the Inquiry; in particular, the reports and appendices of Dr Barbara Lane and of Professor Luke Bisby.
17. I have referred throughout the course of this report to any such supporting evidence that is directly relevant to the matters considered in the report and the opinions I set

out. Beyond this, I have not sought to prepare a complete list of all the documents that I have reviewed as part of my preparations for this report.

18. I have also read the considerable number of witness statements of LFB personnel that were taken by the Metropolitan Police and provided to the Inquiry for the purpose of the Inquiry's Phase 1 investigations. I have had regard to these statements and have relied on them where they are relevant to the issues that I consider as part of this report.

### Scope of report

19. I have carefully reviewed the conclusions of the Grenfell Inquiry Phase 1 report insofar as these concern the actions of the London Fire Brigade on the night of 14 June 2017, and I wholly agree with those findings. In particular, I agree with the Chairman's conclusion that, by 01.30 at the earliest and 01.50 at the latest, it was clear that revoking the 'stay-put' strategy in place, and moving to attempt to evacuate the tower was the only realistic way of minimising loss of life and serious injury; and that steps ought to have been taken to carry this out. Notwithstanding I also agree with the Chairman that there were substantial risks and formidable practical difficulties of attempting evacuation.<sup>3</sup>
20. In this report, I will seek to address any issues that are material to the Inquiry's terms of reference and which were either not addressed in the Phase 1 report because they were outside the scope of the Inquiry's Phase 1 investigations, or which were addressed in the Phase 1 report and on which I consider I am able to offer a further opinion that I consider may be of assistance to the Inquiry's Phase 2 investigations. Where, in my view, the evidence that I have reviewed indicates that further investigations should be made in relation to a specific issue, I have sought to set this out clearly in the course of this report, so that it may form part of the Inquiry's Phase 2 investigations.
21. The issues which I consider in this report are:
- A. The nature and scope of the duty imposed by section 7(2)(d) of the Fire and Rescue Services Act 2004, and the adequacy of the LFB's processes to discharge this duty.
  - B. Training, to the extent that the findings made in the Phase 1 report call for further investigation; specifically:
    - (i) How a Fire and Rescue Service may seek to encourage the use of initiative amongst its personnel, whilst discouraging "freelancing";
    - (ii) How a Fire and Rescue Service may seek to implement effective Incident Command training for large-scale high-rise fires, despite the decreasing number of such "real life" incidents; and

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<sup>3</sup> Phase 1 Report, Vol IV, paras 28.6, 28.20, 28.44.

- (iii) The adequacy of the LFB's Incident Command training as at 14 June 2017, to the extent that it has been possible to consider this on the available evidence.
  - C. The effectiveness of the equipment used by the LFB on the night of 14 June 2017, to the extent that this has not already been addressed in the Phase 1 report; specifically:
    - (i) Aerial Ladder Platforms (ALPs);
    - (ii) Ground monitors;
    - (iii) Positive Pressure Ventilation (PPVs);
    - (iv) Light-weight Portable Pumps (LWPPs).
  - D. Whether there are any alternative firefighting strategies that are either currently adopted by other fire and rescue services or which have been the subject of research, that could have been effectively adopted by the LFB on the night of 14 June 2017.
22. This report is structured in four sections which seek to address those topics in the order set out.

I reserve the right to alter my opinions and conclusions in the light of any further information of which I am currently unaware. Under such circumstances, I recognise, and will comply with, my obligation to inform the Inquiry.



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**Dated:** .....25.01.2021.....

## **Part A: The nature and scope of the duty imposed by section 7(2)(d) of the Fire and Rescue Services Act 2004: Operational Risk Management**

### **Introduction**

1. The duty of Fire and Rescue Services (FRSs) to undertake risk information visits, otherwise known as familiarisation visits or section 7(2)(d) visits, was not something new or introduced by section 7(2)(d) of the Fire and Rescue Service Act 2004 (the 2004 Act). Rather, the 2004 Act replaced the previous Fire Services Act 1947 (the 1947 Act), section 1(1)(d) of which embedded the requirement for risk information to be collected.<sup>4</sup> I consider that the legislative history is significant to the Inquiry's considerations, for reasons I will briefly explain.
2. Section 1(1)(d) of the 1947 Act set out:

*"It shall be the duty of every fire authority in Great Britain to make provision for fire-fighting purposes, and in particular every fire authority shall secure...*

*(d) efficient arrangements for obtaining, by inspection or otherwise, information required for fire-fighting purposes with respect to the character of the buildings and other property in the area of the fire authority, the available water supplies and the means of access thereto, and other material local circumstances*

3. This obligation was narrow, requiring the collection of just a few pieces of general information, specified in the legislation, for firefighting purposes. The information required by section 1(1)(d) related to the character of the buildings and other property in the area; the available water supplies and the means of access thereto; and "*other material local circumstances*." The relevant Manual of Firemanship<sup>5</sup> also confirms that knowledge of the station ground is the first requisite for successful firefighting<sup>6</sup>. The guidance did not specify the premises to which section 1(1)(d) applied, this was left to local determination, and, in the main, was informed by local knowledge about a station ground, by fires that occurred locally within brigades, or as a result of national events that were considered to have ramifications for all fire brigades. In the latter case, the decision about events that should be brought to the attention of fire authorities nationwide would have been taken by HM Fire Services' Inspectorate (HMFSI), and the information disseminated via the circulars or Dear Chief Fire Officer Letters (DCOLs) issued by Her Majesty's Fire Services Inspectorate.

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<sup>4</sup> As the relevant section of that Act was Section 1(1)(d), familiarisation visits had previously been referred to as *1.1.d. visits (or 11d)*.

<sup>5</sup> Manuals of Firemanship were essentially national operational guidance issued by Government Departments (principally the Home Office) up until 2015 when all such information was (effectively) replaced by the National Operational Guidance.

<sup>6</sup> *Manual of Firemanship, Book 11, Practical Firemanship 1 (Fourth Impression – 1989)*, Part 1 Chapter 1.2.(a) "*Knowledge of the Station Ground*", pp 2-3.



4. Further national guidance was published in this way throughout the 1970s and 1980s, the majority of which is not relevant to current considerations. Although, there are several aspects of Fire Service Circular (FSC) 16/1989 (the 1989 Circular) that provide some assistance in understanding what the purpose of section 1(1)(d) visits was, and how the visits were designed to function in practice. I will explain why that is.

### Fire Service Circular (FSC) 16/1989

5. Generally, the 1989 Circular encouraged a straightforward and common-sense approach to section 1(1)(d) inspections, the nature of which would be determined by *"apply[ing] the test of whether basic firefighting techniques would be sufficient to cope with most of the incidents that could be envisaged at the premises."*<sup>7</sup> It stressed that *"pre-planning for section 1(1)(d) premises should not involve a great deal of detail. In most cases, planning will be carried out at station level"*, and therefore *'any plans should be readily accessible to the first attendance crews and be in a standard format'* – a card.<sup>8</sup> The 1989 Circular outlined ten factors that should determine the frequency of inspection, making it clear that pre-planning should involve a two-way consultation between the FRS and the occupier of the premises or site.
6. During inspections, Brigades were directed to consider six pieces of information, to the extent relevant to the premises, namely:
  - (i) Occupancy and use;
  - (ii) Access (both to and within the premises);
  - (iii) Structural features and layout;
  - (iv) The presence of hazardous materials and processes;
  - (v) Firefighting resources and fixed installations; and
  - (vi) Power intake controls.<sup>9</sup>
7. The 1989 Circular stated that the information should be assessed *"in operational terms"* and any plan incorporated onto section 1(1)(d) records *"should be kept simple."*<sup>10</sup> Specifically, it stated that details should be kept to a minimum as they might need to be transmitted to reinforcing crews, possibly by radio.<sup>11</sup> Additionally, because the chief users of the information would be first responding crews, it followed that the amount of information that could usefully be acted upon was limited, and in most cases, general in nature. Brigades may need to hold comprehensive information and detailed plans for more complex premises, but this should not replace the use of a simple and common 1(1)d card available to initial, attending crews, which was intended to serve as a *"compact aide-memoire."*<sup>12</sup> The guidance did not specify the frequency for inspections, but since the fire service (for

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<sup>7</sup> FSC 16/1989, p.16, para 4 {SMC00000042}.

<sup>8</sup> FSC 16/1989, p.17, paras 9 and 11 {SMC00000042}. See {LFB00000112} which is a section 1(1)(d) card for Grenfell Tower (undated).

<sup>9</sup> FSC 16/1989, p.17, para 10 {SMC00000042}.

<sup>10</sup> FSC 16/1989, p.17, para 10 {SMC00000042}.

<sup>11</sup> FSC 16/1989, p.17, para 11 {SMC00000042}.

<sup>12</sup> FSC 16/1989, pp.17-18, paras 11-14 {SMC00000042}.

practical considerations) has had a four watch duty system since 1978, the default frequency was four times a year for every premises (each watch, once a year).

8. Importantly, the guidance recognised the significance of the role of Fire Prevention Officers,<sup>13</sup> noting that they may encounter hazards that could have operational implications during their inspection programme and providing that there should be a clear procedure for exchanging information with operational crews.<sup>14</sup> The guidance also acknowledged, though, that information about risks related to particular premises could come from many sources.
9. Finally, the guidance stressed the essential link to operational training, suggesting that exercises should be held at section 1(1)(d) risk sites, and visits should be followed up by lectures (associated with the risks and hazards encountered) with discussion between crews around the operational implications of the information gathered.<sup>15</sup> Interestingly, the guidance did not state that there was a need for firefighters to undertake training on how to carry out the section 1(1)(d) inspections themselves. It is also notable that the guidance does not address the question of how firefighters should collect and collate risk information at high-rise buildings specifically.
10. The 1989 Circular was reinforced in 1999, by the HMFSI's *Expectations Manual*<sup>16</sup> ('The Manual', which was subsequently updated and redistributed, in 2001). The Manual reinforced much of the 1989 Circular – including the need to integrate fire safety information with operational risk information. The updated 2001 Manual also established two further items of operational information to be gathered during inspections, in addition to the six already prescribed in the 1989 Circular; namely, site specific special operational procedures and potential environmental effects.<sup>17</sup> Again it is notable that the Expectations Manual does not address the question of how firefighters should collate risk information at high-rise buildings specifically.
11. Consequently, by the time of the publication of the updated Manual in 2001, there were eight pieces of information that crews were directed to collect during section 1(1)(d) visits (items (i) to (vi) deriving from the legislation, and items (vii) and (viii) from the Manual):

- (i) Occupancy and use;

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<sup>13</sup> The term "Fire Prevention Officers" (FPOs) refers to officers undertaking inspections as part of enforcing the fire safety legislation in place at the time, primarily but not exclusively, the Fire Precautions Act 1971. For present purposes, FPOs may be considered to fulfil the same role as Fire Safety Officers (FSOs), who are now responsible for enforcing the Regulatory Reform Order 2005 (RRO).

<sup>14</sup> FSC 16/1989, p.16, paras 6 and 7, and p.20, para 24 {SMC00000042}.

<sup>15</sup> FSC 16/1989, p.18, para 14 {SMC00000042}.

<sup>16</sup> The *Expectations Manual* was designed to set out the basis on which Her Majesty's Fire Service Inspectorate (HMFSI) inspections of fire brigades were undertaken. The Expectations Manual was not intended to set new criteria but took into account the various forms of existing guidance relating to all aspects of fire service management and administration, as well as operations and fire safety, including section 1(1)(d) visits. I have not been able to locate the 1999 version of the Manual, though my understanding is that it was this version that introduced the additional two items of operational risk information to be collected.

<sup>17</sup> Expectations Manual Qualifying Statements, 6.2, Section 2, p.85 (20 Feb 2001)

- (ii) Access (both to and within the premises);
- (iii) Structural features and layout;
- (iv) The presence of hazardous materials and processes;
- (v) Firefighting resources and fixed installations;
- (vi) Power intake controls;
- (vii) Site specific operational procedures;
- (viii) Potential environmental effects.

12. In my view, therefore, by the time of the publication of the updated Expectations Manual in 2001, fire brigades had available to them clear and specific guidance as to the particular information to be obtained during visits to premises to which section 1(1)(d) applied. It remained a local matter for brigades to determine which premises and sites to visit, based upon local judgement and criteria, with each individual brigade's approach to section 1(1)(d) being examined as part of the HMFSI inspection programme. It was also the case that, largely speaking, brigades were still operating a card-based system at this time, those cards being held locally on appliances and at stations, with command units and control rooms usually retaining a central register of all section 1(1)(d) risks (and cards).

### The 2004 Act

13. Section 7(2)(d) of the Fire and Rescue Services Act 2004 states:

#### *7. Fire-fighting*

*(1) A fire and rescue authority must make provision for the purpose of -*

*(a) extinguishing fires in its area, and*

*(b) protecting life and property in the event of fires in its area.*

*(2) In making provision under subsection (1) a fire and rescue authority must in particular*

*...(d) make arrangements for obtaining information needed for the purpose mentioned in subsection (1) ...*

14. This provision may appear a little broader in scope in the sense that, unlike the 1947 Act, it does not directly state what information should be collected. That being said, the explanatory notes to the legislation essentially replicate the section 1(1)(d) duty, in that they state:

*"Section 7 re-enacts the existing statutory duty for a fire and rescue authority to plan and provide arrangements for fighting fires and protecting life and property from fires within its area. A fire and rescue authority is required to secure the provision of sufficient personnel, services and equipment to deal with all normal circumstances, as well as adequate training. A fire and rescue authority must also put in place effective arrangements for receiving and responding to calls for help and for obtaining information which it needs to carry out its functions; the latter might include, for example, information about*



*the nature and characteristics of buildings within the authority's area or availability of and access to water supplies.”<sup>18</sup>*

15. The duty was subsequently restated in the second<sup>19</sup> and third<sup>20</sup> National Frameworks. It was also referred to in the Chief Fire and Rescue Adviser's *Operational Assessment of Service Delivery* (OASD) Toolkits<sup>21</sup>, published by the Department for Communities and Local Government (DCLG) (subsequently Communities and Local Government (CLG)) in 2006<sup>22</sup> and 2009<sup>23</sup>. None of these publications contained any further guidance on what information FRSs were required to collect under the new statutory provision, and did not give any guidance as to whether or how personnel should be trained to carry out visits under section 7(2)(d).

#### Provision of Operational Risk Information System (PORIS) Guidance (2012)<sup>24</sup>

16. In 2012, DCLG published what was the first substantive guidance document for the management of operational risk. The impetus for change may have been a number of firefighter fatalities over the previous few years, as well as the conclusions of a 2009/10 thematic review into the management of operational health and safety by the HSE.<sup>25</sup> The HSE review was critical of inconsistencies in FRSs' risk information systems, and consequently recommended the production of “*national guidance on the classification, collection, and dissemination of operational risk information*” (Section 3.4.7).
17. As I have explained, until the PORIS Guidance, FRSs had been directed to collect information primarily to inform first responding crews, with the emphasis of the relevant guidance being on simplicity and brevity. This had not substantially changed for decades, either under the old section 1(1)(d) or under section 7(2)(d). The PORIS guidance, on the other hand, made it clear that the role of 7(2)(d) risk information and familiarisation visits was now materially different. In my view, the PORIS guidance effectively redefined the section 7(2)(d) duty.

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<sup>18</sup> See also Fire and Rescue Service Circular (FRSC) 38-2004, the Circular that introduced the Act to FRSs (Section 3.4, p.4, describes Section 7 of the FRS Act 2004) {SMC00000033}.

<sup>19</sup> National Framework 2006, section 3.3, p.24.

<sup>20</sup> National Framework 2008, section 1.18, p.16.

<sup>21</sup> The Audit Commission took responsibility for performance assessment of Fire and Rescue Services in 2005. As part of this, they developed an *Operational Assessment of Service Delivery* (OASD) Toolkit, which essentially replaced the Expectations Manual referred to above.

<sup>22</sup> DCLG *Fire and Rescue Operational Assessment of Service Delivery Toolkit and Guidance*, July 2006 p.33.

<sup>23</sup> CFRA *Fire and Rescue Operational Assessment of Service Delivery Toolkit and Guidance*, April 2009, p.38.

<sup>24</sup> Fire and Rescue Service Operational Guidance – Operational Risk Information (“PORIS Guidance”), DCLG, March 2012, {HOM00045364}.

<sup>25</sup> *The Management of Health And Safety in the GB Fire and Rescue Service – Consolidated Report*, HSE (October 2010) {CWJ00000022}. See Section 1.8 (p.3) for overview of firefighter fatalities that influenced the approach of the review and see Section 3.4.7 (p.14) for recommendations. A joint position statement published in 2016 by the Fire Inspectors/ Fire Advisers of the UK and the HSE referred back to the HSE's recommendations and repeated the need for individual FRSs to have adequate systems in place to ensure that sufficient operational risk information is collected and maintained, *Health and Safety In The Fire and Rescue Service – Embedding Lessons Learned* (2015), p.2 {HOM00032746}.

18. Under the PORIS guidance, the primary aim of the collation of operational risk information remains to provide timely and relevant information to personnel involved in command and incident management.<sup>26</sup> However, PORIS introduced a more sophisticated risk information management system, within which it was now necessary to collect and evaluate a greater range of information in order to carry out a more precise analysis of the level of risk, applying a set Risk Matrix, to six, specific risk groups (including firefighters).<sup>27</sup> As part of this, a risk grading (from 1-5) is selected, which then determines the risk management processes to mitigate or manage the risk presented to one or more of those six groups by the premises in question. For the lower levels of risk (1 and 2), basic information and SOPs would continue to be all that was necessary. But at higher levels (3 and certainly 4), the risk would need to be mitigated by tactical information plans, in addition to appropriate site specific risk information, generic risk assessments, and standard operating procedures. Level 5 risks may entail a need for multi-agency plans (Section 10.33).
19. I have mentioned that, previously and generally speaking, no training was considered necessary to undertake section 1(1)(d) visits (and also section 7(2)(d) visits). In my view this is likely to be because the nature of the information collected was considered to be straightforward and factual, requiring little analysis. In contrast, Section 9 of the PORIS guidance identified a substantial training requirement, stressing that the quality of information available as part of the risk information management system is dependent upon the competence of the personnel undertaking the risk assessment. So, the personnel undertaking the risk information visits – namely, operational crews – should have the necessary skills (in other words, be trained) to undertake the work. I would add that Section 9 re-emphasises the original intention and purposes of collecting information, namely, to inform action that should be taken as part of an emergency response (9.9). It also stresses the continuing need to use operational risk information during all training and exercises and to ensure that operational personnel are able to develop their skills in using the information in the operational environment (Section 9.12).
20. PORIS strongly recommends<sup>28</sup> the adoption of a risk information management system, comprising a five stage model, which it describes in detail in Section 10. The same, broad stages are contained in the LFB's policy on Management of Operational Risk (PN800),<sup>29</sup> that was in force at the time of the Grenfell fire and which I describe in more detail shortly. That being said, I do consider it helpful to provide an overview

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<sup>26</sup> See, for example, PORIS Guidance {HOM00045364}, p.46.

<sup>27</sup> PORIS Guidance {HOM00045364}, Section 10.5, pp.41-42 and see also Appendix B1 - B6.

<sup>28</sup> Section 10.2 of PORIS {HOM00045364}, p.40, states that individual Fire and Rescue Services are free to develop their own systems for the management of operational risk information. However, it is suggested that departure from the principles contained in this model should only be undertaken following a risk based assessment of an alternative, the outcome of which clearly illustrates that the legal responsibilities of the Fire and Rescue Authority have been met. In the absence of any form of external inspection or public reporting of performance until 2018, I cannot say for sure how many Fire and Rescue Services adopted the PORIS guidance in whole or in part or determined their own approach. Certainly, a number of Fire and Rescue Services did adopt the guidance.

<sup>29</sup> {LFB00000705} which was issued in July 2012 and last reviewed in August 2015, prior to the fire. All LFB policies are abbreviated as "PN" for "Policy Number."

diagram of the system, taken from the PORIS guidance.<sup>30</sup> The evident complexity demonstrates how the information gathering requirement under the PORIS guidance is far removed from the brevity and simplicity that were the hallmarks and virtues of the preceding approach.

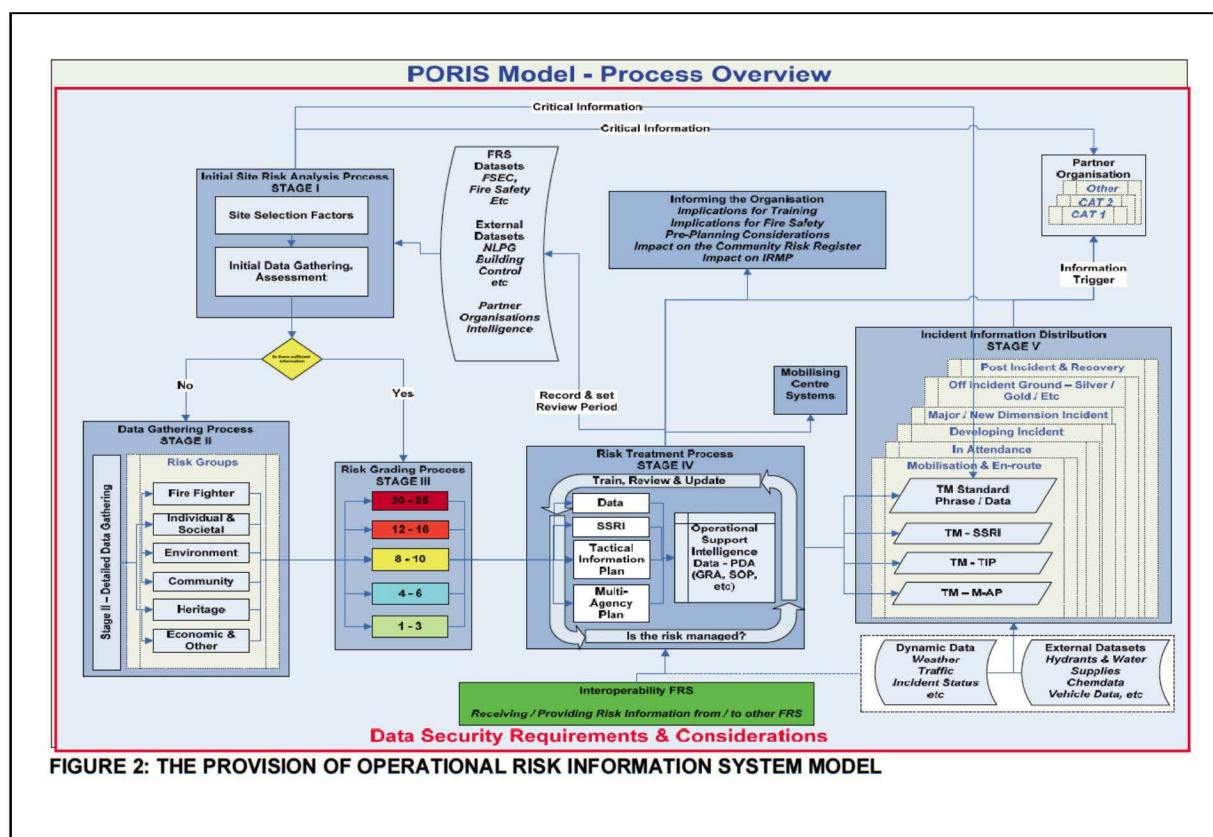


FIGURE 2: THE PROVISION OF OPERATIONAL RISK INFORMATION SYSTEM MODEL

Figure 1 PORIS Overview (p.43)

21. It will be apparent from this that it is my view that PORIS fundamentally changed both the nature and the extent of the risk information that personnel were required to collect, and what they were required to do with that information thereafter. This is despite the fact that the purpose of collecting this data (namely, to ensure that Incident Commanders could be provided with relevant and accurate information at an incident) ostensibly remained the same. PORIS now required operational personnel to shift from collecting relatively small amounts of information specific to firefighting, to becoming more rounded risk assessors, and to assemble and evaluate a much greater range of information. Having collected that information, crews must then carry out a more precise analysis to interpret the information collected and make qualitative judgements about the level of risk, applying a Risk Matrix to six specific risk groups (namely, firefighters; individual and societal; environment; community; heritage; and economic).<sup>31</sup> It is this risk grading that subsequently determines the treatment of the risk, including what type of information must be entered on the risk database (including Site Specific Risk information (SSRI) and/ or

<sup>30</sup> PORIS Guidance {HOM00045364}, p.44.

<sup>31</sup> PORIS Guidance {HOM00045364}, Section 10.5, pp.41-42 and see also Appendix B1-B6, pp.60-61.

tactical plans), the frequency of visits, and the need for exercises to take place at the premises.

**What information is required by section 7(2)(d)?**

22. Appendix C of the PORIS document identifies the information that FRSs are advised to collect for the purposes of section 7(2)(d). It runs to 20 pages and appears at pages 75 to 94 of the PORIS Guidance. The information listed there is wide-ranging and varied (including, for example, basic data such as the address and occupancy details of a building; water supplies and hazardous processes; the construction type of a building including any cladding materials and internal linings).
23. In my view the guidance in this respect is appropriate and comprehensive: this is the information to which crews must have regard when collecting operational risk information. With that being said, it should also be stressed again that it still remains the responsibility of each FRS to identify and determine the information they need to collect, since PORIS is guidance only.
24. Another form of national guidance is also relevant, namely Generic Risk Assessments (GRAs). Most particularly, the 2014 version of GRA 3.2 on Fighting Fires in High Rise Buildings (the drafting of which the LFB were involved in and which I am aware will be considered in Module 6 of Phase 2 of the Inquiry).
25. The 2014 version of GRA 3.2 refers to the collection of operational risk information under section 7(2)(d) as a “key control measure” that underpins pre-planning for fires in high-rise buildings, and it goes on to list 13 specific items that must be considered:
  - *access for the siting of appliances, firefighters and equipment*
  - *availability of information for firefighters*
  - *height of the building (to assess impact on firefighting equipment and on the physiological effect on firefighters)*
  - *the number and location of lifts suitable for use for firefighting purposes (noting not all lifts provide the necessary protection to meet the most recent standards)*
  - *evacuation protocols for the building (such as a “Stay Put” policy, phased or full evacuation. Please see Approved Document B paragraph 4.27 for further information regarding phased evacuation)*
  - *location, control and status of any fixed installations and fire suppression systems and the facilities provided for the Fire and Rescue Authority, such as firefighting shafts, rising mains and ventilation systems*
  - *the layout, compartmentalisation and size of the building, including specific features such as atria or security features such as grilles or reinforced doors*
  - *occupancy and use profile (demographic and socio-economic factors and changes which relate to the time of day and/or day of the week)*
  - *effectiveness of communications and identification of any radio ‘blind spots’*
  - *building construction features, such as the presence and location of maisonette- style construction, sandwich panels, timber framing, cladding*



*systems, surface mounted trunking, ducting and voids, in addition to features which present a specific hazard, such as asbestos*

- *evidence of poor housekeeping such as hoarding, obstructed escape routes and storage of combustible materials in escape routes*
- *location, nature and features of known hazards, such as high voltage electricity and storage of hazardous materials*
- *Fire and Rescue Authorities must ensure the compatibility of equipment with the fixed installations provided.*<sup>32</sup>

26. I will address the specific items listed in the GRA in more detail below, when I consider the LFB's policies. But, for present purposes, I would simply note that, in my view, the correct approach to carrying out a section 7(2)(d) visit in a high-rise building would involve looking at all these items.

27. The LFB's Policy 800 on Management of Operational Risk represents the local application of the overarching PORIS principles, and identifies the general approach to the information which it considers should be collected in all buildings as part of section 7(2)(d) visits. The specific information that crews are required to collect at high-rise premises is set out in PN633. I will consider both these policies.

### LFB's policies on section 7(2)(d) visits

#### PN800 – Management of Operational Risk Information<sup>33</sup>

28. The summary of the five staged process for gathering and managing operational risk information is set out in Section 3 of PN800 (paras 3.1 to 3.11) (Stage 1: identification of premises that might potentially give rise to hazards and risks; Stage 2: initial site analysis; Stage 3: information gathering, by a site visit; Stage 4: risk assessments; Stage 5: completing the Operational Risk Database). The guidance that then follows relating to each of those stages largely tracks the PORIS guidance.

29. Fire Safety Inspecting Officers are listed as a potential source by which premises may be identified, and paragraph 5.3 states that Policy 784 (Notification of Fire Safety Information)<sup>34</sup> provides the process to follow in that scenario. I have reviewed Policy 784, which sets out the steps that both operational and fire safety personnel should take when one notifies the other of relevant risk information. The policy provides a short list of examples of the type of information to which it applies, but states that this list is not exhaustive. It refers briefly and in passing to the LFB's corresponding Fire Safety Guidance Note (FSIGN113)<sup>35</sup> in Section 7 (which largely replicates PN784), but it does not refer back to PN800. Given the repeated requirement to integrate operational risk information systems with fire safety systems,<sup>36</sup> the circuitous route

<sup>32</sup> GRA 3.2, p.16 and p.18 {LFB00001255}.

<sup>33</sup> {LFB00000705}.

<sup>34</sup> {LFB00012734}.

<sup>35</sup> {LFB00118198}. This does not refer to PN800 either, though it does refer to PN784.

<sup>36</sup> Section 8.13 of the PORIS Guidance {HOM00045364}.

by which these key systems connect is confusing. Phase 2 should examine the extent to which information is shared in this way.

30. Stage 4, which requires a premises risk assessment (PRA) to be conducted based on information collected during the visit, is the stage that seeks to give effect to the PORIS risk matrix. PN800 provides a PRA template 'sheet' that crews are directed to complete, as well as detailed explanatory guidance to assist the process by walking the reader through the different sections and codes of the PRA. Guidance is also given on how the Operational Risk Database (the ORD) should then be completed (Stage 5), once the PRA has been carried out.<sup>37</sup>

#### Policy 633 – High rise firefighting<sup>38</sup>

31. PN633 is the LFB's policy document that sets out the procedure for search, rescue and firefighting operations at high-rise buildings. It has already been considered in detail as part of Phase 1, but in brief overview, it covers:
  - (i) The specific types of hazard that may be encountered at incidents involved high-rise premises (Section 2);
  - (ii) The firefighting facilities that are required to be present in high-rise premises (Section 3);
  - (iii) Planning for a fire at high-rise premises (Section 4). Notably, this section refers expressly to the need to gather operational intelligence in accordance with PN800 (4.1). Personnel are also directed to "*assess, practice and confirm*" the tactics and resources required to mount safe rescue and firefighting operations, which includes planning for fire spread beyond the compartment of origin and the potential for multiple rescues (4.8 sub-paragraph (a)). Section 4 also emphasises the need to train and exercise at such buildings as part of borough training plans (4.9). The reader is then referred to Appendix 1 of the Policy, which is stated to provide further guidance on the type of information which should be gathered during section 7(2)(d) visits to high-rise premises. I consider Appendix 1 below.
  - (iv) Operational procedures that must be followed en route to an incident, on arrival, and, of course, the many procedures associated with the incident itself (Sections 5, 6 and 7). Evacuation is considered in Section 7.45 - 7.47 and Fire Survival Guidance (FSG) in Section 7.48 - 7.51.
32. Appendix 1 of PN633 is my focus here, as this sets out a list of 22 specific items that the LFB directs its operational crews to consider when conducting section 7(2)(d) visits in high-rise buildings. I would agree with the Chairman's finding that the language used in Appendix 1 makes the list mandatory, rather than mere guidance;

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<sup>37</sup> PN800 Appendices 1, 3 and 4.

<sup>38</sup> {LFB00001256}.

*“should ensure they are familiar” means “must ensure they are familiar”.*<sup>39</sup> The Appendix’s list of items is wide-ranging. It does not replicate the precise language of GRA 3.2, but it broadly mirrors it; save that, notably, the list in GRA 3.2 specifically makes reference to *“cladding systems”* as an example of one of the *“building construction features”* that should be considered, whereas the PN633 list does not.<sup>40</sup> Cladding is also referred to expressly in PORIS Appendix C.<sup>41</sup> Otherwise, the PN633 Appendix 1 list does include significant items that were a factor in the Grenfell fire, including *“the likelihood and impact of any fire spread beyond the compartment of origin and the potential for multiple rescues”* and *“any building design features which may promote rapid or abnormal fire spread such as sandwich panels...or voids.”*

33. In my view, both PN800 and Appendix 1 of PN633 effectively reflect the requirements of PORIS and, in turn, of section 7(2)(d). The problem is more that the system that is provided for in these documents is not being followed in practice, probably due to a lack of training and understanding, as well as deficiencies in performance management. My only criticism of the policy documents is that they could be more user-friendly, as I think that the way that PN800 sets out the staged process that is to be adopted could be easier to follow. Similarly, whilst the list in Appendix 1 of PN633 is comprehensive and appropriate, there is no reference back to PN800 or any explanation given as to how these factors should inform the risk rating and the details that need to be recorded on the ORD.

### Section 7(2)(d) visits in practice: how should a Fire and Rescue Service go about obtaining information?

34. There are two dimensions to the question of how a FRS should go about obtaining information; the first relates to the identification of premises to which the duty might apply, and the second relates to the collection of information at actual premises concerned, and I will consider both.

### Identifying premises that require a visit

35. I have explained already that FRSs have been undertaking risk information collection for decades and, accordingly, have assembled local registers of premises and sites to which the duty applies. So, the majority of FRSs’ databases and registers of risks are a legacy of that knowledge. On occasions, risks will be removed, but the nature of the premises and sites involved – large buildings, hazardous materials installations, manufacturing plants etc – means that the risks tend to be permanent, and the sites and premises remaining in situ. It is more common, therefore, for risks to be added as a consequence of construction and development, or as a result of events or incidents that create a need to take account of new risks within an FRS’s operational risk system or register. In London, this is the Operational Risk Database (ORD).

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<sup>39</sup> Phase 1 Report, Vol IV, 27.22.

<sup>40</sup> GRA 3.2, p.18 {LFB00001255}.

<sup>41</sup> PORIS Guidance {HOM00045364}, p.85.

36. In PN800, the LFB identify that knowledge of new premises to which the duty might potentially apply could come from seven potential sources (attendance at incidents; Fire Safety Officers (FSOs); local knowledge; Home Fire Safety Visits; the public; partner agencies; visual audits) (Para 5.1). There is a more extensive list of potential sources identified in the PORIS guidance in Table 1 (Section 8.21), which also catalogues a number of ‘partners’ – such as the Police, Local Authorities, the MOD, the Environment Agency, the HSE, etc – and identifies the type of information these partners might provide. The table then indicates what type of risk information might come from which sources. Notwithstanding the appearance of multiple data sources, my practical experience is that, across FRSs, there remain two primary sources of risk information; and my view of the evidence I have seen to date indicates that this is also the case in the LFB.
37. The first source is the awareness and knowledge of local crews, alongside station or borough commanders, who are expected to be alert to the changing landscape of their local area, and to identify new, potential risk sites as part of their day to day operational responsibilities.<sup>42</sup> Incidents form an important aspect of this local intelligence, which is the reason why it is important that the local FRS operational information system takes account of incident debriefs.<sup>43</sup> In this respect, it is worth noting that operational debriefs are not directly referred to in PN800. Moreover, the LFB have a specific policy for operational improvement, which stresses the importance of *“identifying operational issues...that have the potential to impact on operational staff or the organisation.”*<sup>44</sup> But there is no mention made of the implications of Section 7(2)(d) or, for that matter, PN800.
38. The other major source of information continues to be Fire Safety Officers, as I have already identified and as are also referred to in PN800, hence the need to ensure the integration of fire safety risk management data and operational risk information data. I will say more about the role of FSOs in the next section.

#### Obtaining information at premises to which the duty applies

39. It should be remembered that the crux of the section 7(2)(d) duty continues to reflect a very real and practical need; namely, obtaining information for firefighting purposes. It is vital, in my view, that this central point does not become obscured. It remains equally essential, in my view, that however information comes in to an FRS, it should still be the local crews that take ownership of managing that risk information, which cannot be a desk-top review. This should still entail site visits, undertaken by station personnel, engaging in a two-way consultation with the occupier of the premises or site and completing a risk assessment (in London’s case, PRAs, as PN800 requires) in an informed, comprehensive and intelligent way.

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<sup>42</sup> See for example PN698, Borough Training Plan, {LFB00060216}, especially Section 2 Borough Profile and Section 3 Borough Risk Inventory.

<sup>43</sup> PORIS Guidance {HOM00045364}, 5.9.

<sup>44</sup> PN825, {LFB00055170}.



40. With this in mind, I acknowledge fully that the range and complexity of the types of premises to which section 7(2)(d) might apply – especially in urban/city settings – is extensive. So, there is a need for clear guidance, supported by good training. But there is also a need to recognise that the ability to evaluate risk, and to understand the correct information to obtain in light of the complexity of some sites and premises, often requires specialist knowledge. Hence, there is a need to ensure that there is specialist advice available to crews undertaking risk information visits, from Fire Safety Officers.<sup>45</sup> These officers should have a more extensive and detailed understanding of building construction and building materials, as well as knowledge of recent fires locally, nationally and even internationally. By way of illustration, the ‘Tall Buildings’ presentation to which many witnesses were referred during the Phase 1 hearings was prepared for fire safety staff (and is not likely to have been shown to operational staff at all, given that none of the Phase 1 operational witnesses recalled seeing it).<sup>46</sup>
41. FSOs also undertake a fire authority’s regulatory role, and therefore should have current knowledge of any risk factors that arise from local enforcement issues that may need to be taken into account as part of operational risk information gathering.<sup>47</sup> FSOs will be familiar with fire protection arrangements, occupancy, and use, and will be well acquainted with building systems and infrastructure, in particular utilities and fixed installations, many of which are increasingly sophisticated and interdependent. They can ensure crews have a good awareness of firefighting facilities such as firefighting shafts, sprinkler systems or automatic ventilation systems. Primarily, therefore, an FSO’s role is to provide advice, guidance and support regarding the most up to date understanding of fire risk, alongside the specific fire safety and fire protection provisions incorporated into premises concerned.

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<sup>45</sup> It should be remembered that there are several dimensions to operational risk, so, in some cases, specialist advice may encompass non-fire specialisms such as hazardous materials or environmental management so, on occasions, this will include a need to engage with external bodies or agencies in support of in-house expertise.

<sup>46</sup> {LFB00003521} is the Tall Buildings presentation to which LFB witnesses were taken during their Phase 1 oral evidence, and is dated 13<sup>th</sup> July 2016 but contains reference to the 20 pump façade fire at Shepherd’s Bush in August 2016. Lyndsey Seal, a senior fire safety engineer for the LFB, has explained in her Phase 2 witness statement that this presentation was based on an earlier presentation that was prepared as CPD for LFB’s Fire Engineering Liaison Officers (FELOs – which are a type of fire safety Inspecting Officer) on 13<sup>th</sup> July 2016 {LFB00032316} paras 34-38. The material for the July presentation had been obtained by SM David Green who had attended a seminar hosted by NHBC entitled ‘Facades to tall buildings.’ Following the Shepherd’s Court fire, the LFB presentation was updated and the revised version was presented to Senior Fire Safety Officers, again by SM Green, at an event on 4<sup>th</sup> October 2016: see SM Green’s witness statement, {LFB00032917}. There is no indication in either Lyndsey Seal’s or in SM David Green’s witness statement that the material was ever presented to operational personnel, which is consistent with the Phase 1 oral evidence.

<sup>47</sup> I am aware that the Inquiry will be examining an issue associated with flat entrance ‘fire doors’, and questions related to the ownership and responsibility for their integrity in the context of fire risk assessment. The detail of this particular issue is outside the scope of my report, but, from an operational risk point of view, it provides a good example of the kind of contemporary knowledge in the possession of FSOs, and that would be of relevance to operational crews during section 7(2)(d) visits, bearing in mind that Appendix 1 of PN633 identifies *“the likelihood and impact of any fire spread beyond the compartment of origin and the potential for multiple rescues”* as well as other aspects that are affected by the performance and integrity of flat entrance (fire) doors.

42. Consequently, I would have expected that the nature of the risk in London – the high number of complex, high-rise buildings (and which account for around two thirds of fires in London) – would entail regular and close working between FSOs and operational crews to assess these risks. Moreover, I would have anticipated a specific focus on high-rise, purpose-built flats, given the implications of the Lakanal House incident (which, as indicated, I am aware will be considered in Module 6 of the Inquiry).
43. It is a surprise to me, therefore, that PN633 makes just two passing – and brief – references to the role of FSOs in section 7(2)(d) visits at high-rise premises. Section 4.6 states that:

*“Planning must consider the knowledge and understanding of fixed installations and how they can assist fire and rescue operations. Where required, advice and guidance should be obtained from Fire Safety Officers (FSO) regarding fixed installations provided, such as sprinklers, ventilation systems (including manual over-rides) and rising mains. FSOs can be invited to familiarisation visits.”*

44. There is no further guidance as to how operational crews should determine that advice or guidance from an FSO is required in relation to fixed installations, nor the circumstances in which FSOs should, or indeed must, be invited to attend visits. In my view this is a material omission.<sup>48</sup>
45. Appendix 1 then also requires crews to:

*“Inform the building owner of defects or safety issues concerning firefighting facilities and report these to the Resource Management Centre as an alleged fire risk. A FSO will be informed and determine the appropriate course of action.”*

46. This is an unexpectedly loose arrangement, and I would have expected PN633 to define a more direct relationship with the Fire Safety Department and to explain how such information sharing and risk notification should work. So far, I have seen no evidence of how the exchange of information between fire safety and operational

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<sup>48</sup> I note that the LFB’s Borough Training Plan for Kensington and Chelsea, which I will consider in more detail later on in this report, states that “each April the Borough Commander, in consultation with the Station Manager Fire Safety, will decide what statutory fire safety visits will be devolved to stations.” It also states that each station has a ‘buddy’ Inspecting Officer who can provide training to station personnel, and accompany them on specific inspections if required: see for example {LFB00055458}, p.22. My understanding of this system is that it requires station-based personnel to assist with and possibly even carry out fire safety inspections under the RRO. I have not been able to find any reference to the reverse, that is, a system that requires fire safety personnel to assist with and/or carry out section 7(2)(d) visits. The same section of the training plan introduces a list of premises in the borough that have “engineered safety solutions”, indicating that specific visits should be accompanied by a Borough FSO to explain the reasons for the measures. My interpretation of this is that these visits fulfil a discrete purpose, rather than fulfilling the general section 7(2)(d) duty. In any event, Grenfell Tower is not on the list of buildings with engineered safety solutions on any of the RBKC plans that I have seen.

crews operates in practice, and this is an aspect that should be considered as part of Phase 2.

### **What should a Fire and Rescue Service do with that information once obtained?**

47. In simple terms, I would expect an FRS to follow the principles of the PORIS guidance once they have obtained the information. Specifically, they should have a risk database in place (as indicated, in London this is the ORD), supported by robust information and performance management systems that ensure the visits scheduled to occur do, in fact, take place; and these systems should be regularly audited to ensure the systems themselves are robust and that data is relevant and accurate.
48. Second, I would expect the FRS to have provided the means to ensure that the correct information is made available to the first responding crews, and in particular, to the first commanders at an incident. Virtually all FRSs now use Mobile Data Terminals (with capability to print), which has become the usual way for transmitting operational risk information;<sup>49</sup> but I would expect an FRS to have considered the need for fallback arrangements in addition to this, in the event that the MDT is not available for any reason.
49. Finally, I would expect an FRS to use this risk information to design and organise its provision of training at risk sites; specifically, an FRS must ensure that any individual tactical plans developed for particular risk sites are made the subject of training exercises to be carried out at those sites. In support of this, I would also anticipate local crews engaging in discussion around the operational implications of the information gathered and, where relevant, receiving lectures or undertaking specific training packages associated with the risk.<sup>50</sup>
50. In relation to this need to exercise at risk sites, I would wish to draw the Inquiry's attention to the RBKC Borough Exercise Plan including its arrangements for Grenfell Tower.
51. Borough Training Plans are assembled by borough commanders in order to address the local training needs of their particular area, based on the specific local risks that have been identified. The LFB's Policy 698 on Borough Training Plans<sup>51</sup> sets out the different types and frequency of training to be carried out at borough level, depending on the level of risk within that borough (Section 4.1). Section 3.5, entitled "*Operational Risks 7(2)(d), Operational Risk Database (ORD)*", refers to station diaries, and indicates that these contain a master schedule for premises that require routine visits, as well as premises that require an entry to be made on the ORD. The text also states that each such premises requires a "*training solution*" to be identified

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<sup>49</sup> See HMICFRS State of the Fire Service Report (2019), p.97 {SMC00000043}. This confirms that risk information is usually provided on mobile data terminals, though – surprisingly to me – the report also indicates paper files are still used.

<sup>50</sup> See also FSC 16/1989, p.18, para 14, as already considered.

<sup>51</sup> {LFB00060216}, issued in February 2010 and last amended in October 2015. I understand that this version of the Policy was current at the time of the Grenfell fire.



and recorded on an inventory; which I interpret to mean, a specific form of training that addresses the particular operational risks present at that site, which could potentially include training to be carried out at the premises (as per section 4.1).

52. I have reviewed the RBKC plans over a 4-year period between 2013 and 2017<sup>52</sup> and identified that Grenfell Tower is listed as a risk site to which section 7(2)(d) applies, and for which the “*training solution*” is an “*exercise/training visit*.” However, Grenfell is erroneously described as a Hospital, and the risks identified and policies to be exercised all reflect the risks associated with a typical hospital (e.g. PN602 on Radiation; PN707 on Infection and Infectious Diseases, etc). The fact that this error is repeated over four successive borough training plans suggests that either exercises occurred at the tower but were not recorded and no subsequent attempt was made to update the borough training plans, which would be a significant deficiency. Or, more likely and more seriously in my view, the programmed exercises and visits did not happen, because any attempt to organise an exercise to test these policies would make it immediately apparent that there was a mistake in the information recorded. I should add that there are other risks that appear to be wrongly identified in the same plan.<sup>53</sup> This raises fundamental concerns about the robustness of the whole section 7(2)(d) exercise regime, intended to test tactical plans and Site-Specific Risk Information (SSRI). To illustrate the point, I have reproduced an extract from the 2016/2017 plan below, but this aspect requires examination during Phase 2.

|                                  |  |                             |   |
|----------------------------------|--|-----------------------------|---|
| Holland & Holland Ltd            | 7(2)d<br>Inspection                              | chemicals,<br>basement life | PN 803,PN796 Hazmats PN733 Basement<br>procedure  |
| Grenfell Tower                   | High Rise<br>Premises 7<br>(2)d                  | Hospital                    | Exercise/Training visit SOPs PN 602 Radiation,<br>PN707 Infection and infectious disease,PN 98<br>Biological risks,pn 796 Hazmats,PN 482 EPD,PN<br>415 Cordons NICs PN 790 FSG Piped oxygen |
| White Knight Laundry<br>Services | CRR + 7(2)d<br>inspection<br>(formerly<br>I(i)d) | cylinders                   | SOPs  |
|                                  | CRR + 7(2)d                                      |                             |   |

Figure 2: Extract from 16/17 RKBC Training Plan - prepared by GM Davies

<sup>52</sup> {LFB00000810} (2013/2014), {LFB00000853} (2014/2015), {LFB00025986} (2015/2016), {LFB00055458} (2016/2017).

<sup>53</sup> For example, “Burlington Danes School” is listed as a “Hospital” and the “London Underground Ltd” is identified as a “Hospital.” It is possible there are explanations for these entries – for example, it may be the Underground passes underneath these buildings – but my initial view is that these entries are also erroneous.

Further comments on section 7(2)(d) visits in practice within LFB

53. I have established that the requirements of the PORIS Guidance placed a new and significant burden on operational crews in every FRS, but especially in London, given the volume of risk sites in the capital city. I have also identified how the PORIS guidance, in Section 9, stresses the need to ensure the competence of the personnel undertaking risk assessment and risk information visits, by the provision of training.
54. In a presentation given by AC Brown to the Lakanal House Working Group in September 2013, it was noted that the new PORIS guidance had been reviewed and that the LFB's Corporate Management Board (CMB) considered that LFB's processes were "*compliant*." The presentation posed the question "*Are crews doing it right?*" and indicated that there was an intention to "*audit consistency of risk identification and compliance with policy*" and to "*refresh crew MDT/ ORD training*".<sup>54</sup> This will clearly need to be considered as part of Phase 2.
55. In the absence of any clear evidence, at this stage in the Inquiry's investigations, as to what the LFB did to train its personnel on section 7(2)(d) processes, and in particular the more comprehensive evaluation that is required by PORIS, it is difficult to assess how well the LFB's operational crews understand what is required of them. It was the Commissioner's evidence in the Phase 1 hearings that crews were not trained in this respect,<sup>55</sup> but I have seen some basic training material that indicates that some form of section 7(2)(d) training did exist (whether or not it was delivered in practice).<sup>56</sup>
56. In any event, the (albeit relatively limited) documents that I have seen relating to the ORD entries for Grenfell Tower, raise some clear concerns about the comprehensiveness of the section 7(2)(d) visits that were carried out at Grenfell Tower, as has already been noted in the Phase 1 report.<sup>57</sup> I would further note that the apparent discrepancy in the PRA for the tower, which identifies a risk of "*hidden voids which may aid fire spread either through construction or refurbishment or age of premises*", does not appear on the ORD entry.<sup>58</sup>
57. I would also wish to draw the Inquiry's attention to two pieces of evidence that I consider relevant to this issue.

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<sup>54</sup> {LFB00032162}, p.2, p.28.

<sup>55</sup> Phase 1 report, Vol IV, 27.24.

<sup>56</sup> For example, the trainer guide that is exhibited to Gordon Reynolds' second witness statement: {BAB00000058}.

<sup>57</sup> {LFB00003116} and see Phase 1 report, Vol IV, 27.30, which notes: (a) the lack of any plans of the tower on the ORD; (b) that the only photograph of the tower was a small aerial image which gave no information about the building or access to it; (c) that the number of floors was incorrectly recorded as 20; (d) the lack of any operational contingency plan; and (e) out of date emergency contact details. See also {LFB00004825}, witness statement of WM Ricketts, describing an attempt to organise an exercise at Grenfell Tower in the context of section 7(2)(d) and setting out the type of information collected.

<sup>58</sup> {LFB00003596} p.8.

58. I have seen a briefing paper dated 11 December 2013 that was compiled as part of a review of the ORD.<sup>59</sup> This ORD review was carried out with a view to creating an inspection regime targeting high priority buildings, further to the recommendations made by the Coroner following the Lakanal House inquests. (Specifically, Action 18b on the LFB's consolidated action plan: see Appendix 1 of the briefing paper.) The review was requested by Deputy Assistant Commissioner George (via Assistant Commissioner Brown) and assigned to Group Manager Elwell in the first instance (the author of the briefing paper), though DAC George also provides commentary on the work in his witness statement.<sup>60</sup> The briefing paper indicates that the review was instigated due to concerns at the apparently low number of entries on the ORD system (7,000). The review therefore set out to establish what premises were missing from the ORD, and to assess the quality of the existing entries. I am aware that this piece of work will be considered as part of Module 6 in relation to the LFB's response to the fire at Lakanal House. But I consider that it is relevant for present purposes, as it demonstrates the LFB's awareness that there were potential issues with both the quality and the completeness of the information stored on the ORD.
59. I have also seen a report dated 17 September 2014 from the Head of Operational Procedures to the Operational Directorates Coordination Board (ODCB) following the recent publication of the revised Generic Risk Assessment 3.2.<sup>61</sup> Again, I am aware that the Inquiry will be considering the LFB's role in the review of the GRA as part of Module 6. The principal aim of the report was to seek approval to change the mobilising requirements that were considered necessary as a result of the proposed amendments to the version of PN633 that was current at that time, and which was subsequently replaced by the version that was in force at the time of the Grenfell fire. The report includes as an Appendix the proposed revised draft of PN633 that the ODCB was being invited to consider. The report also informed ODCB of the results of the 'gap analysis' that had been undertaken by the LFB between the GRA and the then current PN633, in order to identify any amendments that were required to ensure that the policy sufficiently captured the 'new' hazards identified in the GRA. The gap analysis identifies 17 such 'new' hazards, including "*wall panel failure*", "*construction technique*", "*downward fire spread*", "*fires on multiple floors*" and "*evacuation*", and explains that these had been taken into account in the draft revised PN633 and associated risk assessment.<sup>62</sup> However, there is no explicit discussion in the report as to the impact of these so-called 'new' hazards on section 7(2)(d) visits in high-rise buildings, nor whether there was a need to re-examine PN800, which is not directly mentioned. This is all the more surprising given that Appendix 3 to the report provides a comprehensive risk assessment for the introduction of the revised high-rise policy, and a large number of the control measures identified include "*planning including 7(2)(d) where necessary.*" The extent to which the LFB considered the wider implications of GRA 3.2 and these 'new' hazards on their section 7(2)(d) obligations, in the context of the high-rise policy

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<sup>59</sup> {LFB00032825}.

<sup>60</sup> See the witness statement of DAC Philip Thomas George {LFB00032823}, paras 69-82.

<sup>61</sup> {LFB00032741}.

<sup>62</sup> {LFB00032741}, 'Analysis of GRA', pp.2-3.

review described in this report, therefore, is a matter that should be considered during Phase 2.

### Phase 1 report conclusions in relation to section 7(2)(d) visits

60. The Chairman made a number of findings in the Phase 1 report as to the LFB's approach to section 7(2)(d) visits:

- a. The Commissioner stated in oral evidence that it was not realistic to expect frontline firefighters to undertake the lengthy survey of the numerous different fire safety aspects of a high-rise building set out in Appendix 1 of PN633. Further, it was clear that as a matter of practice LFB officers conducting visits did not consider all of that list, but tended to concentrate on those items relating to the particular cause or event that had prompted the visit.<sup>63</sup>
- b. The North Kensington crews who carried out section 7(2)(d) visits to the tower before the fire failed to identify and correct inaccuracies in basic information relating to the tower itself (for example, that it had 25, including the basement, not 20, floors); they also failed to identify and make good deficiencies in the LFB's information, such as the absence of basic floor plans showing flat numbers and floor layouts.<sup>64</sup>
- c. The LFB had a "*narrow understanding*" of section 7(2)(d). Information about the materials being used in the cladding system could and should have been obtained direct from the TMO, which ought to have alerted senior officers to the possibility of a cladding fire.<sup>65</sup>

61. This led the Chairman to his overall finding that:

*"... section 7(2)(d) visits, as presently conducted by the LFB, are not fulfilling the purpose for which they are designed, namely, to collect information that allows the LFB to extinguish fires and to protect life and property."*<sup>66</sup>

62. I agree with the Chairman's overall finding, but I would add one additional comment to assist the considerations of Phase 2, which relates to the Chairman's view that the LFB had a narrow understanding of section 7(2)(d) and the need to obtain information from the TMO.

63. The content of PN800 suggests that the LFB had a good understanding that the application of section 7(2)(d) had broadened. The PORIS guidance and PN800 clearly identify the wide range of information that is required under the legislation, and encourage engagement with owners and occupiers of premises in order to discharge those duties; a requirement that has been in place for many years. Furthermore, the

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<sup>63</sup> Phase 1 report, Vol IV, 27.24-27.25.

<sup>64</sup> Phase 1 report, Vol IV, 27.28.

<sup>65</sup> Phase 1 report, Vol IV, 27.36-27.37.

<sup>66</sup> Phase 1 report, Vol IV, 27.29.



LFB carried out a review of the ORD following the Lakanal House fire and understood that there were substantial concerns with quality issues, supervision issues and training issues. Additionally, they evaluated the specific implications of the introduction of the revised GRA 3.2 in detail, having played a major role in the review and publication of that GRA. While they identified the need to modify PN633 to take account of the additional hazards specific to high-rise buildings, they appear not to have considered whether and if so how these changes altered the way that their section 7(2)(d) duty needed to be discharged at high-rise premises. This is despite the fact that the revised risk assessment identifies section 7(2)(d) visits as an important control and risk mitigation measure.

64. Therefore, in my view, it was not so much the case that the LFB had a narrow understanding of what is required by section 7(2)(d), because it had developed a comprehensive policy to meet those requirements. What was narrow, in my view, was the LFB's superficial approach to management systems to ensure that PN800 and Appendix 1 of PN633 were complied with on the ground, and its apparent failure to train and educate operational staff adequately, to ensure that they understand the requirements of section 7(2)(d) in the same way. There was also a failure to have in place the essential links between the fire protection/ fire safety arm of the organisation and the operational arm, and to ensure that the operational implications of new risks were fully evaluated and taken in to account.

#### **Practices followed in other Fire and Rescue Services under section 7(2)(d)**

65. In my view it is helpful to consider the practices that are followed in other FRs to discharge the section 7(2)(d) duty. This is for two reasons. First, it is apparent that the management of operational risk information remains a challenge for FRs generally, as was noted in the recent report by Her Majesty's Inspectorate of Constabulary and Fire and Rescue Services (England) (HMICFRS).<sup>67</sup> Her Majesty's Fire Service Inspectorate in Scotland (HMFSI) noted very similar concerns in its 2019 report on the Scottish Fire and Rescue Service's arrangements for the provision of Operational Risk Information.<sup>68</sup> In my view, therefore, it is relevant to consider, in the first instance, what kinds of difficulties are encountered by other Fire and Rescue Services that make the issue appear to be so difficult, and whether there are any common themes.
66. The second reason why it is helpful to consider practices followed elsewhere is that it may be that there are effective strategies that I consider could usefully be adopted by the LFB in order to improve its own performance in this area.

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<sup>67</sup> See HMICFRS's State of the Fire Service Report (2019) , p.24, p.86, p.96 and p.97 {SMC00000043}.

<sup>68</sup> HMFSI's Review of the Scottish Fire and Rescue Service's provision of operational risk information, Feb 2019 {SMC00000039}.



### Difficulties encountered by other FRSs

67. In my opinion and experience, there are four common difficulties that are encountered across FRSs generally:

- (i) Paperwork: The role of a firefighter, in essence, is a practical one that requires individuals to be able to use a wide range of technical equipment and to be proficient in operational firefighting techniques. It therefore tends to appeal to people whose inclination is towards a physical and practical career. Undoubtedly, firefighters must still be knowledgeable, but, at its core, being a firefighter is about applying practical skills and knowledge in a wide variety of hazardous situations. Paperwork is accepted as a necessary part of the role, but, if the purpose of that paperwork is ambiguous or unclear, it can easily be seen as an unwarranted distraction from what may be considered 'the real job', i.e. the operational function. In particular, the shift in the nature of the risk information required under PORIS has created a sizeable administrative burden, as well as a need to use technology in a more extensive way to collect and input data. For many firefighters, consequently, the purpose of collecting this array of risk information can easily be forgotten, or not fully appreciated to begin with, especially if they have not been properly trained on the process. Lack of training in my experience tends to result in a lack of engagement and firefighters not 'buying in' to the need for the information. Training is particularly important if operational crews are to continue to be charged with carrying out the more extensive risk assessment that is required under PORIS.
- (ii) Capacity: I have mentioned already that the vast majority of wholetime firefighters<sup>69</sup> work to a four-watch duty system, and there is an advantage to this in that it provides for a large number of firefighters to be available to undertake the work. The LFB, by a wide margin, is the largest FRS in the country, so while there is a high number of premises in London to which section 7(2)(d) applies, there is also a large resource base to undertake the work. Whilst, in principle, the work can be split across all four watches and across all 103 stations, the reality is different and more difficult. The problem arises from the fact that the distribution of risk premises varies considerably across London, with some stations having a very high number of section 7(2)(d) risks and others, very few.<sup>70</sup> On the surface, there appears a straightforward solution of redistributing the workload in a more balanced way, as the total resources available should suffice. However, operational crews are not available to be redistributed and utilised in this way, because they must remain

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<sup>69</sup> Firefighters can be either wholetime or employed on an on-call basis. Wholetime firefighters are permanently based at, and in the main mobilised from, a fire station. On-call firefighters (previously referred to as retained firefighters), conversely, are required to live and/ or work within five minutes of their station and respond to emergency calls from their home/ workplace via an alerter. Typically, on-call firefighters have other jobs and/ or responsibilities, so their training is more limited and of shorter duration when compared to their wholetime counterparts. The basic training course is usually between 3-4 weeks, and they attend a weekly drill night. To the best of my knowledge, the LFB only employs wholetime firefighters.

<sup>70</sup> Note that this issue of disparity of risk across different stations was identified in GM Elwell's briefing paper to which I have already referred, on p.3 {LFB00032825}. The paper recommended that a review be undertaken.

available to provide operational fire cover on their own, local station ground. Furthermore, it should be remembered that the core purpose of collecting the information is for the use of the first crews, so, for that reason, it is important that it is the local crews undertaking the information gathering. The problem exists in all FRSs but is most acute in London. Consequently, this places a significant management obligation on the local station managers/ commanders, responsible for performance management of the relevant targets, but whose oversight is also required to ensure that a consistent approach is being followed by the operational crews. Here too, though, there are also workload and continuity issues, as station managers/ commanders have a large number of important duties, of which oversight of section 7(2)(d) visits is only one.<sup>71</sup>

(iii) Quality: The upshot of inconsistent approaches being adopted by the different crews that carry out section 7(2)(d) duties is that the risk information presented to first responders can commonly be perceived as, and is in fact, unreliable, which results in a low level of trust and confidence in the data. This is consistent with both the findings of the HMICFRS report referred to above and the 2010 HSE review, which noted that information was often incomplete, inaccurate and/ or out of date. In my experience, consequently, first responding crews are more predisposed to fall back to their perceived familiarity with the premises, often relying on their recollection of previous visits or incidents they may have attended, rather than using the risk information contained in the FRS's risk database. This is consistent with one of the themes that arose out of the interviews held with operational crews in Scotland for the purpose of the Scottish report referred to above, and which I set out in full below. Namely, that crews often consider that they are familiar with the incident type or premises location involved, and therefore assume that they will not learn anything new by having regard to the recorded operational risk information.<sup>72</sup>

(iv) Falling incident levels: As I explore in more detail in the following section, there has been a major reduction in fires over the last few years, and specifically large fires. Therefore, reliance on operational risk information as part of early, critical decision making at a major fire has similarly become a much less frequent occurrence. Crews simply lack the experience of using operational risk information, and doing so effectively, at such incidents.

68. As part of its inspection of the Scottish FRS management of operational risk information referred to above, HMFSI for Scotland carried out a number of interviews with station-based staff. The intention was to assess how the systems that had been in place up until that time – subsequent to the 2013 amalgamation of the previous 8 Scottish Fire Services – operated in practice, and to assess the effectiveness of the

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<sup>71</sup> By way of example, {LFB00036964} is a document setting out a Station Manager's duties within the LFB and refers to more than 60 areas for which a Station Manager has overall responsibility, of which section 7(2)(d) visits is one and is listed on the final page.

<sup>72</sup> HMIFRS (Scotland) report, p.41 {SMC00000039}.

same. It is worth setting out in full the report's summary of the observations reported by staff during those interviews, as they reflect to a large extent my own concerns in this area, as well as some (but not all) of the points raised in the English HMICFRS's report:

*"...As part of our fire station visits we interviewed staff to learn about how the legacy systems operated, their views on the quality of the information and its accessibility, and we sample tested user knowledge and interaction with systems...; ...We were interested to know what, if any, barriers existed to prevent information from being used where it did exist. From our discussions ... we routinely found that limited use is made of risk information. This occurs for a number of reasons, but can be listed as:*

- a lack of time en-route to an incident, too many other things to consider or do en-route;*
- familiarity with the incident type or premises location involved, therefore an assumption that they won't learn anything new;*
- doubt over the accuracy of the information; and*
- reliance on information from the premises occupier on-scene.*

*Recorded Risk Information is more likely to be referred to as the duration of an incident develops. Incident commanders said that as an incident settled down they may take time to look to see if there was any premises specific information available. Reference was also more likely to be made if the incident was likely to develop in size which would thereby necessitate attendance of a senior officer. A senior officer will often ask the initial attending officer in charge where they got their risk information from and whether they have retrieved information from the MDT. Our sample testing of crew's knowledge and interaction with the systems found a variety of system capability and performance..."<sup>73</sup>*

### Effective practices adopted by other FRSs

69. I have set out above my view that the management of operational risk information tends to present challenges to FRSs across the board. Despite that, there are still certain practices followed by some individual FRSs that are in my opinion effective. There are two particular practices that I will outline below as potentially being of relevance to the Inquiry, as they touch on issues that were lacking in the LFB's own processes.

### West Yorkshire Fire and Rescue Service

70. I have seen a paper published by West Yorkshire FRS in February 2015, that documents how the service was intending to deliver its risk-based inspection programme during the period 2015 to 2018. I would add that I do not know if these

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<sup>73</sup> HMIFRS (Scotland) report, p.41 {SMC00000039}.

intended procedures were in fact implemented, or how effective they were, but in my view the paper is still relevant to consider, in particular, in relation to the thematic approach to the carrying out of section 7(2)(d) visits. Operational crews are said to be tasked with visiting a particular type of premises, based on the information already available about the premises (for example, the same crew may be directed to deal with all hospitals in their area, or all schools, or all buildings where there is “*an element of construction known to perform poorly in a fire*”). Perhaps most interestingly, each year at least one themed visit was to be preceded by a ‘Topic Talk’, delivered by a member of the West Yorkshire FRS fire protection (i.e. fire safety) team and covering specific issues commonly found in premises in that theme.<sup>74</sup>

71. This approach is potentially a helpful model, in my view, for two reasons. First, it seeks to provide a coherent structure to which crews are visiting which premises, rather than the allocation being random. Second, it recognises the value to be had in providing assistance to operational crews from fire safety personnel, which as I have already explained is an important factor that should be reflected in any operational risk management system. This approach outlined in the West Yorkshire FRS paper is clearly just one possible way of involving fire safety personnel in section 7(2)(d) visits, but in my view the prospect of fire safety personnel delivering themed talks to operational crews to increase awareness and focus attention on specific issues is a very interesting one.
72. I should make the point that West Yorkshire FRS were rated as good in their HMICFRS inspection for risk information management.

#### Greater Manchester Fire and Rescue Service

73. The second set of practices to which I would draw the Inquiry’s attention are those adopted by Greater Manchester Fire and Rescue Service (GMFRS). I have submitted the GMFRS Operational Intelligence Policy to the Inquiry,<sup>75</sup> and there are three aspects of the Policy to which I would draw specific attention.
74. First, each borough within GMFRS has a nominated Operational Intelligence Single Point of Contact (SPOC), who is responsible for ensuring that all risk information gathering work, whether it is by protection officers (fire safety officers) or operational crews in their Borough, is completed and that relevant information is then entered onto the appropriate risk database. SPOCs are also responsible for supporting the activity of the corporate team that oversees the Operational Intelligence system, and they are responsible for coordinating activity, so that joint visits (between operational crews and fire safety officers) are undertaken at all premises where this is required.<sup>76</sup> In my view, this provides a degree of structure to the management of operational risk information.

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<sup>74</sup> West Yorkshire Risk Based Inspection Programme report, 13 February 2015, p.4, sections 3.4 and 5.

<sup>75</sup> Greater Manchester Fire and Rescue Service Operational Intelligence Policy (v 1.0, 2014) {SMC00000040}.

<sup>76</sup> Greater Manchester Fire and Rescue Service Operational Intelligence Policy (v 1.0, 2014), p.11 {SMC00000040}.

75. Second, as to the involvement of fire safety personnel, the GMFRS policy prescribes that joint inspections are the default requirement for certain premises, including high-rise buildings over six storeys.<sup>77</sup>
76. Third, to ensure that there is a two-way exchange of information, GMFRS also require that each operational watch is provided with a nominated fire safety officer, again a single point of contact (liaison officer), whose role is to address any fire safety issues or enquiries that crews may have.<sup>78</sup> In reality, this means that the watches typically work alongside the same officers when undertaking joint visits, which enables greater continuity and builds closer working relationships. As a result, there is a regular exchange of information, and the liaison role can also entail training or lectures provided by fire safety officers around some of the more complex aspects of building construction, firefighting installations etc, arising from joint visits. This very much reflects the spirit of the guidance I have drawn attention to at the start of this section (Fire Service Circular 16/1989).
77. Again, I should make the point that GMFRS were rated as good in their HMICFRS inspection for risk information management.

### Conclusions and potential changes to management of operational risk

78. In my view, an effective system for the management of operational risk must strike the right balance between providing the first incident commander with timely, accurate information that will be required in order to inform critical early decision-making, without overburdening him or her. On the one hand, there is an obvious risk of confusion and information overload if all risk information is presented to the incident commander at once (especially if it is expected that this will be read and absorbed en route to an incident).<sup>79</sup> Further, risk information cannot anticipate or predict the incident itself, for which there will be infinite variations as *"no two fires are alike."*<sup>80</sup> The incident commander needs to start making critical decisions and formulating a firefighting, and potentially a search and rescue, strategy very quickly after arrival, but with limited time to formulate that plan. Overwhelming incident commanders with too much information, at the same time as they are trying to build situational awareness, carries its own risks.
79. On the other hand, in terms of the information that is collected, whilst it would be attractive to think that it is possible to strip back the information gathering requirements, in my view that is neither realistic nor feasible. In my opinion, it is necessary and appropriate for FRSs to have regard to the full suite of information that is mandated by PORIS when they carry out section 7(2)(d) visits, to the extent that this applies to the property in question; similarly, I think that the full list of items

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<sup>77</sup> Greater Manchester Fire and Rescue Service Operational Intelligence Policy (v 1.0, 2014), p.8 {SMC00000040}.

<sup>78</sup> Greater Manchester Fire and Rescue Service Operational Intelligence Policy (v 1.0, 2014), p.10 {SMC00000040}.

<sup>79</sup> I have already referred to the HMFSI Scotland report which provides evidence that ICs have too many things to do en-route to an incident to make this a realistic expectation, beyond a cursory consideration.

<sup>80</sup> I will explain the provenance of this *"no two fires are alike"* expression in the next section of my report.



identified in the LFB's PN633 Appendix 1 should be considered in relation to high-rise premises specifically. It is worth bearing in mind that for all premises aside from those in the 'high risk' category, visits happen relatively infrequently under the LFB's policies (once a year for medium risk; once every three years for medium to low, which was the category into which Grenfell Tower fell; and once every five years for low risk). In my view, it is not too onerous to require crews to go through the full list of items when those visits do occur, to confirm that the information recorded remains accurate, and to correct or update it as appropriate. Further, rather than watering down the information, I think it is necessary to look in detail at filtering, graduating and layering the way risk information is provided to first responders, better than is currently the case. The goal should be to re-capture the simplicity of the section 1(1)(d) requirement, and FRSs should bear in mind that, regardless of how much information they hold, it remains the case that all that can usefully be acted upon by the first incident commander is limited, and in most cases, general in nature. In my view, it would then be appropriate for the more detailed information to be present on a command support system and available to assist the command decisions of more senior officers in the event that a fire develops.

80. As to the question of how to ensure that section 7(2)(d) visits are conducted so that all the relevant information is considered, properly recorded and regularly updated, in my view, it is not beyond the capability of professional firefighters to be trained to undertake risk assessment to the level required for the purposes of section 7(2)(d). Although, clearly, the training itself needs to be of a high quality and delivered by knowledgeable trainers with regular follow-up and refresher sessions as part of the process. There also needs to be more effective assurance training for managers, whose role is to administer and manage the system, to ensure that the necessary visits are completed and that quality and consistency are maintained. I acknowledge that the complexity of certain buildings brings an added requirement for specialist knowledge in certain cases, but I have also described how the involvement of fire safety officers and joint visits can be made to address these aspects. I also understand that all this requires significant resources, but in my view, this needs to be a priority for the LFB.

## **Part B: Training**

### **Introduction and Phase 1 conclusions**

81. The Phase 1 report makes specific findings in relation to the LFB's training of its operational personnel.<sup>81</sup>
82. I agree with those conclusions, and though there is one additional point I would add, this is not intended as a qualification to the Phase 1 findings, with which I agree.
83. The additional point I would make concerns evacuation training. I agree that there is no evidence of LFB officers having received training in the principles of evacuation. But the failure is broader, as I am not aware of any national operational guidance or direction that provides advice as to how to evacuate a high-rise building, as distinct from consideration of an evacuation strategy that forms part of a means of escape and fire safety management plan. I shall return to this point in my consideration of firefighting strategies adopted by other FRSs.

### **Culture of "Freelancing"**

#### **Introduction**

84. I agree with the finding in the Phase 1 report that *"the evidence of the way in which firefighters were deployed indicates that those in command exercised insufficient control over their actions to ensure that resources were used efficiently. Too often firefighters or junior officers acted on their own initiative, resulting in confusion and duplication of effort."*<sup>82</sup> In my view, this problem and how to address it requires further consideration as part of Phase 2.

#### **Definition**

85. There is relevant National Operational Guidance on incident command, *"The Foundation for Incident Command"*, which describes the control measures that are necessary to address the hazard of ineffective organisation of the incident ground. One such measure is the implementation of an effective communication strategy, and the guidance identifies that if this control measure is not in place, there can be a breakdown in leadership and indiscipline, leading to what the guidance refers to as *"freelancing."*<sup>83</sup> In my view this notion of freelancing is a helpful way of encapsulating the concern that has been identified in the Phase 1 report, namely the taking of unilateral action by individual firefighters, where this has not been ordered by the incident commander, who may be unaware of the fact and aim of that action.

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<sup>81</sup> Phase 1 report, Vol IV, 27.16-27.20.

<sup>82</sup> Phase 1 report, Vol IV, 33.18.

<sup>83</sup> See National Operational Guidance, Policy Guidance on hazards and control measures, supporting the Foundation for Incident Command, p.37 (viewed on 10 April 2020). The guidance uses the expression 'a breakdown in... followership' to describe the issue of indiscipline {SMC00000023}.

### Initiative versus freelancing

86. It will be apparent from the above explanation that freelancing on the incident ground is to be discouraged. However, firefighters must still be able to exercise their initiative, so the challenge is how to achieve the correct balance of encouraging the use of initiative, without encouraging unilateral action. This is not a new challenge. In fact, traditionally, the need for firefighters to grasp the dilemma was a first principle, and part of their initial encounter with basic training. I can find no better description of the predicament than the one used for many years and laid out in *Manual of Firemanship, Book 11, Practical Firemanship 1 (Fourth impression, 1989)*. I acknowledge that the gender specific language dates the expression, but despite this, I would maintain that it exposes the issues still needing to be addressed by training, and remains relevant in the context of the Phase 1 findings:

*"'No two fires are alike' is an old and very true Fire Service saying, and therefore technical knowledge must be backed up by intelligence and the ability to grasp the fundamentals of a situation, to initiate a plan of action and to improvise on the spur of the moment.... The fireman must be physically fit, for work at a fire will almost always involve considerable physical exertion. He must be courageous and yet be calm, for on these qualities will depend his reactions in an emergency. He must be patient, for often he will need patience when dealing with persons whose property is involved or threatened by fire and who are in a state of considerable mental distress. He must have initiative and must possess the will to keep going for long periods under adverse conditions. He must cultivate his powers of observation to the utmost and must also possess an enquiring mind. He must have a keen sense of discipline, for unless he himself is able to obey orders without question he cannot expect others to carry out his orders. Finally, he must never forget that as a member of a local authority fire brigade he is a servant of the public, and that it is to him that the public turns in an emergency..."<sup>84</sup>*

87. This account makes it apparent that there is a fine line between using initiative in a risk-based way, predicated on experience, training and judgment – what I would refer to as professional risk taking – and freelancing. Even well-intended unilateral action represents a breakdown in order and discipline, and can have inadvertent, adverse consequences for colleagues or, worse, members of the public. In addition, freelancing also denies the incident commander vital resources (namely personnel) at a crucial time, when formulating a plan based on the teams and resources they have at their disposal.
88. In order to illustrate this distinction between professional risk taking and freelancing, it is helpful to consider two examples of action taken by two separate sets of personnel at the Grenfell incident, both of which have been considered in the Phase 1 report.

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<sup>84</sup> *Manual of Firemanship, Book 11, Practical Firemanship 1 (Fourth Impression – 1989)*, pp.19-20.



89. The first example reflects the use of initiative and professional risk taking, as well as considerable courage, and relates to the rescue of two residents from floor 9 by CM Tillotson and his crew.<sup>85</sup> This crew was not given a brief at the bridgehead; rather, the team leader, CM Tillotson, took the initiative to use his crew to start clearing floors and rescuing people. He did not act unilaterally, however, as he informed the bridgehead commander (WM O’Keefe), who agreed to the mission. CM Tillotson decided not to take firefighting equipment – against convention and procedure – as he considered that this would slow the team down. The team proceeded to try to clear a number of floors, before coming across two residents on floor 9, a mother and her daughter. The team then further acted on their own initiative, concerned that the residents would struggle to descend because of deteriorating conditions, and decided that three of them would collect extra Breathing Apparatus (BA) sets from the bridgehead for the evacuees to wear. The remaining team members stayed to reassure the people trapped until the return of their colleagues, whereupon the group, together, made their way down the tower. Again, this approach was outside procedure and convention but, in my view, it was a calculated risk and necessary in order to bring the two residents out of the tower to safety. The subsequent descent was extremely hazardous, and involved a combination of residents and firefighters connecting to different BA sets during the descent, but both residents were successfully rescued and to the best of my knowledge, no firefighters were injured.
90. The second example, which in my view demonstrates action that constitutes freelancing, is FF O’Beirne’s self-determined and unilateral exploration of the Tower during the early stages of the fire.<sup>86</sup> FF O’Beirne was a member of the second crew in attendance (North Kensington G272) and, initially, assisted the first breathing apparatus teams to make an entry to Flat 16, by laying out a jet(s) from the rising main. Having done that, he then waited for a short period in the staircase, from where he decided to ascend and explore the tower, without instruction and without having notified the entry control point. He describes this decision in the following way: *“It’s not necessarily my job to go and check the other floors, as we did have two crew managers there, however because we had extra firefighters there that night<sup>87</sup> I thought I would check to see if the floor above was alight. I could have put a BA set on but I felt that due to my level of experience I was better placed to go and see what was going on with the other floors and that if I reported something WM DOWDON [sic] he would take me more seriously than perhaps other firefighters.”<sup>88</sup>* It is difficult to establish exactly which floor FF O’Beirne got to – his statement indicates that it was possibly as high as floor 12<sup>89</sup> – but he describes several encounters with residents suffering the effects of smoke and making their way out of the tower, as

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<sup>85</sup> Phase 1 report, Vol II, 12.3-12.5, 13.18-13.19, 14.112-14.114.

<sup>86</sup> Phase 1 report, Vol II, 10.53-10.54, 10.67-10.69, 10.79(c), 10.101, 10.154, 10.181, 10.182, 10.190. See also FF O’Beirne’s witness statement {MET000083321} pp.8-18.

<sup>87</sup> I am not clear what FF O’Beirne means by suggesting that there were *“extra firefighters there that night”*, as, at this stage, the crews in attendance remained those on the PDA.

<sup>88</sup> {MET000083321} p.10

<sup>89</sup> {MET000083321} p.16 and p.17

well as seeing fire and smoke in flats on various floors, and encountering other firefighters, who were following instructions that they had been given at the bridgehead. He also mentions several unsuccessful attempts to contact WM Dowden and CM Secrett by radio, but he remained unable to do so. This meant that he could not impart vital information to his officers about the unusually fast-paced development and ferocity of the fire inside the building at a crucial time in the incident. But, equally, he could not take any instructions that those in command may have wanted to give him, had they known of his whereabouts and what he was seeing. Additionally, no-one would have known, for some time, if anything had happened to FF O'Beirne, but it would have created a need to divert resources to address any resulting firefighter emergency, in accordance with the LFB's procedures, if something had occurred. Crucially, FF O'Beirne was not available to CM Secrett or WM O'Keefe to deploy, during a critical phase of the fire. I accept fully that FF O'Beirne's actions were well-intended and I do not question his sense of duty and effort. I should be clear, also, that he later went on to fulfil several valuable roles in support of the activity at the bridgehead. Nevertheless, that good work and contribution should not obscure the risk and consequences of his freelancing activities during the early stages of the incident.

91. I would make one final point in relation to the need to balance the use of initiative with the need to avoid freelancing, which also arises from the Phase 1 evidence on firefighter deployments. A recurring theme in that evidence is the scenario that various crews and individual firefighters found themselves in, having been tasked at the bridgehead to go to a specific flat or floor to carry out a rescue, and coming across different residents apparently needing to be rescued, before the crew or firefighter was able to complete their original brief.
92. This presented a terrible predicament, and I am not aware of any incident, in this country at least, that compares to Grenfell in the sense of creating this particular situation on this scale. On the one hand, firefighters were required to make a spontaneous decision as to whether to leave people where they had encountered them, or to abandon their assigned brief and rescue them. On the other hand, they would still be conscious of the nature and size of the fire, and aware that many people were trapped and in need of rescue, and on multiple floors. There is no guidance that I am aware of that assists with the question of what the 'correct' response in those circumstances should be, and nor am I aware of a comparable incident or case study that may serve as a benchmark. I can therefore only offer a professional opinion of what I consider to be an appropriate way of approaching this very difficult operational dilemma.
93. The first significant point to note is in relation to the challenging environment in which crews were being briefed at the Grenfell incident. The evidence of Phase 1 has established that there were multiple routes by which LFB personnel were trying to transmit Fire Survival Guidance information into the tower. There were also

multiple ways in which BA crews were given their briefs before going under air including, in some instances, evidence that the same crews were given different briefs by different officers and in different locations. During the early stages of the incident, the bridgehead became a congested bottleneck, with crews pushing to try to get in but, at the same time, trying to allow other teams and residents to evacuate.<sup>90</sup> The majority of crews moving through this space were wearing breathing apparatus and, whilst communication is possible, it requires people to shout to be heard, with considerable background noise emanating from the breathing apparatus itself.

94. Further, the crews were entering a very serious – dangerous – fire situation, often without any firefighting equipment. In some cases – certainly in the earlier stages – firefighters were running out of air when they were high up in the tower.<sup>91</sup> There is evidence that the lack of floor numbering in the staircase meant that many crews were unclear which floor they were on at any given time, and they were often relying on a personal count of their ascent.<sup>92</sup> The reality of the situation I have described, therefore, is far removed from the ideal of well-briefed, well-informed crews having a clear and relatively detailed understanding of their assignment, and with the necessary training, equipment and capability to fulfil that assignment.
95. It was in this environment that firefighters were then ascending the tower's single, narrow staircase, and in some cases encountering residents in various states of anxiety, distress and disorientation, suffering the effects of smoke and heat in a noisy, smoke-logged and congested space. Understandably, the residents concerned were fearful of their lives and focused on trying to get out. I have little doubt that the firefighters would have firmly believed the residents they came across were casualties in the true sense of the term, rather than 'merely' confused residents who were vulnerable, but probably able to make their own way out. In my view, there was no practical prospect of firefighters being able to stop and question the people concerned to establish who they were, and from which flat they had escaped. Likewise, there was no practical prospect of crews being able to weigh up the risks and benefits of alternative courses of action in any analytical way. In reality, there was no time for anything other than an intuitive, split-second decision, particularly taking into account the hazardous nature of the staircase, the fact that crews were largely without firefighting equipment, and the fact that the casualties were also without breathing apparatus and PPE.

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<sup>90</sup> See, for example, the witness statement of SM Walton {MET00010828} pp.30-31, in which he describes the second floor mezzanine where BA wearers were queuing up waiting to be deployed and the bridgehead which was on the other side of the door, in the lobby of floor 2, as *"like being on a crowded underground platform in the rush hour. You could get through people but you had to move them to get through them"*. He describes having to shout in order to attract the attention of WM O'Keeffe, who was at that time in charge of the bridgehead.

<sup>91</sup> See, for example, the witness statement of FF Tom Welch {MET000080606} pp.10-12.

<sup>92</sup> See, for example, the witness statement of FF Martin Gillam {MET00008025} p.9.

96. I recognise that it could be said that, had some of these crews persevered and continued with their original mission, then it is possible that some lives might have been saved from the flats or floors to which those crews had been sent originally. With that accepted, it must also be acknowledged that the condition of many of the self-evacuating casualties who were rescued from the staircase or lobbies was such that those residents may have perished, had they not been given assistance by the passing crews.
97. All that being said, there is a risk of speculating, and I do not believe that it is possible to say what the potential outcome would have been, had any of those crews who diverted from their original briefing taken a different course of action. This is a vexing and difficult dilemma, and my professional opinion is that if I were one of the firefighters on the night, then I believe that I would have made the same judgement call, and rescued the casualties that I saw in front of me. In doing so, I would have taken pains to ensure that I relayed this information to the Entry Control Officer, and sought to ensure that my diversion was properly recorded and understood.
98. Returning to the issue of freelancing, and in light of the explanations above, it will be apparent that my view is that a freelancing culture should be actively discouraged and that unilateral action represents a failure of good order and discipline, and is intrinsically dangerous.
99. However, it is entirely possible to devise and implement a training regime that mitigates this risk and not only allows for the use of initiative but requires it as part of a safe system of work for dangerous situations.
100. I would add one qualification here. There is a narrow distinction between foolhardiness and recklessness on the one hand, and bravery and courage on the other. The public expects firefighters to push the boundaries of safety in an emotionally charged crisis situation. Reciprocally, firefighters accept that this element of danger is part of their role. As a result, this is not a policy area where people can readily be instructed and trained not to act heroically (as they would see it). It therefore cannot be assumed that policies will readily be complied with, as there are many complex human factors in play, and I do not wish to oversimplify the complexity.

**The need to devise and implement a training regime that encourages the exercise of initiative whilst discouraging freelancing**

101. As recognised by the quote from the Manual of Firemanship above, not only is the use of initiative to be encouraged, it is essential. There are many aspects of a firefighter's role that have changed over the years, including the requirement to respond to a much wider range of emergencies. This is further complicated, as I will explain, by a reduction in the frequency – but by no means the complexity – of major fires. Accordingly, a firefighter's technical knowledge must still be backed up by intelligence, the ability to grasp the fundamentals of a situation, and the capability to

initiate a plan of action and, where necessary, to improvise 'on the spur of the moment'.

102. The question to be answered, then, is whether it is possible for a FRS to devise and implement a training regime which encourages the exercise of initiative whilst maintaining discipline and order, and discouraging freelancing.

#### Guidance on freelancing vs. initiative

103. At this juncture, it is helpful to consider whether any guidance exists on how to encourage initiative while maintaining order and discipline.

104. One area that it is helpful to consider by way of example, is the health and safety guidance issued to Fire and Rescue Authorities: see, in particular DCLG's *Health, Safety and Welfare Framework for the operational Environment*.<sup>93</sup> This illustrates that it is vital that firefighters are trained to use their initiative to secure their own health and safety, and to balance that with their public duty, as exemplified by the following:

- (i) First, in Section 7.2, the framework describes four pillars of operational risk assessment,<sup>94</sup> the fourth of which is individual risk assessment. It identifies that, whilst in most cases, incidents are dealt with by firefighters working alongside and under the direct supervision of their commanders, there are circumstances when they are required to work remotely and make decisions for themselves. Individual risk assessment, therefore, is another layer designed to inform personal safety in circumstances where firefighters are unsupervised.
- (ii) Second, Section 8.3 identifies that safe and effective operations rely on the organisation's approach, but they also rely on people attending operational incidents to be responsible for their own safety. The Framework identifies five key elements to being a safe person in the operational environment, all of which, in some way, involve the need to be able to exercise initiative and judgment on a personal level, but within the command and control structure. For example, a safe person is able to recognise their limitations in knowledge and experience when being assigned a task; they must exercise situational awareness, meaning that they must be able to identify and react safely to new or unexpected hazards, particularly when working without supervision; and they must understand when and how to take action to reduce personal and team exposure to risk in the absence of guidance from supervisors or

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<sup>93</sup> DCLG, Fire and Rescue Authorities Health, Safety And Welfare Framework for the Operational Environment (2013) {SMC00000012}.

<sup>94</sup> DCLG, Fire and Rescue Authorities Health, Safety And Welfare Framework for the Operational Environment (2013), Section 7.2, pp.20-23 {SMC00000012}.



commanders.<sup>95</sup> Section 8.3 of the Framework goes on to comment about leadership and supervision:<sup>96</sup>

*“... Everyone on the incident ground has a responsibility for their own safety and the safety of those around them. This individual duty requires firefighters to take reasonable care of themselves and in any situation where they are aware of circumstances that can compromise safety, they have a duty to intervene to prevent harm occurring. They should act sensibly and responsibly within the command and control arrangements of a Fire and Rescue Authority and not act recklessly or endanger others. It is important that command and control discipline is maintained to ensure the safety of operational personnel and others...”*

105. A further example is provided by the old Fire Service Drill Books. These were replaced by a Fire Service Training Manual in 1994 which was itself replaced by the *Fire and Rescue Service Manual, Volume 4, Fire Service Training* (2004)<sup>97</sup>, but it is the Drill Books rather than the more recent Manuals that make the point about the importance of initiative the most clearly. For example, the 1989 edition of the Drill Book states that the drills are for the purpose of *“achieving uniformity in the basic training of personnel in the use of their appliances and equipment, ensuring that the appliances and equipment may be used with speed, efficiency, confidence and without confusion.”* Further, personnel *“should be encouraged to use their initiative under varying conditions including the use of more than one appliance and several items of equipment in combination.”*<sup>98</sup>

106. It is evident from the preceding comments that the risks associated with unilateral action are well understood, and there is some guidance on the need to guard against it. It is also apparent that there is a basic need for firefighters to be able to exercise initiative. But the ability to use initiative is not a technical skill for which there is a clear ‘right’ and ‘wrong’ action, and for which a prescriptive approach can be taken. Rather, as identified in the first principles of the early Manual of Firemanship referred to above, firefighters must *“have initiative...and possess an inquiring mind”* (emphasis added). In other words, they need to be resourceful and to solve problems under pressure, which is an inherent cognitive ability, or a non-technical skill. Consequently, it is something that FRSs assess and evaluate at the point of entry, as part of recruitment selection tests.

107. What this also means is that there is no standard practice of ‘initiative training.’ Instead, personnel need to be encouraged to practise using initiative and thereby to

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<sup>95</sup> DCLG, Fire and Rescue Authorities Health, Safety And Welfare Framework for the Operational Environment (2013), pp.28-30.

<sup>96</sup> DCLG, Fire and Rescue Authorities Health, Safety And Welfare Framework for the Operational Environment (2013), p.30.

<sup>97</sup> DCLG, 2004, Fire and Rescue Service Manual, Volume 4, Fire Service Training, The Stationery Office, London. Section 4 of this manual replaces the Fire Service Drill Book and in large measure reproduces those basic drills, though it refers to them as *standard practices and techniques*.

<sup>98</sup> Fire Service Drill Book (Sixth Edition), 1989, pp.4 and 18.

develop their non-technical skills. This is achieved by ensuring that personnel, as part of their regular training, professional development and exercises, are presented with complex and unexpected problems that require the individual to apply the use of initiative in order to solve the problems. As with all effective training, though, this must be supported by good debriefing and constructive feedback to draw out the necessary learning from the situation. I will now consider how an FRS may go about this integration of the use of initiative as part of training.

#### Incorporation of initiative into operational training

108. Operational training takes various forms, including classroom-based learning (table top exercises; floor plan exercises; scenarios; case studies; lectures); computer-based training (simulations) and practical activities (drills; small scale exercises; large scale exercises). It is possible to design and deliver all such forms of training so that individuals are required to rely on their initiative in some way to carry out the activity. In this context, contingency injects are the means by which this is usually achieved, which I will now explain.
109. Contingency injects are introduced by a facilitator or organiser if an exercise or training event starts going off track, or the participants do not take an action that is necessary for the continuation of the exercise. This ensures that the training moves forward as needed. But injects can also be introduced to take people deliberately off track, and to require them to think creatively about how to achieve the objectives of the training; in other words, to use their initiative. This approach lends itself to all forms of operational training but is especially helpful and useful in practical training scenarios to induce a greater sense of realism. By way of example, during a breathing apparatus drill at station level, the organiser may deliberately ‘collapse’ a team member at a critical point – simply asking them to pretend to fall over for some reason – in order to take the team by surprise, create a new emergency and see what action the crews take to address the difficulty. Other examples of disruption may include the placing of obstacles in front of crews trying to pitch ladders or undertaking training in darkness, or at unfamiliar venues. There is not necessarily a single correct way for these contingency-injects to be dealt with; rather, it is their continued incorporation into different kinds of training exercises (provided that organisers maintain a sense of unpredictability) that conditions crews to expect the unexpected at real incidents. Hence, the approach enhances realism and allows people to explore the boundaries within which to exercise initiative and apply their non-technical skills in a training setting.
110. I would note that whilst this approach is a well-established matter of practice across FRSs, I am not aware of any specific guidance that explains or expressly advises this as a means of developing initiative.

### Operational Discretion

111. It is also important to refer to the concept of operational discretion in the context of the exercise of initiative, and this term is defined in the National Operational Guidance on Operational Discretion in the following way:

*“... Operational discretion relates to rare or exceptional circumstances where strictly following an operational procedure would be a barrier to resolving an incident, or where there is no procedure that adequately deals with the incident. Commanders need to be sufficiently aware of procedures, the skills and qualities of crew members and the capability of resources available...[and]... The overarching principle should be that in the opinion of the incident commander the benefit of taking unusual, unorthodox, or innovative action justifies the risk...”<sup>99</sup>*

112. The Guidance states that the application of operational discretion would be justified in order to save human life; take action to prevent an incident escalating; or where taking no action may lead others to put themselves in danger. It also identifies that FRSs should require commanders to record the reasons for their decision to deviate from policy.<sup>100</sup> It should be emphasised that operational discretion is a concept that applies only to Incident Commanders: it is not to be relied on by operational personnel generally.

113. Insofar as the LFB is concerned, Policy 342 on Dynamic Risk Assessment covers the Brigade’s use of operational discretion, and provides an extended overview of when, where and how to apply it.<sup>101</sup> Overall, I consider the LFB policy to be comprehensive, though I would observe that it is very careful to impose a number of restrictions and conditions that must be met before operational discretion can be exercised.<sup>102</sup> Whilst it is of course necessary that personnel understand that operational discretion should not be used lightly, and this is reflected in the National Operational Guidance, in my

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<sup>99</sup> See National Operational Guidance on Operational Discretion, p.2 {SMC00000018}.

<sup>100</sup> GRA 3.2 also makes reference to operational discretion and in all material respects mirrors what is said in the National Operational Guidance: see GRA 3.2 {LFB00001255}, pp.23-24.

<sup>101</sup> PN342 {LFB00000236}; see in particular Section 6.

<sup>102</sup> See the Ribband Star report following the independent review that was commissioned by the London Fire Commissioner in 2019 into training and development within the LFB: {LFB00067786}. Pages 25 and 26 consider the issue of operational discretion and note that whilst there is a description of operational discretion, and when and how to apply it, in LFB’s policies, no formal training on this subject has been provided and it is not made clear what is and is not an acceptable deviation from policy. The report then makes a high priority recommendation that “The service should consider how best it prepares and supports incident commanders in relation to the application of operational discretion. Some formal input on the importance of carrying out a thorough risk/benefit analysis before deviating from policy should be provided to all incident commanders”; and, “The service should also consider providing some guidance and examples of what might be deemed to be acceptable and unacceptable deviation from policy. This would help to provide notional parameters for less experienced commanders.” Also of relevance are the findings noted in the HMICFRS inspection report, which considers the way operational discretion is applied in the LFB and points to a “strikingly low” use of the policy. It goes on to suggest that the use of the policy is inhibited by the organisational culture, citing a lack of confidence amongst incident commanders that the necessary support is there, alongside the suggestion that the “tone” of debriefing meetings does not support a learning environment {SMC00000011}, p.22.

view it is equally important that any operational policy does not fetter the use of the discretion, but rather provides an important enabling framework for the exceptional incidents when commanders must improvise. In my view, the extent to which incident commanders are trained on the use of operational discretion, the nature of that training, and the LFB's experience of its practical application, will all be important matters to consider in Phase 2.<sup>103</sup>

114. In any event, operational discretion is, in principle, one way in which firefighters are encouraged to use their initiative, in clearly delineated circumstances. That said, it is a tool that is open only to incident commanders (both under the LFB's policy and the national guidance), and so it is not an answer to the question of how to ensure both use of initiative and discipline amongst personnel across the board.

### Realism in training

115. The final point I would make in this context is in relation to the importance of realism in training.

116. It is accepted that how people react in emergencies is partially founded on collective experience. In other words, people compare their present situation with other situations that have been previously experienced, and they form decisions about what to do based on that experience. This type of learning is cumulative, so the more experience that an individual has 'banked', the more options they have available to them on which to base decisions.<sup>104</sup> Making a training simulation as realistic as possible is therefore very important. It enhances cognition and adds to that bank of experience and, when the person is confronted with a real, pressurised situation, makes that comparative process more effective. The need for realism applies at all levels of training.

117. But I should not be overly simplistic here, and must acknowledge that, whilst it is easy to explain why realism is important, especially against the backdrop of falling incidents which I will cover later, it is far from easy to achieve. Being able to reproduce dangerous environments (for example, buildings that can repeatedly be set on fire) is not only expensive, but is complex from a building and engineering point of view. Additionally, there are many environmental reasons why people don't want a fire training facility located near them – and this is even more of a factor in urban settings.

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<sup>103</sup> See also the witness statement of AC Graham Ellis {LFB00118230} at paragraphs 51 – 60 which relate to his time as the DAC responsible for Incident Command Policy (ICP), and, specifically, the Operations Review Team (ORT). He describes the role of the ORT as "*arbiters of Policy during operational incidents, and at PRC [Performance Reviews of Command] debriefs*", and describes the LFB's approach to Operational Discretion as "*well-considered and tested*" (para 59). Also of relevance is the second witness statement of former Commissioner Cotton, in which she states that "*much of the practice [of operational discretion] was already in place*" at the time of the 2015 National Operational Guidance on Incident Command, which touched on the concept: see {LFB00118209}, paragraph 42.

<sup>104</sup> This phenomenon is known as recognition-primed decision making (RPDM) and I will explain it more fully when I consider the issue of incident command psychology.



118. Because of these difficulties, therefore, there is a risk of trying to manufacture realism, which can be counterproductive and serve as a distraction, as participants end up thinking more about how unrealistic the exercise or the training is, rather than using the opportunity to train.

119. Having said all of that, there is no quick or simple solution to this realism challenge, as constructing large buildings and bespoke training facilities that can create this level of authenticity requires extensive investment. Without realism, though, it is difficult to induce the necessary pressure that characterises an emergency situation, and which helps personnel to understand the difference between initiative and freelancing, by having had the opportunity to practise and see for themselves the implications and impact of both.

120. So, despite the difficulty, the need for realism remains an essential element of an operational training regime. The approach of the LFB to realism in their training, including the way they have assessed and provided for the right type of facilities necessary to support a realistic operational training requirement, should be considered as part of Phase 2.

### Incident Command Training

#### Phase 1 findings in respect of incident command

121. It is helpful to set out first what I understand 'incident command' to mean. Command, management and leadership are closely related subject areas and there is often confusion as to what each involves. Essentially, command may be regarded as leadership, but relates to the specific circumstances of a critical situation – an emergency or a crisis that requires directive control. In these situations, there is little time for extensive debate and a self-evident, time dependent need for decisive action. A research paper commissioned by the Home Office in the late 1980s entitled 'Command, Management and Leadership Training' in the Fire Service provides the following, helpful definition:

*"... From the fire service point of view, it is the authority vested in an individual for, and his (sic) exercise of, the direction, co-ordination and control of fire service personnel and resources..."<sup>105</sup>*

122. The Chairman found that there were several failures of incident command on the night of the fire, which stemmed from a failure to follow policy, and I agree that the evidence supports the Chairman's findings. Before I consider incident command training in more detail, though, I would like to address a number of preliminary issues that, in my view, must be taken into account as important background matters when considering the issue of how to train for incident command.

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<sup>105</sup> Review of Command, Management and Leadership Training, Sudbury Consultants Ltd, 1990, p.22 para 3.2.



Falling Activity phenomenon – loss of live exposure

123. It is a matter of fact that over the last fifteen or so years, there has been a dramatic and sustained reduction in operational incidents, and Fire and Rescue Services have played a pivotal role in facilitating this reduction through their wider prevention and protection work.

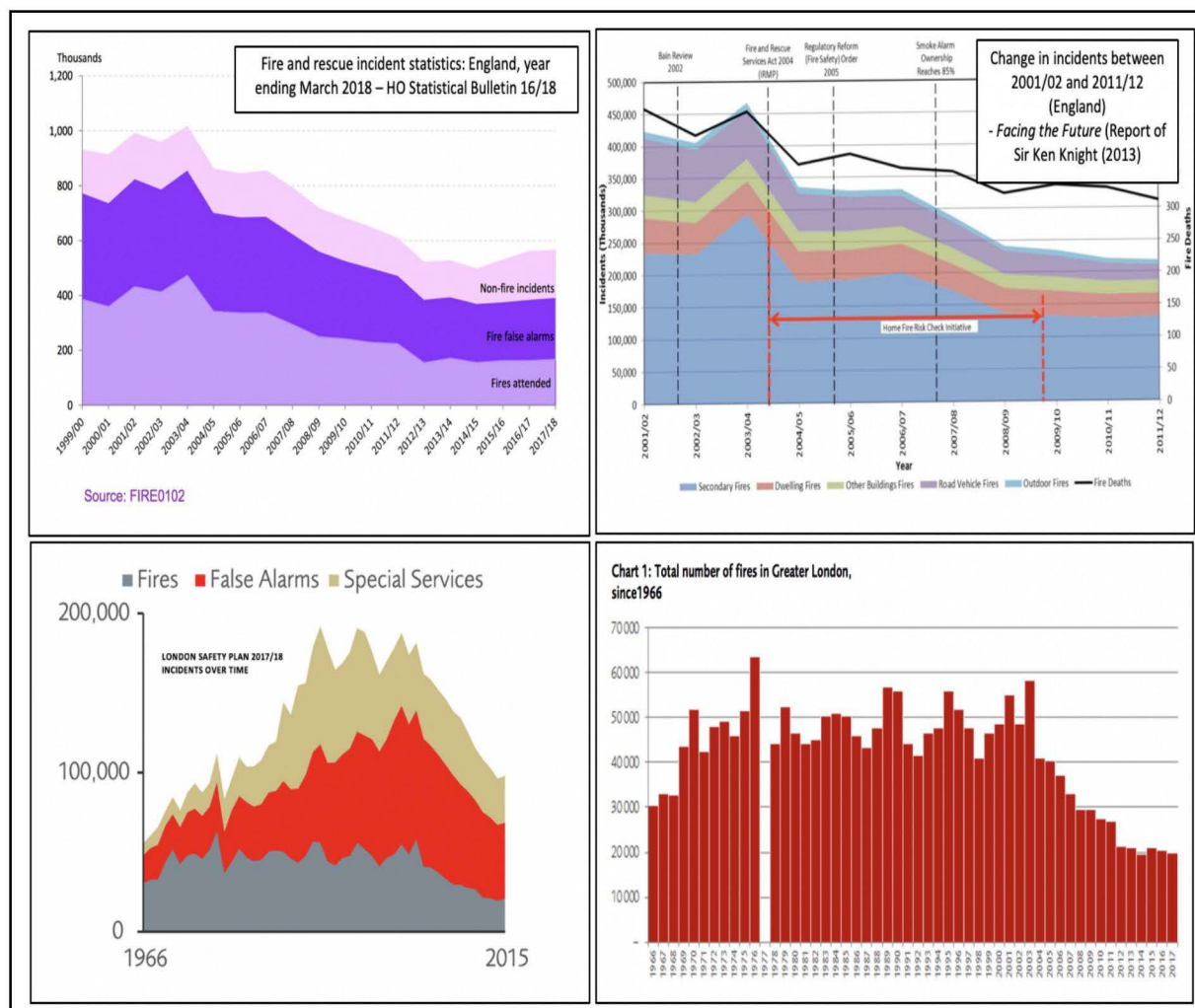
124. The upshot is that the frequency with which firefighters have been called upon to attend operational incidents in the last few years is much reduced. There are many fewer incidents than there were a number of years ago, and the fall in London shows an even steeper decline than the national picture. I have produced a graphic below to illustrate the situation and to highlight the stark nature of the fall. The top two images are taken from national reports,<sup>106</sup> the bottom left image is from the Sixth London Safety Plan (2017),<sup>107</sup> and the bottom right, from the London Fire Facts (2017) document.<sup>108</sup> The graphic also identifies that fires now comprise a small proportion of the number of emergencies responded to by Fire and Rescue Services, with non-fire incidents (car crashes, hazardous materials incidents, transport emergencies, floodings, etc) comprising a much bigger proportion of demand.

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<sup>106</sup> See Home Office Statistical Bulletin 16/18, p.6. See also FACING THE FUTURE: Findings from the review of efficiencies and operations in fire and rescue authorities in England (May, 2013), Fig 1, p.13.

<sup>107</sup> See Sixth London Safety Plan (2017), p.14.

<sup>108</sup> See London Fire Facts document, p.8.



### Implications of falling activity and loss of live exposure

125. While this is something to be celebrated from a public safety point of view, there are five important adverse consequences from an operational point of view:

- (i) First, this fall in incidents represents a significant reduction in the level of live exposure of likely incident commanders to all incidents, and particularly, to fires. While simulation and realistic training can go so far, it can never be the same as the real thing, as training will always be constrained by the need to balance the risks to which personnel are exposed against the training benefit. Added to this is the problem of scale, whereby the ability to recreate large fires with any authenticity is virtually impossible. Generally speaking, this means that training, however effective, will always face a challenge to make good the shortfall of experience that is caused by this diminution in exposure to real incidents.
- (ii) Second, incident command training is different to the operational aspect of training. From the command perspective, the fall in the level of live exposure to fires generally, but to large fires in particular, is compounded by an officer's career structure. Their daily role is predominantly managerial rather than

operational. The result is that even very senior officers rarely, if ever, have experience of command of an incident of any notable size as they progress up their career path.<sup>109</sup> It is vital, therefore, that senior officers are self-confident, knowledgeable and as well trained as possible, because the occasions when they will take command, albeit infrequent, will, by definition, be the most serious incidents.

- (iii) Third, there has been a steady erosion of the professional (formal) knowledge base of Fire and Rescue Services over an extended period. Not least because – outside of the command research I draw attention to later in this report – there has been no significant national operationally focused fire research undertaken since the demise of HM Fire Services’ Inspectorate in the mid 2000s.<sup>110</sup> Consequently, the origins of local standard operating procedures (SOPs), and even more recent national operational guidance (NOG), resides in fires and incidents of the 1970s, ‘80s and ‘90s. The ramification of this is that those procedures have not truly been tested against the complexities of modern building methods and techniques. More to the point, fires that have occurred have not resulted in research leading to the amendment of operational procedures in light of changing circumstances.
- (iv) Fourth, the inability to ground policy and procedure in the reality and test of a real crisis, in my view, leads to an artificially inflated confidence and blind faith in the procedures themselves. In the absence of incidents that expose gaps in procedure, then compliance with procedure and following a process becomes the goal, rather than the need to develop an understanding of the many possibilities, tactics and options around how to deal with the incident and learning as much from what did not work as what did.
- (v) Finally, in my opinion, the reduction in activity has dampened the sense of the real risk that continues to be posed by fires, especially big fires, and has led to a sense of complacency. Fires still happen, as I have already stated (in fact, recent years appear to have seen the reduction trend level off); more specifically, big fires still happen (and remain the biggest cause of major insurance claims in the UK). But the focus of Fire and Rescue Services, as well as the focus of the government, has shifted more towards the threat from

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<sup>109</sup> See DCLG report *‘The competencies and skills for Incident Command: an initial exploration Fire Research Series 7/2011’* for the general point, p.10. The same point is also referred to in the LFB’s own review of its training provision for incident management, published July 2013 {LFB00043552}, which noted at p.25 that even in London some managers can go a number of years between undertaking command roles operationally. And see also a 2015 report by the Head of Development to the Corporate Management Board, setting out a proposed process for the revalidation of incident command {LFB00118212}. At paragraph 13, the report notes that there had been a reduction in the number of times officers had been required to take the role of incident commander. Specifically, the data collected by the LFB indicated that between 2012 and 2015, on average, Station Managers assumed Command three times a year for a total of around 4.5 hours; Group Managers did so just once a year for around 3.5 hours; and Deputy Assistant Commissioners 1.5 times a year for just over 5 hours.

<sup>110</sup> I should declare an interest in that for a number of years I have been a Trustee of the Fire Research and Training Trust.

terrorism and the operational implications of climate change. By way of illustrating the point, both the National Risk Register<sup>111</sup> and the London Risk Register<sup>112</sup> foresee a big fire as a risk largely associated with industrial accidents.

126. The only way of trying to address this loss of live exposure is by the creation of more realism in training events, including the need to expose firefighters, and specifically officers, to risk and danger during practical and command training. I will consider the command training aspect below, but, before I do so, it is important to understand some of the psychology around how decisions get made in crisis situations.

## **Models of decision-making**

### **Analytical Models of Decision-Making vs Reflexive Decision-Making**

127. Early researchers in this field of decision-making reasoned that people generally solve problems in an analytical, rational way, and in an orderly, linear sequence. Typically, this consists of three phases of situation assessment, plan formulation and plan execution, and these phases can be identified within the LFB's Decision Making Model (DMM), which is explained and broken down in some detail in a dedicated policy (PN341).<sup>113</sup> This version of the DMM was also the version adopted in the national Incident Command Manual (published by the Chief Fire and Rescue Adviser's Unit in 2008<sup>114</sup>), the guidance preceding the most recent National Operational Guidance (NOG).

128. The model requires incident commanders to assess a situation by considering the information available to them, which provides the foundation of the planning process, informing the selection of an appropriate course of action. The plan formulation phase then incorporates the identification of the problem, with the generation of possible solutions and the selection of a course of action, resulting in a tactical plan. The final phase of the DMM is plan execution, with selected actions communicated to those who must implement them, and with the activity controlled by the incident commander to ensure the plan is carried out.

### **The Future of Incident Command (August 2015), Chief Fire Officers Association (CFOA)**

129. At this juncture, I would draw the attention of the Inquiry to a significant report published in 2015 by the Chief Fire Officers Association (CFOA) that is relevant to the issue of command training and relates particularly to the psychology of command.<sup>115</sup>

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<sup>111</sup> See National Risk Register 2019, p.20, Section 2.53.

<sup>112</sup> See London Risk Register 2019 Risk HL7, HL25, HL28, HL33, H58 overview on p.5.

<sup>113</sup> {LFB00012838}, PN 341.

<sup>114</sup> Fire Service Manual, Volume 2, Fire Service Operations, Incident Command, pp.18-19. Appendix 4, pp.131-132, also explains that the DMM was the construction of the LFB {SMC00000013}.

<sup>115</sup> See, The Future of Incident Command (CFOA, 2015) {LFB00118236}.



130. The CFOA report considered the findings of important research that had been undertaken and led by Dr Sabrina Cohen-Hatton<sup>116</sup> and published in the 'Human Factors' journal in August 2015. Dr Cohen-Hatton has provided a witness statement to the Inquiry which explains, in part, the background to this research as well as her role in further incident command related work with the CFOA.<sup>117</sup> In summary, Dr Cohen-Hatton's research confirmed that whilst the analytical decision-making model was embedded within extant training, it did not necessarily represent the way incident commanders, in fact, made decisions on the ground.<sup>118</sup> In the real world, things rarely happen in a precise sequence, and deliberation and analysis are not always feasible in a dynamically changing and high-risk operational environment. It transpired from the research that, on most occasions, commanders did not follow the prescribed sequence. Instead, they bypassed the planning phase of the DMM and moved directly from information gathering to action. This was a reflex and did not involve any explicit plan formation or evaluation, with decisions more often influenced by previous experiences and linked to recognising cues in the environment, rather than a result of considered analysis. The phenomenon has been referred to as a naturalistic or recognition-primed decision-making (RPDM<sup>119</sup>) model and was considered and explained in the aforementioned 2008 Incident Command Manual.<sup>120</sup>
131. The logical conclusion of this research is that, when confronted with a crisis and a need for immediate decisions, commanders will intuitively and reflexively draw upon their experience to make those decisions. If they are well trained in realistic circumstances, i.e. having participated in a substantial number of high-quality simulations and high-fidelity exercises, then they will have 'banked' a range of experiences to draw upon.
132. Conversely, if commanders have not received regular, frequent and exacting training in authentically simulated environments, then all they can rely on is their legacy operational experience, and this can result in failures of critical decision-making. I have identified in my comments on the implications of falling activity levels that, even in London, the level of operational exposure of senior officers as incident commanders is limited. So, while it is possible that commanders of major incidents may have extensive operational and tactical firefighting experience as part of front-

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<sup>116</sup> Dr Cohen-Hatton is currently the Chief Fire Officer of West Sussex Fire and Rescue Service. She was formerly a DAC in the LFB but, prior to that, she had served in South Wales Fire and Rescue Service and it was during this period that she was seconded to the CFOA.

<sup>117</sup> Witness statement of Sabrina Cohen-Hatton {LFB00110660}.

<sup>118</sup> See The Future of Incident Command (CFOA, 2015) at pp.12-17 {LFB00118236}, and see the original paper by Sabrina Cohen-Hatton, Philip Butler, and Robert Honey, "*An investigation of Operational Decision Making in situ; Incident Command in the UK Fire and Rescue Service*" {LFB00110667}.

<sup>119</sup> The original researcher behind naturalistic or recognition primed decision thinking was Dr Gary Klein in the mid 1980s {SMC00000030}. There is now a wide body of psychological work on this subject, which is outside of my expertise, and, consequently, I have not sought to address this in any detail in my report. The key point for the Inquiry to note, from an operational policy and training perspective, though, remains the fact that the publication of this research marked a shift in understanding as to how command decisions get made, in the manner I have described.

<sup>120</sup> Fire Service Manual, Volume 2, Fire Service Operations, Incident Command, Appendix 3, A3.3, pp.108-119 {SMC00000013}.



line crews, they may still only have relatively little ‘banked’ command experience, risking an over-reliance being placed on basic firefighting techniques and adherence to procedures, rather than having mastery of strategic, command decision-making.

133. This research was significant and informed the development of the new National Operational Guidance for Incident Command that was published in August 2015<sup>121</sup>, in particular the decision to replace the old DMM with the new Decision Control Process (DCP).

134. The DCP consists of four stages (risk information gathering; developing a tactical plan; applying decision controls, by asking questions such as why the decision-maker is taking the proposed action and whether the benefits outweigh the risks; and implementing the plan). The process is intended to reflect the more naturalistic and reflexive RPDM, as Dr Cohen-Hatton explains in her witness statement,<sup>122</sup> and I have produced both models as an appendix to my report to enable comparison and to illustrate the differences between the two. Further research carried out by Dr Cohen-Hatton in conjunction with the CFA confirmed that, in practice, incident commanders are more likely to be goal oriented and have better situational awareness when applying the DCP rather than the DMM.<sup>123</sup>

135. The DCP was not reflected in the 2008 version of the LFB’s DMM, nor was it reflected in their PN341, current at the time of the Grenfell fire.<sup>124</sup> Rather, the DMM used by the LFB has continued to reflect the analytical model I have described. I have therefore reviewed the witness statements of former Commissioner Cotton and AC Graham Ellis which, in part, relate to the LFB’s decision not to incorporate the new DCP. I understand from this that the LFB took the view that their existing DMM adequately covered the elements of the DCP.<sup>125</sup> More generally, AC Ellis also explains that the view was taken that many elements of the 2015 Incident Command NOG were already being achieved in the LFB. In particular, AC Ellis explains the function of the LFB’s Operations Review Team (ORT), which is relied on alongside a (unique) Monitoring Officer (MO) role, to provide “*layers of assurance to check and challenge decision making on the incident ground*”, including by “*incorporating the three key decision control questions as outlined in the IC NOG*”.<sup>126</sup> AC Ellis states that it was consequently considered that “*the LFB’s command decision making at operational incidents had built in challenge and control processes*”.<sup>127</sup> There is also a suggestion in former Commissioner Cotton’s statement that the LFB had some concerns that the

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<sup>121</sup> National Operational Guidance, The Foundation for Incident Command (Version 1 – 2015) {SMC00000045}.

<sup>122</sup> Witness statement of Sabrina Cohen-Hatton {LFB00110660} para 28.

<sup>123</sup> Witness statement of Sabrina Cohen-Hatton {LFB00110660} para 31.

<sup>124</sup> {LFB00000238}.

<sup>125</sup> Witness statement of Graham Ellis {LFB00118230}, para 38.

<sup>126</sup> Witness statement of Graham Ellis {LFB00118230}, paras 111, 109, 101.

<sup>127</sup> Witness statement of Graham Ellis {LFB00118230}, para 110. I would make the point here that I have seen no evidence of the manner in which the members of the ORT, or for that matter senior officers, were selected, trained or qualified to be able to advise or mentor more junior officers in the efficacy of their operational command decision making. I have already identified that the impact of falling incidents is compounded for the more senior officers.

DCP had not undergone sufficient 'testing' in practice.<sup>128</sup> However, the LFB are the only FRS in the UK not to have adopted the newer approach, which HMICFRS described in their report following their 2018 inspection of the LFB as "*worrying*".<sup>129</sup> This is a decision for the LFB, but I consider that the Inquiry will wish to examine the manner in which the LFB considered the significance of the national research, and the means by which the LFB made their determination to retain the analytical model, given the CFOA research that highlighted its weaknesses.

What constitutes adequate command training in light of diminishing experience?

136. I recognise that it would be attractive to think that there is a training solution or regime that either exists, or can be devised, that would provide a straightforward approach to making good the shortfall of operational experience. But it is not so simple, and this is far from an easy question to answer. Further, the reality is that the phenomenon of falling activity is a relatively recent one, and the means to address the issues require investment, leadership, and a long-term commitment, including by government; so, I must qualify my comments by indicating that only time will tell.

137. That having been said, as well as the research into command decision making, the CFOA paper considered above also seeks to address what it identifies as "*future challenges for incident command*"<sup>130</sup>, and this includes the challenge of improving incident command despite declining activity levels. It makes three points that, in my view, are relevant and helpful to consider.

138. First, it is noted that attendance at operational incidents alone, given the decline, is highly unlikely to provide sufficient opportunity to practise command and develop the full range of skills necessary for incident command.<sup>131</sup>

139. Second, the standard frequency of mandatory simulated incident command exercises that personnel are typically required to carry out in order to demonstrate competence (every 18-24 months) is unlikely, as a sole mandatory exercise, to provide enough practice for incident commanders.<sup>132</sup>

140. Third, the authors of the report were encouraged to note that their research indicated that even the most simulated command environments elicited similar patterns of decision making to real world situations. These simulated options, therefore, present a real possible solution for providing commanders with more regular opportunities to practise their decision making. However, the paper also notes that such simulated environments are less effective in relation to other non-technical command skills, such as communication and leadership, which require interaction with others. Nor do they recreate the real stresses experienced by

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<sup>128</sup> Witness statement of Graham Ellis {LFB00118230}, para 38; witness statement of Dany Cotton {LFB00118213}, paras 30-34.

<sup>129</sup> HMICFRS State of the Fire Service Report (2019), pp.11, 21 {SMC00000043}.

<sup>130</sup> The Future of Incident Command (CFOA, 2015) {LFB00118236}, from p.24.

<sup>131</sup> The Future of Incident Command (CFOA, 2015) {LFB00118236}, p.25.

<sup>132</sup> The Future of Incident Command (CFOA, 2015) {LFB00118236}, p.25.

commanders when facing a real world situation. The authors conclude, therefore, that simulation is only a partial solution and it would not be advisable to replace more realistic exercises completely with computer simulations, but to use a combination of the two.<sup>133</sup>

141. The decline in operational command experience was the subject of a further report produced by Dr Cohen-Hatton and Phil Butler for the National Command & Control User Group (NCCUG) in 2017, as a result of the outcomes of the 2015 command research.<sup>134</sup> The report comments on the implications of a reduction in incidents, as well as explaining how other factors also limit the opportunities for incident commanders to gain experience (for example, work location). It outlines ten elements to command experience, stressing that commanders should have adequate opportunity to exercise all these elements, either directly (through incidents) or indirectly (through simulations or observation). The paper goes on to explain how those elements of experience are directly linked to command skills, as identified in the National Operational Guidance, and how a lack of experience or opportunity to practise those skills can have a detrimental impact on incident command. By way of a solution to this issue, it sets out a number and range of different training methods that exist and which complement real command experience, emphasising that, *"Whilst it is difficult to replicate lost experience completely using one intervention exclusively, this can be achieved using a combination of methods... The precise combination can vary depending on who is to receive the training and the level of command. It is important that services consider the individual needs of each commander, in line with their exposure to command and individual experience"*.<sup>135</sup>
142. It is for each individual FRS to consider their approach to addressing their training obligations, in accordance with the particular requirements and risk profile of their own Service. Within this, they must determine how frequently incident command training needs to occur, deciding the appropriate balance between the knowledge required to fulfil command roles, alongside the need to train commanders to deal with the most serious of incidents anticipated. In my view, though, both the findings of the 2015 CFOA paper and the 2017 NCCUG report subsequently produced provide an extremely helpful starting point for each FRS to consider when formulating their own command training strategy.

#### Adequacy of the LFB's Incident Command training

143. It will be necessary as part of Phase 2 of the Inquiry to review the LFB's Incident Command training that was in place before the Grenfell fire, in order to understand what the possible deficiencies were that might have led to particular courses of action being taken or not taken on the night of 14 June 2017. I have been able to review a number of training materials that have been part of the LFB's disclosure to the Inquiry, and have also been assisted by the witness statements that have been

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<sup>133</sup> The Future of Incident Command (CFOA, 2015) {LFB00118236}, p.27.

<sup>134</sup> 'Complementing Incident Command Experience: A Guide for Fire and Rescue Services' {LFB00118182}, and see the witness statement of Sabrina Cohen-Hatton {LFB00110660}, para 61.

<sup>135</sup> {LFB00118182} p.7.

provided by Gordon Reynolds and Cara Kelly of Babcock Training Limited (“Babcock”) which exhibit some training materials.<sup>136</sup> However, it is surprising that none of the witness statements provided by the LFB contain a clear explanation of specifically what the content of the LFB’s Incident Command training was before the fire, or provide as exhibits the actual training material in which this information is contained. For example, the statements of AC Peter Groves<sup>137</sup> set out in some detail the procedures that are followed when training is developed and exhibit many of the procedural forms (Training Commissioning and Alteration Process Forms, or TCAPs) that are used as part of this process, but these do not address the content of the training and no training materials (such as slide shows or stills from training videos) are exhibited to the witness statements. The TCAP forms are not training materials and do not enable me to reach any conclusions about the content or quality of the training that was in fact being delivered up until 14 June 2017.

144. For this reason, I am far from sure that the documents that I have reviewed, both from the LFB’s disclosure and from the Babcock witness statements, represent a complete picture. The material does enable me to make some high-level observations, which I set out below, but I would emphasise that these should be treated as preliminary at this stage. The issue of the LFB’s Incident Command training will need to be kept under review as part of Phase 2 and I will revisit the issue once there is a more complete picture.

145. The overall impression I have is that the LFB’s Incident Command training did not prepare personnel for the possibility of needing to evacuate a high-rise building with no pre-existing evacuation plan; specifically, when this decision should be taken and how an evacuation should be carried out. This is consistent with the witness statement that has been provided by Commissioner Andy Roe, in which he confirms that at the time of the Grenfell fire, there was no explicit guidance or direction in any of the LFB’s policies or training as to when and how stay put should be withdrawn and alternative strategies followed.<sup>138</sup> I have seen some training documents that mention the possibility of changing stay put advice and/ or evacuating residents, but this is not addressed in any detail and nothing that I have seen would indicate that the training provided actually addressed when and how this should happen. One example of this is the Blackwall Tower exercise,<sup>139</sup> and the Holcroft House Command Decision Exercise that is exhibited to the statement of Cara Kelly is similar in this respect.<sup>140</sup> Another example is the Level 2 Incident Command, BA Sector, Trainer Guide that is exhibited to Gordon Reynold’s witness statement.<sup>141</sup>

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<sup>136</sup> First witness statement of Gordon Reynolds {BAB00000074}; second witness statement of Gordon Reynolds {BAB00000076}; witness statement of Cara Kelly {BAB00000075}.

<sup>137</sup> First witness statement of Peter Groves {LFB00055126} and exhibited report {LFB00055127}; second witness statement of Peter Groves {LFB00102138}.

<sup>138</sup> Witness statement of Commissioner Andy Roe {LFB00083834} para 28.

<sup>139</sup> {LFB00003764}.

<sup>140</sup> {BAB00000011} p.69.

<sup>141</sup> {BAB00000024} p.7.



146. I have also seen some material that suggests that the LFB were intending to raise awareness of the risks of construction materials, including insulation materials, amongst operational staff. The 'Highly Insulated Buildings' packages for station-based staff and for Station Managers are exhibited to the witness statement of Cara Kelly and state that the aim of the training was to increase awareness of highly insulated compartments and associated operational considerations, and how this technology may fail.<sup>142</sup> Slide 7 (of both packages) refers to thermal insulation boards which it states are increasingly used in external cladding. Slide 11 of the package for station-based personnel and Slide 10 of the package for Station Managers state that *"the same developments that have been designed to retain heat within a compartment can have a negative effect when fire is introduced to the environment."* Ms Kelly explains in her statement that this particular training was in fact never provided due to technical reasons.<sup>143</sup> These will be matters for consideration during Phase 2.

147. I would also note the commentary of Dr Cohen-Hatton in her witness statement in relation to the LFB's proposed programme of revalidation of incident command, which seems to have been in response to the issues identified in the 2015 CFOA paper.<sup>144</sup> As Dr Cohen-Hatton explains, the intended revalidation programme was in order to ensure that Incident Commanders' competencies were revalidated (that is, subject to a programme of continual and regular assessment) so that they had sufficient operational knowledge and experience to respond competently at incidents. Significantly, it was recorded in November 2015 that, at that time, it was only the initial Level 1 Incident Command training course (Crew and Watch Managers) that had an assessable element. There was an assessment of incident command competence for more senior roles, but this was carried out at the point of entry to that role (so at the time of promotion), rather than on a rolling basis as part of continuous professional development – as is the model in other FRSs – after the officer had been promoted. Further, it appears that, in the period 2012 to 2015, there were significant proportions of the officers undertaking those command assessments who failed this element, and it is not clear what further action was taken in respect of those individuals.<sup>145</sup> The proposed revalidation programme was intended to remedy these deficiencies. It is clear, though, that despite work having begun in relation to the programme in 2015 (or possibly earlier), implementation had not occurred by the time of Dr Cohen-Hatton's departure from the LFB, in November 2017.<sup>146</sup> The independent review into training that was commissioned by the London Fire Commissioner after the Grenfell fire expressed further concern in this respect,

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<sup>142</sup> {BAB00000016} and {BAB00000009}.

<sup>143</sup> Witness statement of Cara Kelly {BAB00000075} paras 16 – 40.

<sup>144</sup> Witness statement of Sabrina Cohen-Hatton {LFB00110660} paras 61-63 and see the exhibited report on the revalidation programme to the Commissioners Group dated 17<sup>th</sup> November 2015 {LFB00118186}.

<sup>145</sup> {LFB00118186} paras 9, 14-15, Appendix II. See also The Future of Incident Command (CFOA, 2015), pp.35-36 {LFB00118236}, which notes that the approach to providing assurance of incident commanders' ongoing competence varies throughout the UK, but as an example indicates that this *"may typically involve a formal assessment every 18-24 months."* Further, the first edition of the Foundation for Incident Command referenced above, notes that *"Once appointed [incident commanders] should periodically be required to demonstrate competence in their role"* {SMC00000045} p.3.

<sup>146</sup> Witness statement of Sabrina Cohen-Hatton {LFB00110660} para 91.



stating that *“there is currently no method of assessing performance with regard to incident command competence”*, and listed as a ‘high priority’ recommendation that *“LFB should take necessary steps to introduce a system of incident command revalidation as a matter of urgency”*.<sup>147</sup> The same concern was also reflected in the HMICFRS report following the 2018 inspection, which noted that *“The brigade doesn’t have regular assessments of command skills, which limits its ability to assure itself that all incident commanders have maintained their competence”* and recommended that by February 2020, the LFB should develop a plan to reassess incident command competence at all levels in line with national guidance.<sup>148</sup>

148. Finally, I have reviewed in detail a report authored by Babcock in July 2013, which is exhibited to AC Groves’ second witness statement, entitled “Initial Programme Course Review, Incident Management Training.”<sup>149</sup> As AC Groves explains, the report was produced as part of Babcock’s review of the LFB’s training courses in the first three years of Babcock’s contract. The report contains various references to Incident Command training courses and training scenarios (for example, there are said to be 11 role-based courses that make up the core suite of Incident Management Training).<sup>150</sup> I have been unable to locate any material relating to these courses within the documents that have been provided to me and I do not know if they remained current as at 14 June 2017, or what had replaced them if not. I also do not know to what extent the recommendations outlined in this report were accepted and implemented by the LFB. These will also be matters for consideration during Phase 2.

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<sup>147</sup> Ribband Star report {LFB00067786} pp.24-25.

<sup>148</sup> HMICFRS report {SMC00000011} pp.22, 39.

<sup>149</sup> {LFB00102216}.

<sup>150</sup> {LFB00102216} pp.5 and 11, which includes the course codes.

## **Part C: Assessment of firefighting on the night of 14 June 2017**

### **Introduction and Phase 1 conclusions**

149. The Phase 1 report sets out many findings as to the adequacy of the firefighting measures taken on the night of the fire, and in considerable detail.<sup>151</sup> For the avoidance of doubt, I agree with those findings overall.

150. That having been said, I consider it helpful to add clarity around one aspect, as this will require consideration as part of Phase 2; specifically, the issue of water supplies. I should add that I am aware that the Inquiry will receive a report from a water supply expert, so my focus is exclusive to the operational facet rather than any wider water supply aspects.

### **Water supply**

151. I agree with what is said about DAC O'Loughlin's time as incident commander at paragraph 28.76 of the Phase 1 report. But I would add further comment in relation to the issue of water supplies, and this consideration should also be seen to frame subsequent comments I will make regarding the deployment of other pieces of equipment that require large volumes of water – namely, aerial appliances, ground monitors and light portable pumps.

152. The LFB's Policy 238 on Incident Command Procedures provides the basis for the LFB's Command Structures. Essentially, it requires an IC to establish priorities and allocate specific tasks and resources to sectors.<sup>152</sup> In the case of a fire (remembering that PN238 covers all types of emergency), this should encompass the need to secure adequate water supplies.

153. This water supply consideration also forms part of the LFB Control Room response to an incident, specifically, a 'Make Pumps Eight' message<sup>153</sup> requires that a Bulk Media Adviser (BMA) be informed.<sup>154</sup> In relation to Grenfell, GM Welch was notified and attended in this role. However, and significantly in my view, he dispensed with his BMA responsibility in favour of assuming command around 02:00, and when DAC O'Loughlin took command shortly after this, he assigned GM Welch to be fire sector commander inside the tower.<sup>155</sup> GM Welch did not appear to make DAC O'Loughlin

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<sup>151</sup> Phase 1 report, Vol IV, Chapters 28, 29 and 30.

<sup>152</sup> PN238 Incident Command procedures {LFB00000164}, Section 5.5, bullet points 1, 2, 4, 5 and 6 particularly.

<sup>153</sup> ORR v.0.7 {LFB00032988} outlines this on p.33, bullet point 9 and also p.43, bullet point 10. The BMA was notified at 01:19:27, p.35, and responded at 01:24:53, p.45. All fire control systems have the means to establish pre-determined mobilising and notifications measures triggered by requests for additional resources.

<sup>154</sup> The LFB's Policy 162 on Officer Responsibility at Incidents {LFB00000240}, Section 7.1, describes the role of the BMA as one of supporting and guiding the IC with regards to the provision and tactics of using bulk firefighting media at incidents. This would include advising on the provision of water supplies via high volume pumping capability and hose laying capability, as well as liaising with water and sewerage undertakers regarding provision of water supplies.

<sup>155</sup> Phase 1 Report, Vol II, 14.52.

aware that this then meant that there was no-one occupying the role of BMA; nor is there evidence that DAC O'Loughlin clarified the role that GM Welch had been mobilised to fulfil.

154. I have not located any evidence that there was then any meaningful consideration given to the need to augment the existing water supply by DAC O'Loughlin. That is not to say that the issue was totally ignored, as DAC O'Loughlin makes reference to assigning GM West responsibility for command support (including water supplies), stating that he also assigned SM McConochie to assist GM West,<sup>156</sup> but I have seen no evidence to suggest that it was given a high priority by DAC O'Loughlin. To illustrate the point, GM West's statement is silent on the water supply issue<sup>157</sup> and, whilst SM McConochie confirms that she was tasked to assist with command support, she does not refer to GM West or to water supplies, describing her role as getting a map of the incident ground.<sup>158</sup>

155. When AC Roe then took over at 02.43, he received a brief from DAC O'Loughlin, who stated that a command structure was being implemented, and identified that GM West was responsible for the Command Support sector.<sup>159</sup>

156. AC Roe subsequently made DAC O'Loughlin his Operations Commander but retained personal responsibility for command support (which should have encompassed the issue of water supplies). AC Roe did make DAC O'Loughlin aware that a further DAC had been requested to undertake the command support function,<sup>160</sup> and his record of actions indicates that he stressed the importance of BA Support to DAC O'Loughlin.<sup>161</sup> I can find no evidence, however, that there was dialogue around the need to address the water supply issue. My opinion on this, therefore, is that, although GM West had notionally been assigned to a command support role, this was more related to the need to support BA Main Control, rather than him being given a clear brief to consider the need to augment the water supply.

157. Despite numerous accounts of a recurring problem with water supplies, I have seen no evidence that, from that time and from the incident command perspective, the water supply issue was given any noteworthy consideration for a period of nearly three hours.

158. With that said, there was an attempt made to address the matter at the tower itself, and I would refer here to the role played by GM Matthew Cook. GM Cook again makes no reference to timings, but his witness statement describes recurring problems with water and the efforts he made to improve the situation, by assigning SM Gareth Cook

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<sup>156</sup> DAC O'Loughlin witness statement {MET00012563}, p.16, para 2.

<sup>157</sup> GM West witness statement {MET00017073}.

<sup>158</sup> SM McConochie witness statement {MET00017430}, p.5, para 3.

<sup>159</sup> AC Roe Record of Actions {MET00005405}, p.2, Table entry "02:44." See also AC Roe Witness Statement {MET00007520}, p.4.

<sup>160</sup> Phase 1 report, Vol III, paras 17.10 and 17.129 – the request was made at 03:08:30.

<sup>161</sup> AC Roe Record of Actions {MET00005405}, p.3, Table entry "02:54."

to be responsible for the Water Sector.<sup>162</sup> SM Cook, correspondingly, refers to this exchange in his statement, but makes no reference to being appointed a water sector officer. Rather, he specifically refers to the attempt to get a light portable pump to work (though his account is vague in relation to whether this was achieved),<sup>163</sup> and he does not describe the bigger water responsibility at all. Nor did he refer to his water officer role when providing oral evidence during Phase 1 of the Inquiry.<sup>164</sup>

159. Notwithstanding the variation in accounts, at some point after this, GM Cook stated that he informed AC Roe and DAC O'Loughlin that water supplies had been secured.<sup>165</sup> I can see no basis for GM Cook's confidence as, on the contrary, water supplies continued to be a major factor. Furthermore, AC Roe's record of actions makes no mention of this discussion.

160. AC Roe's request for an additional command support officer resulted in DAC Drawbridge attending, and being given responsibility for command support at 03.58.<sup>166</sup> He established himself on CU1, which was already located on Bramley Road, to the west of Grenfell Tower, some distance away from CU7 and CU8. He assembled a list of seven objectives, broadly designed to *"keep the fire fighting and the search and rescue running"*,<sup>167</sup> although, surprisingly, the need to ensure a good water supply was not on his list of objectives. He identifies that *"water for fire fighting...normally falls under the remit of sector command, command support"*,<sup>168</sup> but that this was not part of his briefing, and he is silent on what action he subsequently took in terms of improving the water situation. He indicates that he held a belief that SM Cook was in charge of water for firefighting (I am unclear how he formed this view), but states that he was unable to contact SM Cook for a long period of time. Beyond this unsuccessful attempt at communication, he does not appear to have initiated any practical measures. In this respect, I have also reviewed the witness evidence of DAC Fenton, who would have been the point of contact for DAC Drawbridge as the officer responsible for the Brigade Co-ordination Centre (BCC) in the LFB Control Room. DAC Fenton is similarly silent on the question of water supplies.

161. The first evidence I have seen of a command decision to address the problem of augmenting water supplies occurred at 05.50.<sup>169</sup> This followed a briefing from GM Goodall to AC Roe, in which GM Goodall described the continuing problem and the endeavour to deploy a light portable pump, and AC Roe requested an additional BMA

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<sup>162</sup> GM Matthew Cook witness statement {MET00007948} pp.16-17. See also witness statement of SM Mulholland {MET00007865} who identifies that GM Cook also indicated to SM Mulholland that SM Cook had been made Water Sector, p.8, para 5.

<sup>163</sup> SM Cook witness statement {MET00007882}, pp.15-17.

<sup>164</sup> The only reference I can locate in which SM Cook refers to the water supply issue, relates to low pressure inside the building: Cook Day 28/232-233.

<sup>165</sup> GM Cook witness statement {MET00007948}, pp.16-17.

<sup>166</sup> LFB ORR v.07, p.331 {LFB00032988}.

<sup>167</sup> DAC Drawbridge witness statement {MET00010104}, p.6.

<sup>168</sup> DAC Drawbridge witness statement {MET00010104}, p.8, para 2.

<sup>169</sup> AC Roe Record of Actions {MET00005405}, p.8. Table entry "05:50."



(SM Payton) at around 06.01.<sup>170</sup> SM Payton arrived at 06.30, though it was nearer 07.30 before he had been briefed and got a sense of the incident.<sup>171</sup> The upshot of this was that five and a half hours had elapsed between the time that GM Welch dispensed with his BMA role, and the time a dedicated BMA attended and was briefed.

162. Finally, in the context of the command dimension of the water supply issue, I should also make mention of the role and function of the Commissioner in the capacity of Monitoring Officer (MO).

163. The LFB's Monitoring Officer Policy 424, at section 3.1, outlines eight duties of an MO and these are contextualised and further expanded upon in Section 4.<sup>172</sup> For present purposes I would use the Commissioner's own summary of the role: *"...because Monitoring Officers are not directly in charge of the incident they are able to step back and have that wider view of the incident. It's a very useful role for information sharing and offers a means of double checking with people in terms of what's actually going on..."*<sup>173</sup> If necessary, the MO is empowered and expected to step in and take command but, equally, they should provide assistance, and act as a check and balance, even if it is not deemed necessary to take command.

164. The Commissioner suggests that the need to consider water supplies is central to the role of the incident commander<sup>174</sup> and she makes specific reference to the problems with water supplies on the night:

*"...That night we had water issues. Firstly, you're never going to have enough water to put out a fire like Grenfell Tower, and secondly, the water supply was being compromised by the debris falling onto the hoses and severing them. A water officer role was assigned to address these issues..."*<sup>175</sup>

165. I acknowledge that the Commissioner was trying to make a point about the size of the fire in the first part of her statement, and there is no doubt that the amount of water required even to attempt firefighting was going to be a major undertaking. But even making allowance for this, Grenfell is not the first huge fire dealt with by the LFB, and its size should not obscure the fact that the provision of water is a basic

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<sup>170</sup> LFB ORR v.0.7 {LFB00032988} p.429 and 442.

<sup>171</sup> SM Payton witness statement {MET00010821}. This statement provides a comprehensive account of what a BMA role would entail. On pages 2 and 3 SM Payton also describes the capability of high volume pumps and the LFB's hose laying lorries.

<sup>172</sup> LFB PN 424 Monitoring Officer {LFB00000731} pp.3-4.

<sup>173</sup> Commissioner Cotton witness statement {MET00012492}, p.3.

<sup>174</sup> Commissioner Cotton witness statement {MET00012492}, p.16, para 3.

<sup>175</sup> Commissioner Cotton witness statement {MET00012492}, p.18, para 2. In passing, I should mention that DAC O'Loughlin is one of very few officers who do not express a concern with water supply problems on the night. He says this in his statement: *"... 'I didn't get directly involved in the water supplies as this fell under the remit of Command Support and Steve WEST and then Lee DRAWBRIDGE. I don't recall any specific issues or problems, but I have no doubt that it was challenging at times as we were looking to continually supply 4 Ground Monitors and 4 firefighting jets'...."* (DAC O'Loughlin witness statement {MET00012563}, p.26, para 1).

consideration of any command structure for a major fire; indeed, the national operational guidance identifies that water for firefighting is a vital control measure.

166. Clearly, supplementing or augmenting a water supply, with the amount of water necessary for a fire like Grenfell, is not an easy undertaking and takes time,<sup>176</sup> so the necessary resources should be mobilised as early as possible. The means to address the provision of water supplies using high volume pumps,<sup>177</sup> hose laying lorries, etc,<sup>178</sup> is described in *Fire Service Manual, Volume 1, Fire Service Technology Equipment and Media, Hydraulics, Pumps and Water Supplies* (2001), Ch 7, Pre-planning (but see especially 7.7.1 – 7.7.4).<sup>179</sup> This manual also illustrates that there is a degree of complexity associated with setting up extra water provision, underlining the importance of having a dedicated sector for water, with an officer who is not distracted by being caught up in the frenetic activity at the scene itself.

167. In conclusion, therefore, I struggle to understand, given the reports about water supply problems, and given the size of the fire, how the absence of any substantial or effective water strategy failed to register as an essential element of a command structure, and does not appear to have been acted upon at an earlier stage. There is no evidence that the necessary capability (high volume pumps, hose laying capability, etc) was ever requested or mobilised, even as a precautionary measure. GM Welch had been mobilised as a BMA and, even though he 'Made Pumps 40' and declared a major incident because of the size of the fire, he took no action in relation to water supplies. Equally, when DAC O'Loughlin took command, the issue of water supply was a major factor and should have formed an explicit part of his incident command structure, rather than being assumed to be encompassed as part of a wider command support role. The same can be said of AC Roe when he took command nearly an hour later. Furthermore, the gap should have been observable to the Commissioner in her MO role, not least as she readily acknowledges that water was a major issue with this fire; and, finally, the gap should also have been apparent to DAC Drawbridge in his command support role.

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<sup>176</sup> Again, PN 162 {LFB00000240}, Section 7.1, describes the role of the BMA as one of guiding the IC with regards to the provision of, and tactics to be applied when, using bulk firefighting media at incidents. This would include advising on the provision of water supplies via high volume pumping capability and hose laying capability. For information GM Goodall was also a BMA and provides a similar overview of the role in his statement {MET000083296}, pp.3-4.

<sup>177</sup> I cannot locate information about how many High Volume Pumps the LFB currently retains as part of its fleet, but, when I was a Chief Officer, the LFB had 6 HVPs and 5 Hose Laying Lorries.

<sup>178</sup> National Operational Guidance, *Control measure Request National Resilience resources for high volume pumps* {SMC00000006}.

<sup>179</sup> *Fire Service Manual, Volume 1, Fire Service Technology Equipment and Media, Hydraulics, Pumps and Water Supplies* (2001), Ch 7 Pre-planning (but see especially 7.7.1 – 7.7.4).

## Equipment issues

### Aerials and Ground Monitors - External firefighting

168. I propose to consider the deployment of aerials and ground monitors together because they comprise the external firefighting arrangements. I also think it helpful to refer to the relevant parts of the reports of other experts, in particular Dr Lane's Supplemental report, Section 17 of which covers external firefighting (in particular, 17.3, 17.4 and 17.5), as well as Professor Bisby's comments relating to downward fire spread.

### Aerials

169. The Operational Response Report (ORR) defines a Turntable Ladder (TL) as *"a vehicle with a ladder which has the capability of reaching 32 metres (approximately 10 floors). It has a detachable cage which can hold three people. It can be operated at ground level or from the cage."*<sup>180</sup> An Aerial Ladder Platform (ALP) is *"a vehicle-mounted ladder which can reach up to 32 metres (approximately 10 floors). It has a cage at the top which can hold four people. It can be operated either from the ground level or from within the cage."*<sup>181</sup>

170. The Phase I report makes the following findings about the use of aerial appliances on the night of the fire:

- **Paddington's Turntable Ladder (A213)** arrived at the incident around 01.32 and was situated on the east side of the tower. The TL was positioned about 10 or 12 feet away from the building and, despite restricted access,<sup>182</sup> was able to reach to about floor 10.<sup>183</sup> At some point in time after that (FF Reynolds suggests it was between 30 and 40 minutes<sup>184</sup>), the amount of falling debris became too dangerous, so the TL was moved to the south side of the building from where the crew tried to carry out a rescue of a resident they had seen at a window on floor 4 or floor 5. However, the TL could not extend far enough and it was then parked underneath the covered walkway in order to protect it from the falling debris.<sup>185</sup> Dr Barbara Lane in her supplemental report notes that the latest visual evidence of A213 applying water to the eastern side of the building was taken at about 02.05.<sup>186</sup> This was probably shortly before it was moved underneath the walkway and stopped operating.

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<sup>180</sup> LFB ORR v.0.7 {LFB00032988}, p.515.

<sup>181</sup> LFB ORR v.0.7 {LFB00032988}, p.485.

<sup>182</sup> FF Reynolds witness statement {MET00010894}, p.4, para 1.

<sup>183</sup> Phase 1 report, Vol II, para 12.22.

<sup>184</sup> FF Reynolds witness statement {MET00010894}, p.5, para 2.

<sup>185</sup> Phase 1 report, Vol II, para 14.118-14.119.

<sup>186</sup> Dr Lane supplemental report, 17.3.62 {BLAS0000017}.

- **Soho's ALP (A245)** arrived at the incident at about 01.52 and was also sited on the east side of the tower, on the grass and behind the trees, about 7 metres from the tower.<sup>187</sup> It took about seven minutes to set up the ALP. The crew (CM Christopher Frost and FF Jason King) should be commended for their initiative in manoeuvring the appliance to the position it then occupied for much of the night (until Surrey's ALP arrived). It was a fundamental breach of procedure to pitch this heavy appliance on grass in the manner they did, but it was a calculated risk and, in my view, a good use of initiative. Initially, the crew experienced problems with the ALP being stuck in the slower mode, and the in-built radio not working,<sup>188</sup> and they also experienced problems with water supplies. Consequently, the crew again used their initiative to 'lash' a high-pressure hose reel onto the cage of the ALP, and operated the appliance from the ground in this way. To use their own words, *"in the context of the fire brigade it was almost like using a high pressured garden hose to fight the fire"*<sup>189</sup> but it nevertheless proved to be an effective arrangement which remained in operation for around five hours. More to the point, it enabled the crew to limit the spread of the fire around the areas to which the jet was applied, including around a window in the region of floors 11 to 13 where a man had been seen.<sup>190</sup>

Dr Lane in her supplemental report notes that water appears to have reached as far as floor 18 on the east side of the building (though she does not state which appliance in particular is likely to have achieved this, or whether it was a combination of both), and further states that there appears to be a strong correlation between the levels to which external water was applied and the lack of external fire damages on these levels.<sup>191</sup> I will say more on this shortly.

- **Surrey's ALP:** Surrey FRS Control contacted the LFB's control room at about 04.23 to offer the use of their 42-metre ALP. Sometime later, at around 06.40, AC Roe accepted that offer and N245 Leatherhead was mobilised. It reached the incident ground at about 08.21.<sup>192</sup> There is some evidence to suggest that that appliance was used<sup>193</sup> but not until significantly after the last casualty was rescued and, in my view therefore, not material to this consideration of the Inquiry.
- **Wimbledon's ALP (H345) and Wembley's ALP (G305):** The Phase 1 Report does not make comment on the other two aerial appliances mobilised to Grenfell, but for the sake of completeness, these were the Wembley ALP (G305) which arrived at around 02:59:51, and the Wimbledon ALP (H345) which arrived around 20 mins later at 03:18:33.<sup>194</sup> The evidence is vague, but the statement of the driver of the Wembley ALP suggests that congestion and access was an issue, and that both

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<sup>187</sup> See Dr Lane supplemental report, figure 17.24 and para 17.3.73 {BLAS0000017}.

<sup>188</sup> Phase 1 report, Vol II, paras 13.30-13.35.

<sup>189</sup> {MET000083294}, p.6, para 5.

<sup>190</sup> Phase 1 report, Vol II, para 14.120.

<sup>191</sup> Dr Lane supplemental report {BLAS0000017}, 17.4.5 and 17.4.6.

<sup>192</sup> Phase 1 report, Vol III, para 19.70.

<sup>193</sup> Dr Lane supplemental report {BLAS0000017}, 17.3.9 and figure 17.33.

<sup>194</sup> LFB Short Incident Log {MET00013830}, p.9.



these appliances manoeuvred to be parked together in the vicinity of the Leisure Centre,<sup>195</sup> and that neither appliance was used.<sup>196</sup>

### Ground monitors

171. It is important to draw a distinction between a hand-held jet and a ground monitor because, on occasion, the expression 'jet' has been used to describe both; but their respective operational effectiveness varies considerably. I have therefore included images of both pieces of equipment to aid understanding, and I will explain their use more fully:



*Figure 3 Ground monitor and Hand-held jet*

172. A handheld jet is depicted in the bottom image and, as the name suggests, comprises a branch<sup>197</sup> connected to standard fire hose (usually 70mm for external firefighting). It is designed to be held by one or, more usually, two or more, firefighters. There are practical limitations when applying water to a high building using hand-held jets (even

<sup>195</sup> Witness statement of John Reynolds {MET00012683}, p.4.

<sup>196</sup> Dr Lane also states in section 17.3.76 of her supplementary report that she does not know what happened to the other two aerial appliances that attended the incident, specifically whether the limited vehicular access to the site might have prevented their use.

<sup>197</sup> ORR v.0.7 {LFB00032988}, p.487 describes the two different types of branches in use in the LFB.

if hazards such as falling debris are ignored). These limitations relate to the balance between pressure, flow and the jet reaction created by the pressure in the hose and at the nozzle. If pressure is too low, there will be little throw, which is more acute when directing a jet vertically and trying to overcome the effects of gravity. Correspondingly, if pressure is too high, the branch will be uncontrollable even for 2 or 3 firefighters, and also risks bursting the delivery hose. This all means that hand-held jets will always have a limited reach and limited application when trying to be used in the circumstances of a high building.

173. A ground monitor, the top image in the figure above, is described in the ORR as “a nozzle fed by fire hose that may be set up and left unattended safely on the ground supplying a jet of water.”<sup>198</sup> It delivers a much greater quantity of water and is floor-mounted, which means that the energy from the jet reaction is directed down and absorbed by the ground. This enables a greater pressure to be used and a higher throw to be achieved especially when used vertically.<sup>199</sup> (In passing, I would mention that the image I have used also illustrates the ground monitor being supplied by a light portable pump and I will comment on the use of these pumps below.)

174. The Phase 1 Report noted that messages on the night stated that ‘monitors’ were in use, and that between 05.14 and 05.16 a message stated explicitly that two ground monitors were in operation.<sup>200</sup> In addition, there is some relevant evidence contained in some of the Phase 1 witness statements.

175. SM Wolfenden was mobilised at 01:31 and arrived at 02:12.<sup>201</sup> He described initially making his way to the north and west sides of the tower, and stated that he considered that there was a need to deploy an aerial appliance in this vicinity, which he thought could be manoeuvred in to position close to the north west corner of the building. However, concrete bollards were in place and these would need to be removed to enable access.<sup>202</sup> He was subsequently advised by another officer that these circumstances prevented the use of an aerial,<sup>203</sup> so SM Wolfenden instead instructed that two ground monitors be brought in to use. He identifies the location of these two monitors on a diagram which he exhibits to his statement.<sup>204</sup> I have found no direct photographic evidence of this – including from Dr Lane’s work – and, in fact, Fig 17.29 of Dr Lane’s report appears to show hand held branches being used in the playground on the west side of the tower rather than ground monitors. Nevertheless, I have reproduced SM Wolfenden’s diagram for information. All I can conclude, therefore, is that it is possible that ground monitors were in use on the north and west faces of the tower, at some point during the incident.

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<sup>198</sup> ORR v.0.7 {LFB00032988}, p.498.

<sup>199</sup> WM Collins witness statement {MET00010086}, pp.4-5.

<sup>200</sup> Phase 1 report, Vol II, para 20.3.

<sup>201</sup> Short Incident Log {MET00013830}, p. 13.

<sup>202</sup> SM Wolfenden witness statement {MET00017428}, pp.6-7.

<sup>203</sup> SM Wolfenden witness statement {MET00017428}, p.7 paras 2, 3, 4 and 5.

<sup>204</sup> SM Wolfenden exhibit {MET00017596}.



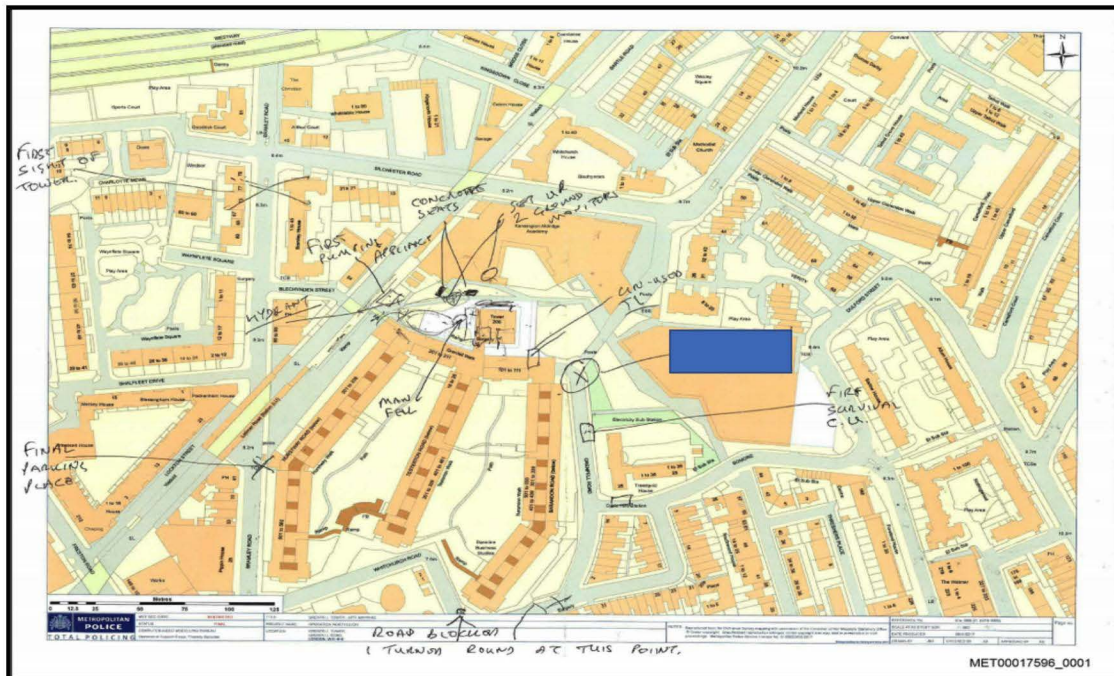


Figure 4 Exhibit PFW/1

176. WM Collins arrived as officer in charge of A211 at 01:31:29. He describes bringing a ground monitor into operation on the south side walkway of the tower sometime after this,<sup>205</sup> and applying water to an area where residents could be seen at the windows around floor 9 (Vol II, para 14.119 also describes this). The monitor appears to have been in use for the bulk of the incident's duration that is under consideration.

177. DAC O'Loughlin makes a number of references in his witness statement to the deployment of ground monitors, but summarises the situation of ground monitors in the following way (to a degree, corroborating the evidence of SM Wolfenden):

*"... We now had 4 Ground Monitors working, one on each of the four sides of the Tower and they were having some limited impact and were keeping the fire from taking hold in the areas they covered. They couldn't be placed too close because of the falling debris but were typically reaching up to the 5<sup>th</sup> or 6<sup>th</sup> floors. The Ground Monitors on the North and South sides were reaching a little bit higher because they were placed onto walkways. There wasn't any real issues with water supplies for these..."<sup>206</sup>*

178. I have found no other evidence of ground monitors being deployed, and conclude that any other hose streams/ jets that were used during the incident were all hand-held jets. This is relevant to the effectiveness of the equipment as I will explain.

<sup>205</sup> WM Collins witness statement {MET00010086}, p.7, para 3.

<sup>206</sup> DAC O'Loughlin witness statement {MET00012563}, pp.25-26.

### Effectiveness of external firefighting

179. In my view, the most helpful way to consider the effectiveness of the LFB's external firefighting is to consider, in the first instance, the extent to which crews were able to minimise fire spread on the outside of the building, and then to consider the specific aspects of aerial appliances and ground monitors.
180. From the outset, though, I would state that any evaluation of the effectiveness of external firefighting is extremely difficult.
181. This is because of the multiple obstacles associated with design and access difficulties, as well as the numerous construction and building design failures, but most especially the impact of the cladding. These aspects are described in detail by Dr Lane in Section 19 of her report, so I do not propose to repeat her commentary here. However, I would emphasise that the fact that the internal firefighting provisions of Grenfell Tower failed simultaneously with the failure of virtually all the other passive and active fire safety features, meant that the standard operational firefighting method normally employed for high-rise buildings by the LFB, could not be implemented. This presented a truly formidable challenge to the LFB, especially to the first crews. Expressed simply, Grenfell quickly moved from being a compartment fire; to multiple compartment fires; to multiple compartment fires, concomitant with the building itself being on fire. The circumstances meant that any operational response was always going to entail extensive improvisation.
182. I think it unreasonable, therefore, to suggest that the LFB ought to have anticipated an external fire of this nature and it is against this backdrop that my subsequent comments should be considered.
183. In spite of the challenges, the LFB were successful in applying water to all four sides of the building<sup>207</sup> and, in many respects, were effective. Section 17.4, and particularly section 17.4.5, of Dr Lane's report provides an analysis of the effects of external firefighting in relation to the prevention of downward fire spread, and I have reproduced her summary illustrations below.<sup>208</sup> The images show a strong correlation between the deployment of jets, monitors and aerials, and fire spread, indicating that the fire's downward spread was more limited on the south and east face, than it was on the north and west faces. This would suggest a higher reach for the jets applied to the south and east faces – more likely because of the use of aerials and monitors with a greater reach or throw – and would also suggest it more likely that hand-held jets were deployed to the west and north faces.<sup>209</sup>

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<sup>207</sup> Section 17.3.79 of Dr Lane's supplemental report {BLAS0000017}.

<sup>208</sup> Dr Lane supplemental report {BLAS0000017}. Note: the text of the referencing for Dr Lane's images requires reversing – so, Fig 17.35 is, in fact, related to the North and West faces (the images are correct) and similarly, Fig 17.35 should read "South and East" rather than "North and West".

<sup>209</sup> Dr Lane Supplemental Report {BLAS0000017}, figures 17.28 and 17.29 are both images of firefighters with hand-held jets on the West face (playground images) and the North face (Kensington Aldridge academy image).



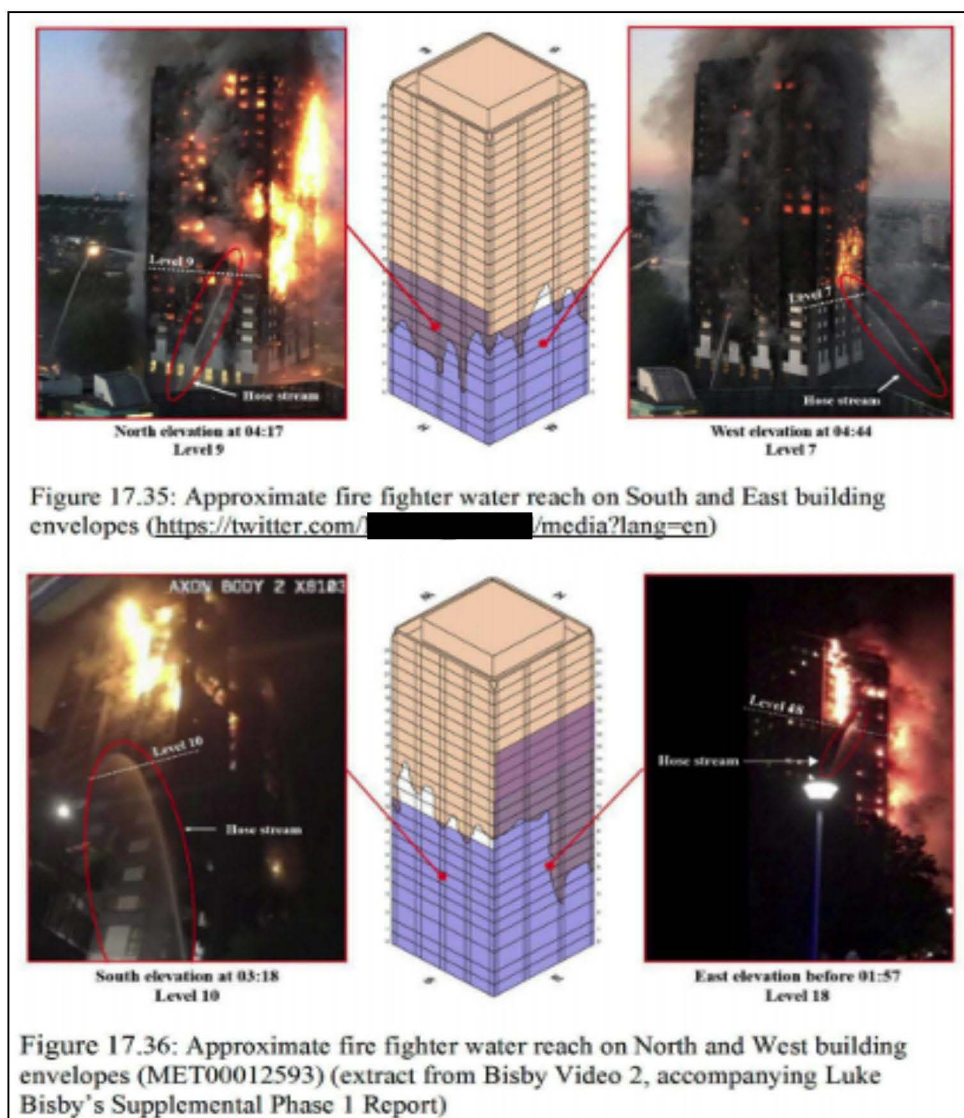


Figure 5 Correlation between downward fire spread and external firefighting

184. In support of this, I would also refer to Professor Bisby's expert report. This identifies that, *"it is noteworthy that both video and photo evidence appear to suggest that the downward vertical fire spread was limited primarily as a result of fire service intervention during the fire. This was because water was applied directly to the external cladding which was able to halt the downward progress of the fire."*<sup>210</sup>

#### Effectiveness of aerial appliances

185. In the specific context of aerial appliances, I would make the following additional observations:

186. I would commend the professionalism and courage of the first TL crew from Paddington, comprising CM Harriman and FF Reynolds (and note also the point I

<sup>210</sup> Professor Bisby supplemental report, {LBYS0000001} p.192, para 929.

make below regarding the crew's difficulties in fully extending the vehicle jacks). CM Harriman was one of very few people – in fact, as he was at the head of the aerial appliance he was possibly the only person – able to observe close up how the cladding behaved when on fire as well as, perhaps more significantly insofar as firefighting response is concerned, the impact of water. There has been considerable speculation about the potential for the LFB to have arrested the progress of the fire had an aerial appliance been deployed earlier, and I will provide an opinion on this below. But I have reproduced CM Harriman's comments here, as I consider that they provide important evidence in support of my expressed view:

*"...we started to put water onto the building...to fight the fire. We sprayed the water but it didn't really make any impact. I noticed the cladding fixed on the outside of the tower had a gap between itself and the building. We put approximately 2000 litres of water per minute onto the face of the building but it did nothing. The fire was in the corner of the building which went straight up to the top then started travelling downwards. There was three sections on each side of the building, it would go up one section move across to the next section then drop down. Our vehicle stayed where it was as long as we could keep it there. Due to the falling debris hitting our vehicle and the ladder which I have never seen before. We were forced to move away. Large sheets of flaming tin and other materials were falling down from above. Myself and Chris REYNOLDS were nearly hit a few times by the falling debris..."<sup>211</sup>*

187. I have already commended the initiative and approach of the second ALP crew, so would add nothing further to my previous comments.

#### Effectiveness of Ground Monitors

188. In terms of the effectiveness of ground monitors, it is clear from the evidence of Dr Lane and Professor Bisby that this piece of equipment was effectively used at the Grenfell fire, certainly on the south side of the tower, where it is certain that a ground monitor was deployed. The lesser rate of downward fire spread illustrates its effectiveness. However, the evidence in relation to exactly when and where other ground monitors were used is inconclusive; in fact, it is possible that between 1 and 4 monitors were in use at some point. So, anything beyond my overall and general comments in terms of external firefighting and the effectiveness of the combination of jets, monitors, and aerials would be speculation. Not least because, the effectiveness of a ground monitor – similar to aerial appliances – is contingent upon the availability of water supplies.

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<sup>211</sup> CM Harriman witness statement {MET00007867}, p.3, para 2. I would also draw attention to an image in Dr Lane's supplemental report that illustrates the difficulty facing this first aerial appliance crew – see Fig 17.18 {BLAS0000017}.

LFB's 32m aerial appliances

189. I have no direct knowledge in relation to the LFB's decision to procure 32m appliances but I am able to provide some general background and context to assist the Inquiry to focus its examination.

190. Whilst it is true that higher reach aerials have been available for many years, certainly as far back as the 1950's,<sup>212</sup> most fire brigades tended to standardise on 30m vehicles. Indeed, previous guidance effectively sustained this standard approach.<sup>213</sup> Appliances higher than 30m, however, tended to be mounted on larger, multi-axle chasses, which led to access and manoeuvrability problems, especially in congested cities. Consequently, these higher appliances tended to be used more in industrial settings, such as oil refineries, airports, etc. It is only relatively recently – around the early 2000s – and with the advent of rear steer facilities on specialist, large vehicles, that the manoeuvrability problem was addressed.

191. The difficulty of access and the potential to use these particular vehicles is further complicated by the fact that they have vehicle jacks fitted to provide stability when the ladder and cage of the appliance is extended, and these jacks require a large footprint.<sup>214</sup>

192. The specialist nature of this type of appliance means that there are a limited number of manufacturers, and, as a result, they are extremely expensive (around three times the cost of a standard appliance). Additionally, their use is limited, which, in combination with the cost of replacement, means that most FRSs have an extended life policy; typically, 15, even 20 years. This compares to a typical life policy of between 10 and 15 years for standard appliances (the variation relates to fleet rotation policies associated with FRSs that have a large number of 'on-call' fire stations in rural areas).

193. The upshot of this background, as far as the Inquiry is concerned, is that the LFB's procurement decisions around the fleet of aerial appliances in use at the time of Grenfell are likely to have been made some considerable time ago. I consider that as part of Phase 2, therefore, the LFB needs to provide an explanation of the decision behind the most recent procurement of the 32m appliances. I am not suggesting the decision was wrong but, in light of Phase 1 findings (in particular, that it is

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<sup>212</sup> My previous Fire and Rescue Service, Greater Manchester, had a museum, and included in the museum's small 'fleet' was a 150ft (45m) Turntable Ladder.

<sup>213</sup> See *Manual of Firemanship, Practical Firemanship II*, Book 12 (1983), Home Office, Part 1, Ch.1, *Rescues using ladders and hydraulic platforms*, pp.12-24 but, in particular, see Fig 1.9 on p.19.

<sup>214</sup> One of the reasons I commend the action of the Paddington TL Crew is that they undertook firefighting for a considerable period of time, despite falling debris and also despite being unable to fully extend the appliance jacks because of obstructions.

unsatisfactory that the LFB did not have access to a 42m appliance),<sup>215</sup> it is important to understand the reasons behind it.<sup>216</sup>

#### Effectiveness of the 32m aerials deployed on the night of 14 June 2017

194. I have already identified that the evidence of Professor Bisby and the evidence of Dr Lane establishes the effectiveness of external firefighting as it related to limiting the downward spread of the fire. Upward vertical spread, however, is a very different matter and affected by many other factors. Therefore, speculating on what might have happened becomes much more problematic.

195. It is possible that a higher reach appliance deployed earlier in the incident might have been able to reach a higher level of the tower, had the fire been on the 'right' side for which there was access. This might have enabled more water to be applied to the cladding which, in turn, might have retarded the progress of the fire, and/ or might have had some impact on firefighting in individual flats, with water being applied externally. Although, in that event, the aerial would not then have been effective or capable of preventing further, vertical fire spread.

196. Conversely, the cladding was designed to be weatherproof and repel water; and there were many and varied possible routes for fire travel as experts have observed;<sup>217</sup> and from a very early stage there was a major issue with falling debris that would have prevented the potential for external rescue, not to mention a major issue with water supplies.

197. It will be clear from the above, therefore, that offering an opinion on whether something as significant as the early deployment of a higher aerial would have improved matters in any material way, would be pure speculation. I have offered a broad opinion above, that aerial appliances are an important element of the capability necessary to address the potential for fires in high-rise buildings, but, beyond this, in my view, it is too speculative to consider how and in what way more extensive aerials might have contributed to the firefighting response at Grenfell.

#### Positive Pressure Ventilation

198. It was established during Phase 1 that a request for a Positive Pressure Ventilation (PPV) fan was made at 03.35 and AC Roe was recorded as asking that the PPV be used to clear the lobby of smoke at 04.51.<sup>218</sup>

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<sup>215</sup> Phase I report, Vol IV, 28.133.

<sup>216</sup> This issue is addressed to a certain extent by AC Mills in his Phase 2 witness statement {LFB00032841} para 32, but AC Mills does not explain whether consideration of appliances with a greater reach formed part of the LFB's procurement process.

<sup>217</sup> Professor Bisby supplemental report, {LBYS0000001}, Section 6.1.6, pp.177-184, provides a number of hypotheses with respect to upward vertical fire spread.

<sup>218</sup> Phase 1 report, Vol III, paras 16.87 and 19.28.



199. Positive Pressure Ventilation is a firefighting tactic that has been in use for many years in other countries and has been in widespread use, though not universal use, in the UK, for the last twenty or so years. It is a form of forced ventilation, as opposed to natural ventilation, and, like all forms of ventilation, relies on the principle that air will move from a region of high pressure to a region of lower pressure if there are no barriers to the airflow. The approach involves the use of large fans to introduce substantial volumes of fresh air into a confined space, in order to create a slight positive pressure within that space, relative to outside the space. The action of pressurising can be used to remove smoke from the (now higher pressure) space – in other words, ventilate – or, alternatively, prevent smoke from entering the space.
200. PPV is generally used as part of tactical firefighting to ventilate a structure to improve access to, and to assist in the attack at, the seat of the fire, but it can also be used to pressurise unaffected parts of the structure and to prevent smoke travel in to those unaffected areas. The tactic is sequential, and relies on first, using a fan to clear smoke from one space, then pressurising that space to prevent further smoke ingress. The way the tactic is deployed differs in relation to the type of building, but it is commonly used in multi-storey buildings and, as this provides the focus of the Inquiry, I will explicitly describe this application of PPV.
201. In these circumstances, therefore, a PPV fan(s) would be located at the entrance to the stairwell and the stairs cleared of smoke, before attacking the room of fire origin itself. If there is an outlet at the head of the staircase, the flow of air creates a small over-pressure which, alongside the “chimney” effect created by the interaction between the fan and the outlet, helps keep air flowing and the stairwell ventilated. In the event there is no outlet, then this will pressurise the stairwell to a greater degree. The use of PPV fans can be especially helpful in these instances if used alongside smoke curtains, and I will explain the use of these curtains in this context more, when I consider alternative firefighting approaches shortly. I have provided two diagrams by way of demonstration of these principles to assist the Inquiry’s understanding. The first illustrates the approach of venting a stairwell with an outlet at the head, and the second compares two images – one in which a fan is not being used to pressurise the staircase (the image on the left), and the other showing the fan in use. It can be seen that, in the second image, the pressurised staircase is relatively free from smoke:

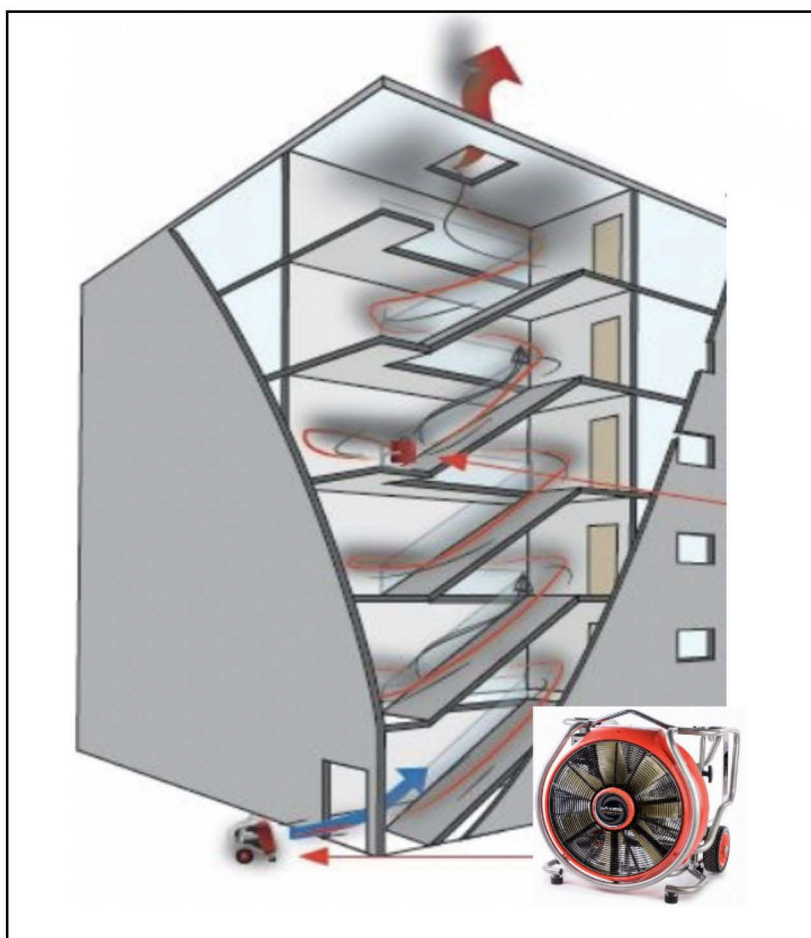


Figure 6 Example of ventilating/pressuring a staircase using a PPV fan

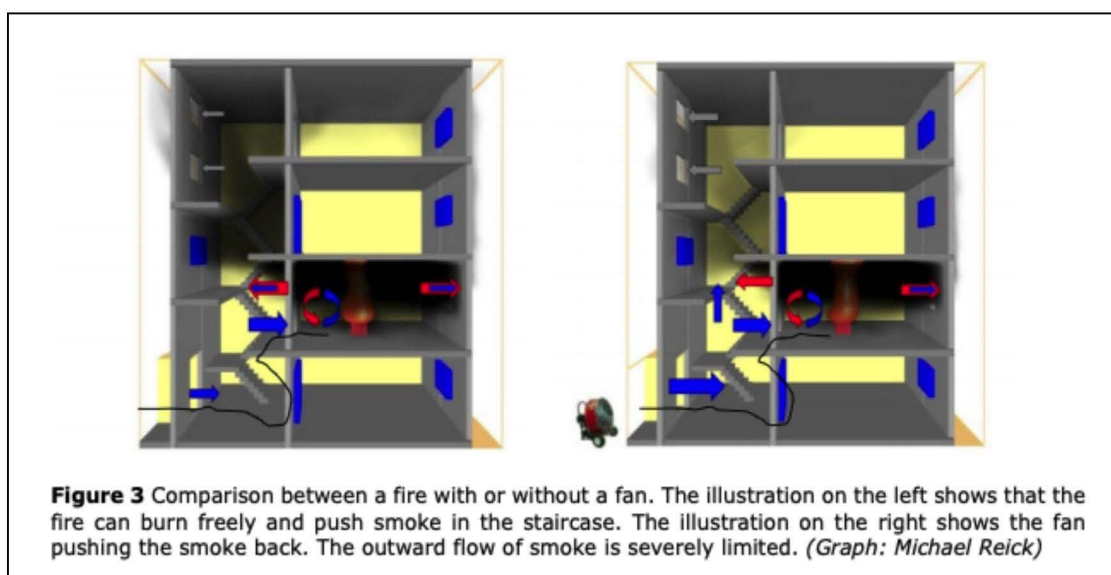


Figure 7 Images of PPV fans being used to pressurise a staircase

202. There are a considerable number of variables associated with the use of PPV as a tactic. These include, for example, the size and nature of the fire; the size and layout

of the building; the size and layout of the staircase; the number of inlets, relative to outlets; the capacity of the fans; and whether the building has a smoke extraction/smoke control system. This is not an exhaustive list, by any means, but even these variables illustrate that the decision to deploy PPV is considerably more complex than might first appear, and there are a sizeable number of risks and pitfalls.

203. These include, most notably, the potential to accelerate fire growth by virtue of supplying the fire with fresh air (fanning the fire); the potential to force smoke and fire towards previously unaffected areas of the building that may contain occupants or firefighters; and the potential to increase the risk of backdraught and flashover. The use of PPV, therefore, requires considerable practice and training to be used effectively.

204. In my view, consequently, there were a number of reasons why any advantages of PPV were unlikely to be realised at Grenfell – in fact, they were almost certainly never going to be realised. The most significant of these is that the layout of the tower did not lend itself to the use of this tactic. The staircase was not on an external wall, rather it formed the core of the tower, which meant that as there was no direct access to open air, there was nowhere to position a fan that would have had any positive effect. Any attempt to use PPV, for example at the entrance to the tower, therefore, was only ever going to pressurise the ground floor lobby at best. It was always more likely that it could even make the situation worse for people in the lobby, as it would draw in smoke from burning debris outside the tower. Largely speaking, the evidence suggests that this is what happened. I have included a floor plan of Level 2 of the tower to illustrate the point about layout:

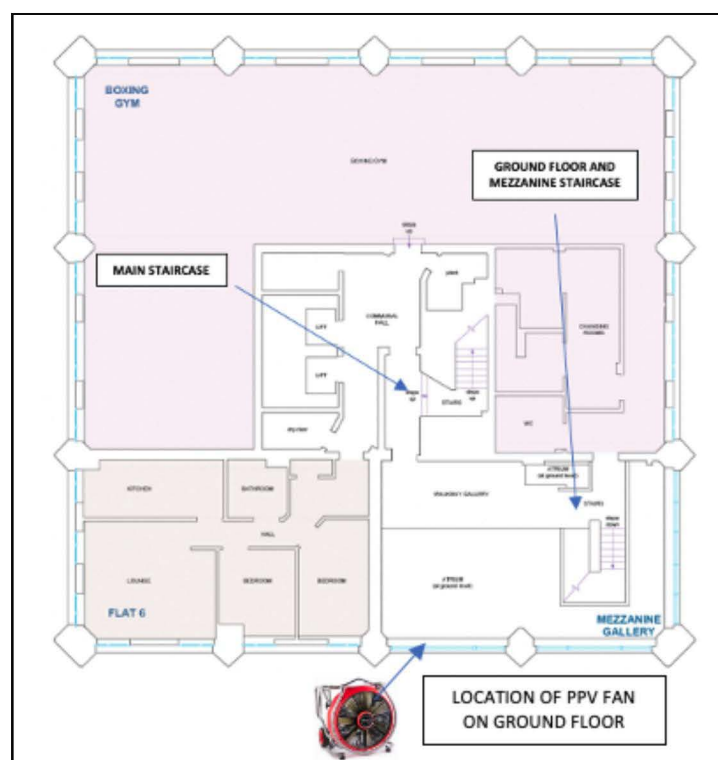


Figure 8 – illustration of PPV fan to inner staircase

205. Other factors that were also pertinent include:

- (i) The rapid spread and the size and intensity of the fire from a very early stage, as well as the effect of the building envelope being itself on fire;
- (ii) The multiple seats of fire on so many levels from an early stage;
- (iii) The need for residents to evacuate using the same staircase as firefighters gaining access for rescue and firefighting.

#### Light Portable Pumps

206. There is some evidence that a Light Portable Pump (LPP) was brought into the building foyer in the later stages of the incident, in order to try to secure water supply on the higher floors, but it is not clear how it was used. The ORR notes that CCTV images show the LPP being brought in at around 05.43.<sup>219</sup> FF Powell describes being asked to find a pump (which took around 30 mins) and then carrying it into the base of the tower with CM Wilsden and FF Hilditch,<sup>220</sup> but it is unclear whether this was, in fact, used.

207. Essentially, an LPP is a small pump that provides the capability to be 'manhandled' – physically carried – into a pumping position, and to provide a water supply from a source not accessible to a major pump vehicle, usually open water (a river, a lake, etc).<sup>221</sup> They are therefore typically used in rural areas. They can have either one or two outlets (the LFB pumps have one outlet, as illustrated in the picture of a ground monitor above), so they are designed to deliver small quantities of water. This also reflects the size of the pump itself, which has limited pumping capability. The LFB suggest that the pumps they use can deliver 1000 litres per minute – this would be a maximum in my view – though the LFB do not state the operating pressure of the pumps. My experience would be that this is likely to be between 5.5 and 6 Bars which, in practical terms, means that they would struggle to deliver an effective water supply when trying to overcome the effects of gravity. The LFB's pumps are mainly petrol driven (though some can be electric, or battery operated); so, they are only able to operate for a limited time before they need refuelling. But this also means the pumps emit exhaust gases, so they are designed to be used in the open air, rather than in the confined space of a building.

208. In terms of how the LPP was intended to be used at Grenfell, the purpose appears to have been to provide an alternative water supply, as a consequence of the recurring difficulties being experienced by crews inside the tower. I have no criticism of the attempt to try to improve the situation and improvise in this way, but, in my view, it was always unlikely to prove effective.

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<sup>219</sup> ORR v.0.7 {LFB00032988} p.416.

<sup>220</sup> FF Powell witness statement {MET00008035} p.5, para 2; FF Hilditch witness statement {MET00010066} p.4, para 1.

<sup>221</sup> See also ORR v.0.7 {LFB00032988}. This describes the (Rosenbauer) light portable pump used at Grenfell (p.501) as a purpose built, petrol powered pump with a 1000 litres per minute output, and a single delivery (one outlet).



209. Primarily, this is because the issue was not so much the capacity of the rising main (though that was also a problem), but rather, the bigger concern lay in overdrawing the supply to the pump(s) delivering to the rising main, at the same time as trying to provide for the external firefighting jets and monitors that I have described earlier. Furthermore, I have already explained the limits to the pumping capability of LPPs, and that the maximum pressure they are capable of delivering is in the order of 5.5 to 6 bar. A loose calculation of the effect of gravity is a loss of 0.1 bar for every metre of head (height)<sup>222</sup> meaning, in simple terms, that there was always going to be a struggle to overcome the height of the tower. Equally, as the LFB's LPPs have only one outlet, they would also always have struggled to provide any significant volume of water. And, finally, there were already difficulties being experienced with working conditions as a consequence of smoke in the lobby area of the tower – in fact, there is some commentary of trying to use the PPVs I have already described to clear the lobby area. The exhaust fumes of a pump operating in this space could only have worsened that situation.

210. Accordingly, and as a consequence of these reasons, I do not think earlier or greater use of LPPs would have made a material difference at Grenfell.

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<sup>222</sup> *Fire Service Manual, Volume 1, Fire Service Technology Equipment and Media, Hydraulics, Pumps and Water Supplies* (2001), Appendix A.5.1, p.67, Approximate Fireground Calculation (loss of pressure due to height).

## **Part D: Alternative firefighting and search and rescue strategies**

### **Alternative firefighting measures**

211. In considering the adequacy of the LFB's operational response on the night of the fire, it is helpful to consider whether there are any alternative strategies for firefighting in high-rise buildings, that could have been effectively deployed for the purpose of:

- a. The protection of the sole escape route from the building;
- b. The prevention of fire and smoke spread within the building;
- c. The protection of occupants from smoke and fire as they were escorted out of the building; and
- d. The facilitation of evacuation.

212. I think it is important to begin by saying that for a fire on the scale of the Grenfell incident (specifically, the occurrence of multiple flat fires as a result of breaches of compartmentation, as well as rapid external fire spread), there came a point very soon in the incident when there was no real possibility of physically getting above the fire to stop it. Essentially, in such circumstances, the external fire has become a vertical conflagration and the fire will only stop 'itself' when it runs out of fuel or enters its decay phase. It follows from this that any relevant alternative strategies that the Inquiry may wish to consider will focus not so much on fighting the fire, but on limiting fire spread insofar as this is possible, and saving life, which means evacuation.

213. I have already stated that I agree with the findings of the Phase 1 report in relation to the need to attempt a mass evacuation on the night of 14 June 2017 as the only realistic means of minimising loss of life and serious injury, and that this ought to have been commenced by 01.30 at the earliest and 01.50 at the latest.<sup>223</sup> I have also agreed with the Chairman that this would have presented formidable practical difficulties for the LFB, including the internal layout of the building, the lack of any kind of communication system, and the serious dangers to crews especially higher up in the building.<sup>224</sup> I would further add to the Chairman's list of difficulties the fact that there was no fire lift available to the responding crews. This is significant, because there was only standard duration breathing apparatus equipment available to the first responding crews, which, without the ability to get to upper floors quickly via the lift, would have materially limited the height to which firefighters could physically travel to initiate or to assist with evacuation. Nonetheless, as the Chairman found, these difficulties were not insurmountable: the capacity of the stairs was sufficient for a mass evacuation and remained substantially free of smoke until 01.50; there were ways of communicating with residents that ought to have been attempted; and

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<sup>223</sup> Phase 1 Report, Part IV, paras 28.6, 28.20, 28.44.

<sup>224</sup> Phase 1 Report, Part IV, paras 28.7, 28.42.

there was an increasing number of oncoming crews – including EDBA wearers – after around 01:50.<sup>225</sup> Taking all that into account I entirely agree with the Chairman’s conclusion that an evacuation, though difficult, was possible, and was preferable to telling residents to remain in their flats.<sup>226</sup>

214. I would make one further point relating to the issue of alerting occupants. The practical means and mechanisms to inform residents about the need to evacuate (in order to revert stay put) is an essential operational aspect for the facilitation of evacuation during a fire, as much as it is a facet of fire safety planning, as was noted in the conclusions of the Phase 1 report to which I have just referred. In my view it is essential going forward, therefore, that intelligent, building-wide alarm systems should be incorporated, not just as part of a fire safety strategy, but as a vital component of an effective operational response to residential high-rise buildings. It should be part of the obligation of the responsible person to provide for such systems which should be capable of being selectively activated (manually or by automatic detection), if and when evacuation becomes necessary.<sup>227</sup>

215. In light of these conclusions it is helpful to consider whether procedures and practices followed in other Fire and Rescue Services may present effective alternative measures when faced with a rapidly developing fire of the scale seen on 14 June 2017.

216. I have reviewed numerous standard operating procedures (SOPs) as part of my background research with a particular focus on how they deal with the question of evacuation. Typically, they express a need for incident commanders to consider evacuation, without any specific guidance or direction as to how, in practical terms, evacuation should be carried out. Alternatively, they describe an approach to enhance the evacuation strategy of the building’s fire safety management arrangements already in train (in broadly the same way as GRA 3.2). Essentially, therefore, there is no practical guidance in the UK as to how evacuation should be carried out. I have also considered a number of international procedures, which often refer to alert and intercom systems as part of the approach – more commonplace than in the UK – but, here too, I have not located any explicit operational evacuation procedures.

217. That said, the High-Rise SOP of Kent Fire and Rescue Service merits consideration, as in my view this is a good basis for a different and effective approach. It is predicated on work undertaken by Kent’s Principal Fire Engineer, Dr Paul Grimwood. Dr Grimwood is a published author and acknowledged expert in firefighting tactics and techniques, having collaborated on several occasions with other experts in the field

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<sup>225</sup> Phase 1 Report, Part IV, paras 28.30-28.31, 28.35-28.40, 28.42.

<sup>226</sup> Phase 1 Report, paras 28.42 and 28.44.

<sup>227</sup> Justin Francis, an Australian Fire Officer, undertook extensive international research in the aftermath of the Grenfell fire, seeking to review the procedures and methods under which high-rise fires are currently managed. In his subsequent report, he specifically identified as a discussion point that arose during his research into evacuation the proposition that a public address system – rather than “a tone” – must be incorporated into a building alarm system: see the Francis report, 2017, p.24 {SMC00000009}.



of firefighting tactics.<sup>228</sup> He has provided a witness statement to the Inquiry which explains the background to the Kent SOP.<sup>229</sup>

#### Kent Fire and Rescue SOP<sup>230</sup>

218. The Kent method varies from the approach taken by most other UK fire and rescue services over the last few years, though I am aware that some other FRs have adopted the approach to some degree. It is a bespoke system for high-rise buildings, to reflect the circumstances and operational challenges that make fires in these buildings different to fires in other buildings, and the primary objective seeks to simplify the initial decision making of incident commanders. Kent uses the mnemonic RICE (Rescue, Intervention, Containment, and Evacuation) to assist incident commanders to remember the component elements of what it refers to as a 'command decision making tool'. Importantly, the RICE model makes evacuation and containment part of the critical decision-making process from the outset, and not just an afterthought.

219. In his statement, Dr Grimwood states that what would eventually become the RICE concept was first developed by him in 2008 when he was training high-rise firefighters in Kuala Lumpur, Malaysia, at which time it was known as the ICE concept and was intended to assist with command decision making under stress. Dr Grimwood then introduced the concept to Kent officers as part of an extensive, high-rise command training programme in 2010. The ICE concept was used because the vast majority of commanders were failing to achieve satisfactory strategic outcomes on an assessment that was part of the training programme; specifically, the assessment showed that participants were directing the majority of on-scene resources to control and extinguish an external wall fire, spreading over five floors of the building, rather than diverting staffing to prioritising an evacuation. Dr Grimwood records that the introduction of the ICE mnemonic led to "*outstanding improvements in the commanders' ability to identify the appropriate strategic decisions at the right time*". The concept is based on the need to recognise a 'failing building', in the sense that fire growth has progressed beyond the capability of the internal firefighting facilities provided, or the available resources on scene; or the associated building systems are showing signs of failure; in which case evacuation is required. The 'Rescue' component of the approach (the "R" in RICE) was subsequently introduced following the conclusion of the training, and as part of the review of the effectiveness of the training.<sup>231</sup> The approach was embedded within an SOP, and I will now describe that SOP in some detail.

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<sup>228</sup> For information and transparency, I would also point out that Dr Grimwood provided an expert report on behalf of the Fire Brigades Union in the aftermath of the fatal fire at Harrow Court in 2005.

<sup>229</sup> Witness statement of Dr Paul Grimwood {KFR00000040}.

<sup>230</sup> The Kent SOP was published in 2013 and has been submitted to the Inquiry {KFR00000031}. My understanding is that this remains current.

<sup>231</sup> See {KFR00000051}. Dr Grimwood in his witness statement states that the 'R' element was introduced in January 2011, though the magazine article exhibited as PG/9 published in January 2016 still refers to the 'ICE' concept. In any event, it remains my view that both the original ICE and the developed RICE concepts contain the substantive aspects that are of relevance to the Inquiry; namely, the need to consider evacuation at an early stage of an incident.



220. In practical terms, the SOP reflects the following steps:

- (i) The first step reflects the initial actions to be taken and scene assessment and is explained in paras 3.1-3.9;
- (ii) The second element is reconnaissance, which entails a team of firefighters identifying and accessing the fire floor, following 'assessment of the conditions in the protected staircase' (paras 3.10-3.16);
- (iii) Step three seeks to confirm the location of fire (paras 3.17-3.19);
- (iv) Step four involves crews undertaking firefighting by entering the fire compartment (paras 3.20-3.37), during which a two-line intervention (comprising a fire attack team and a corridor protection team) will be used (para 3.22). This is a key element of the Kent approach that is different. Both the first and the second lines of hose are connected to the rising main on the fire floor (pp.19-20 and 24), as opposed to one or two floors below, which is the approach of the LFB and most other FRs. Crucially, the Kent approach seeks to protect the integrity of the staircase and keep it as free from smoke as possible to enable evacuation in the event it is necessary. The SOP also sets out the following guidance in relation to this stage of the procedure:
  - The function of the stairwell protection team is 'to protect the means of egress to the Bridgehead' (para 3.24 and p.21). That team will:
    - Patrol stairwells continuously from top-to-bottom to ensure that egress routes are safe and free of obstructions.
    - Search floors, stairwells, hallways, and lifts for building occupants who may be trapped or are entering an untenable environment.
    - Report information about conditions at each floor to the incident commander.
    - Ensure the stairs are clear of smoke.
    - Deploy to FSG calls where required.
    - Manage occupant evacuation where required.
  - 'The opening of doors should be kept to a minimum to prevent smoke travel' (para 3.26).
  - 'A safety observer may need to be positioned in the stairwell at bridgehead level to monitor for any downward smoke travel' (p.26).
- (v) Next is the need to consider evacuation, and the policy provides four triggers that would lead an incident commander to 'review the pre-planned evacuation strategy'; namely, fire development; smoke travel; self-evacuation; compromised escape route (paras 3.38-3.45).

- (vi) The SOP states that the integrity of the means of escape should be maintained at all times and that doors from staircases to lobbies should be kept closed wherever possible (3.39), and before giving the order to open up the affected compartment the IC must fully risk assess the situation (3.41). Consideration must be given to the potential adverse effects on any evacuation strategy and the safety of occupants above the fire floor (3.41).

221. Kent's Operational Note on the RICE Decision making Tool also includes an embedded link to an online video description of the application of the model, and is a very helpful document, explaining the approach and similarly explaining how this fits within the context of the Decision Control Process (DCP) that I have already described.<sup>232</sup> In addition to this document and video, Dr Grimwood has provided a document entitled '20 Questions', designed in order to address the large number of inquiries about the RICE approach that Kent received in 2018 following the Grenfell fire.<sup>233</sup> I have reproduced a diagrammatic overview of the model at Figure 9 below, which is taken from the document:

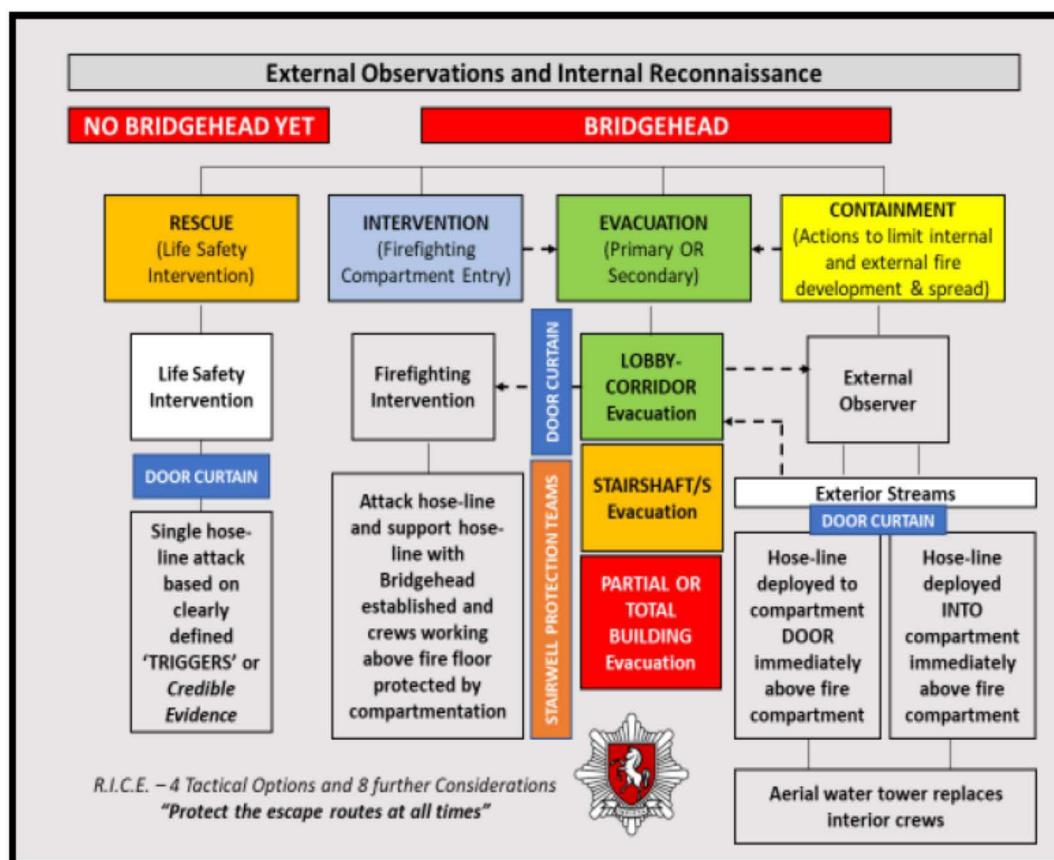


Figure 9 Overview of Kent RICE model

222. The '20 Questions' document further clarifies that:

<sup>232</sup> {KFR00000045}.

<sup>233</sup> {SMC00000004}.

- There is absolutely no order of priority to the four tactical options (i.e. rescue, intervention, containment, evacuation,) and the Incident Commander can decide which approach is most appropriate, depending on the situation presenting (Q6, p.2).
- In buildings where compartmentation may be known to be failing, or where lightweight construction is presenting early and rapid fire spread into structural voids or roof spaces, there may be an urgent need for both containment and evacuation actions to take place concurrently (Q8, p.3).
- Evacuation of 'secondary risk zones' (defined as 'areas of potential occupation within a building that are sited at more remote locations from the primary risk zone') may need to be considered, along with a reversal of a stay put strategy in a building with a single staircase. 'If the fire has spread beyond the floor of origin, the overriding objective is to maintain vertical escape routes for occupants clear of smoke where resources, staffing, structural stability (especially in lightweight construction) or available flow-rate at upper levels are compromised by such rapid fire growth' (Q12 p.4).
- 'The siting of riser outlets in the stair of residential buildings creates problems as the stair is likely to be affected by smoke during a firefighting intervention. Depending on the location and severity of the fire this may become serious. In some buildings the riser outlets are in a firefighting lobby or communal lobby/corridor. In such cases the stair is better protected by smoke. Kent FRS have requested riser outlets to be located off the stair for this purpose since 2011. The introduction of portable door curtains at stair and fire compartment locations (see also Q9) may assist further in protecting both horizontal and vertical egress routes' (Q14 p.4).
- 'Stairwell protection teams should patrol stairwells continuously from top-to-bottom to ensure that egress routes are safe and free of obstructions'; 'report information about conditions at each floor to the incident commander'; 'ensure the stairs are clear of smoke/consider the use of PPV fans for stairwell protection'; 'manage occupant evacuation where required' (Q15 p.5).
- 'Portable door curtains' that 'can be integrated into each of the four tactical options to provide additional protection to firefighters and escape routes during firefighting intervention' are provided for (Q9 p.3).

223. For completeness, I would also draw attention to one issue that I don't think the Kent SOP takes fully into account, which is the issue of mobility challenged evacuation.<sup>234</sup>

224. In conclusion on the Kent SOP, therefore, I would say that its foremost virtue lies in its core philosophy which is to "*protect the escape route at all times*". In that respect,

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<sup>234</sup> The Francis report already referred to makes specific recommendations as to mobility challenged evacuation (see recommendations 13 and 14) {SMC00000009}, p.35.

the Kent tactics do provide the basis for an effective way of dealing with fires in high-rise buildings, in my view. I would restate my earlier note of caution about the implications of an external, vertical conflagration, arising from the failure of passive and active fire protection/ fire safety measures, as even the Kent SOP would have limitations in that situation.

225. But even with these provisos accepted, I nevertheless consider that following the RICE approach at the Grenfell fire would have potentially made a difference; and even taking into account the practical difficulties outlined in the Phase 1 report that I have noted, in my view the RICE approach would have been a preferable approach to that in fact followed by the LFB on 14 June 2017. The four “triggers” that Kent use to assist an incident commander to make a decision to reverse stay put (fire development; smoke travel; self-evacuation; compromised escape route), were all present at Grenfell from a relatively early stage in the incident, which would have given the signal that evacuation needed to be considered. I accept that the SOP does not specify at what point, taking into account those four factors, evacuation should be ordered, nor how it should be implemented. It is possible that this was covered in the associated training, but this is outside my knowledge and would be a matter for Kent FRS to comment on.

226. I must emphasise in the strongest terms that there is a need to avoid jumping to a simplistic conclusion that, had the Kent SOP been in place, it would have prevented fatalities at the Grenfell fire. That is wholly unrealistic and would misrepresent my view. The fire developed very rapidly and it is likely that there would have come a time when any attempt at evacuation would have needed to be abandoned as a consequence of the severity of the fire. Moreover, there is a real possibility, also, that the RICE approach could have resulted in firefighter injuries, even fatalities, for the same reasons associated with the severity of the fire.

227. Even making allowance for these important qualifications, though, I am still of the view that if the LFB had deployed the Kent SOP, and had trained firefighters, but most especially incident commanders, in the use of early triggers to revert stay put and the role of stairwell protection to secure an escape route, then it is certainly possible – even likely – that more lives could have been saved. As the Chairman found, an evacuation was possible despite the practical difficulties, and ought to have been attempted rather than telling residents to stay in their flats.

### Smoke hoods and smoke curtains

#### Smoke hoods

228. I have also considered whether smoke hoods could have materially improved operations on the night of 14 June 2017 and, if so, in what way.



229. I am aware that, since Grenfell, the LFB and other FRSs have purchased smoke hoods.<sup>235</sup>

230. It is fair to say that, before Grenfell, I am not aware that there was any consideration given to the use of smoke hoods by any fire service in the UK. I can offer no substantive explanation for this, other than to suggest that the continuing fall in fires, fire deaths and injuries over an extended period meant that there was no catalyst of a major loss of life that would have triggered that consideration. There is a strong case that the Lakanal House incident ought to have provided that trigger, given the circumstances and major loss of life.

231. Notwithstanding, their value, in my view, has become obvious.<sup>236</sup>

### Smoke curtains

232. Again, I have identified above that smoke curtains can play an important part in a comprehensive strategy to firefighting in high-rise buildings. That said, they are a relatively new phenomenon in the UK.

233. Essentially, a smoke curtain is made from the same material as a fire blanket – so it can withstand heat – and the aim is to use the curtain to close off a door opening as part of firefighting tactics and controlling ventilation. To achieve that goal, the smoke curtain has a built-in positioning mechanism which is made up of a frame that can be adjusted to the width of the door. In between the frame is an extendable rod, similar to anti-theft systems sometimes used in cars. The length of the bar can quickly be adjusted, meaning that it can equally quickly be locked in place.

234. The inventor is a German Fire Officer and whilst I am aware of a number of articles published in fire magazines and journals,<sup>237</sup> I am not aware of any published research. Nor can I comment on how widespread the use of smoke curtains now is, or how effective they have been. In the context of the speed of change in FRSs, they remain a relatively new and innovative approach.

235. I am aware that Kent, Greater Manchester, Cambridgeshire and West Sussex Fire and Rescue have all introduced the curtains and to assist the Inquiry's understanding, I have provided a link to a short YouTube video that was used by West Sussex Fire and Rescue Service as part of the launch of the equipment. This was the first in a series of three videos, but it is the most useful in providing a helpful overview of what a smoke curtain is, and why it can be effective – especially in relation to high-rise firefighting.<sup>238</sup>

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<sup>235</sup> See images from the Kent FRS web site explaining their use {INQ00013953} {INQ00013954}, and see also the LFB website: <https://www.london-fire.gov.uk/about-us/services-and-facilities/vehicles-and-equipment/fire-escape-hoods/>

<sup>236</sup> See also the Francis report {SMC00000009}, p.46.

<sup>237</sup> *Smoke Flow Control and related tactical issues*, Prof, Dr Michael Reike, p.9 {SMC00000003}.

<sup>238</sup> <https://www.youtube.com/watch?v=QwGxgdeYVb0>

**Statement of truth**

The opinions I have expressed represent my true and professional opinion on the matters to which I refer. I have had regard to the evidence that is material to my discipline, including the oral testimony, and I can confirm that I have discharged my overriding duty to the Inquiry.

Signed:



Dated: 25.01.2021

## **Appendices**

### **Appendix 1 - CV**

#### **CV OF STEPHEN MCGUIRK CBE, DL, QFSM, MA, BA(Hons), BSc, FIFireE**

I joined the Service as a Junior Firefighter (cadet) in 1976 in Greater Manchester Fire and Rescue Service, becoming an operational firefighter in 1978. My fire service career spanned 39 years in six Fire and Rescue Services and embraced the broadest spectrum of the operational risk and responsibilities of a Fire and Rescue Service; including Royal Berkshire and Cheshire, as well as more urbanised areas such as Greater Manchester, the West Midlands, and South Yorkshire.

Set out below is an overview of my career profile.

#### **1976 – 1998:**

I was a front-line firefighter for several years in Greater Manchester, before moving on to fulfil various (junior officer and middle rank) command and leadership roles in different fire services, as well as undertaking many more specialised roles. These roles included being a recruit instructor, a fire safety inspecting officer, a fire investigator, a hazardous materials officer, and a project manager for major technology projects such as the replacement of Command and Control/ Mobilising systems.

In 1995, I was selected for, and attended, the Brigade Command Course (BCC), the most senior development programme of the Fire Service, and a pre-requisite to becoming a Chief Officer at the time.

Immediately following this Course, I was promoted to Divisional Commander in West Midlands Fire Service (WMFS), accountable for the City Centre of Birmingham and its environs, and for all aspects of operations, including responsibility for legislative fire safety and community fire safety.

I was awarded the Long Service and Good Conduct Medal in 1996.

#### **1998 – 2006:**

I was subsequently appointed Deputy Chief Fire Officer of Cheshire in 1998, leading on all dimensions of Service Delivery, and a year later, in 1999, I was made Chief Fire Officer, a role I fulfilled for over a decade.

During this period, I was responsible for the full range of responsibilities associated with commanding a fire and rescue service.

As well as this local role, I also undertook several national roles and responsibilities as a Board Member of the Chief Fire Officers Association (CFOA). For example, I was responsible for setting (and marking) the Operations Paper of the Station Officers Examination. At the time,

this examination was the most senior level of the statutory framework of qualifications for the Fire Service, and, again, a precondition of promotion. I continued this role until the examinations structure was abolished and replaced by the Integrated Personal Development System (IPDS) in the mid 2000s; although I continued to sit on the Sector Skills Council for some time afterwards.

I was awarded the Queen's Fire Service Medal in 2002.

In 2004, I was requested to take command of South Yorkshire Fire and Rescue Service, together with continuing to lead Cheshire Fire and Rescue Service. I therefore ran both organisations through an exceptionally complex period of a national industrial relations dispute and industrial action, and in the immediate aftermath of the Independent Review of the Fire Service (2002).

In 2005, I was awarded the Order of Commander of the British Empire (CBE).

### **2006 – 2009:**

In 2006, I was elected to be Vice President, and then President of the CFOA, a position I held between 2007-2008.

In this capacity, I fulfilled a national role of co-ordination between Fire and Rescue Services, and Ministers and Officials. This was not just in the context of policy, though that was a major element of the role. It was also in the context of responding to major incidents and events that occurred during this period; notably, incidents that demanded the deployment of resources beyond the capability of any one Fire and Rescue Service or incidents that had national implications.

I became the Principal Fire Adviser to the Local Government Association (LGA) for a brief period in 2009. I was subsequently an adviser to the Employers' Side of the National Joint Council (responsible for negotiating and agreeing terms and conditions for firefighters) for a more extended period, between 2009 and 2014.

### **2009 – 2015:**

In 2009, I took command of Greater Manchester, one of the largest Fire and Rescue Services in the UK.

This role not only embraced the typical responsibilities associated with being a Chief Fire Officer and outlined already, but also encompassed participation in the Wider Leadership Team of the Manchester City Region, during the devolution of powers and responsibilities to the Elected Mayor.

Within this wider public service dimension, I was the Chair of the Greater Manchester Resilience Forum (GMRF), responsible for all aspects of civil contingency planning as laid out in the Civil Contingencies Act 2004 across the City Region. During my tenure as the Chair of



GMRF, the City was made a UN Resilient City and became part of the Rockefeller 100 Resilient Cities.

I retired from Greater Manchester in July 2015 but was immediately requested to assemble an expert panel to advise Essex Fire and Rescue Authority on how to develop a culture change programme. The programme lasted for two years, concluding with the transfer of responsibility from the Fire Authority to the Police and Crime Commissioner for Essex in September 2017.

### **COMMAND/ OPERATIONAL EXPERIENCE**

I was an operational, front-line firefighter for many years before attaining promotion, securing a solid foundation of front-line firefighting experience in busy, metropolitan areas.

I subsequently acquired extensive command experience and have been incident commander of several large and complex incidents up to Gold Command (Fire) as well as Gold Command (multi-agency); also encompassing liaison with national resilience and contingency planning arrangements up to COBR level.

### **APPOINTMENTS**

|                              |             |   |
|------------------------------|-------------|---|
| Junior Firefighter           | 1976 - 1978 | GMC Fire Service                        |
| Firefighter                  | 1978 - 1984 | GMC Fire Service                        |
| Leading Firefighter          | 1984 - 1986 | GMC Fire Service                        |
| Sub Officer                  | 1986 - 1987 | Royal Berkshire Fire Service            |
| Station Officer              | 1987 - 1989 | Royal Berkshire Fire Service            |
| Assistant Divisional Officer | 1989 - 1992 | West Midlands Fire Service              |
| Divisional Officer           | 1992 - 1995 | West Midlands Fire Service              |
| Senior Divisional Officer    | 1995 - 1996 | West Midlands Fire Service              |
| Divisional Commander         | 1996 - 1998 | West Midlands Fire Service              |
| Deputy Chief Officer         | 1998 - 1999 | Cheshire Fire and Rescue Service        |
| Chief Fire Officer           | 1999 - 2009 | Cheshire Fire and Rescue Service        |
| Chief Fire Officer (interim) | 2004 - 2005 | South Yorkshire Fire and Rescue Service |
| Chief Fire Officer           | 2009 - 2015 | Greater Manchester Fire and Rescue      |

### **EDUCATION AND TRAINING:**

#### **COURSES ATTENDED:**

##### **National**

|              |      |                                    |
|--------------|------|------------------------------------|
| Fire Service | 1987 | Junior Officers Advanced – Phase A |
| College      | 1988 | Junior Officers Advanced – Phase B |
|              | 1989 | Specialist Fire Prevention         |
|              | 1991 | Fire Investigation                 |

|                        |      |  |
|------------------------|------|--|
|                        | 1991 | Hazardous Materials  |
|                        | 1992 | Financial Management   |
|                        | 1992 | Employee/ Industrial Relations   |
|                        | 1993 | Divisional Command Course  |
|                        | 1994 | Information Technology   |
|                        | 1995 | Brigade Command Course   |
|                        | 1993 | First European Fire Officers Course<br>Rijksbrandweeracademie, Holland                                     |
| Top Managers Programme | 2000 | Improvement and Development Agency (IDeA)  |
| Top Managers Programme | 2002 | Civil Service College (place allocated by invitation)<br>(Centre for Management and Policy Studies (CMPS)) |
| Home Office            | 2002 | Assessor training to assess Brigade Command/ Senior Command Course   |
| Gold Command           | 2004 | Winterborne Gunner   |

(Numerous technical and professional seminars, conferences, and short courses each year between 1998 and 2015 as ongoing continuing professional development).

#### DEGREES, DIPLOMAS, ETC:

##### **Fire Services Examination Board**

|  |      |
|--|------|
| Leading Firefighter                      | 1980 |
| Sub Officer                              | 1982 |
| Station Officer                          | 1983 |
| Institution of Fire Engineers – Graduate | 1983 |
| Institution of Fire Engineers – Member   | 1987 |
| Institution of Fire Engineers – Fellow   | 2007 |

|   |      |
|---|------|
| BA (Hons) in Political and Social Science 2:1 | 1997 |
| BSc in Fire Safety Technology & Management    | 1998 |
| MA in Management                              | 2002 |

## **MEMBERSHIP OF PROFESSIONAL BODIES**

I have been an active member of the Institution of Fire Engineers (IFE) since gaining graduate membership (by examination) in 1983. I became a corporate member (by examination) in 1987, and was elected as a Fellow of the Institution in 2004. I have held several positions in the IFE over the years and I am past chairman of several branches and was also a council member as well as a member of the International Board/ Council on two occasions.

### **Professional Responsibilities**

A number of my professional responsibilities have been touched upon already, but other responsibilities I have held over the course of my career are laid out below.

- *President of the Chief Fire Officers Association 2006 – 2008 (mentioned already).*
- *Member of CFOA Board 1999 – 2008.*
- *CFOA lead on European Affairs.*
- *Chairman – Practitioners Forum.*
- *Principal Adviser Local Government Association 2009.*
- *Principal Adviser Employers Secretariat (National Joint Council) 2009 – 2014.*
- *Examiner Fire Services Examination Board – Station Officers' Operations Paper.*
- *National Strategic Adviser.*
- *Member of IFE International Council.*
- *Peer Reviewer Local Government Association.*
- *Non-Executive Director (CFOA Representative) Fire Protection Association.*
- *Chair – Greater Manchester Resilience Forum.*

## **GOVERNANCE**

I have provided both written and oral evidence to the following Select Committees:

- *Commons Select Committee on the Knight Review (2013)*
- *Commons Select Committee on Funding for the Fire Service (2012)*
- *CLG Select Committee (2006)*
- *ODPM Select Committee (2003)*

In addition, I was called to give evidence to:

- *The Public Accounts Committee Inquiry in to the failure of the Fire Control Project (2011)*

## **PUBLICATIONS/ MEDIA**

Over the years I have written many articles in numerous fire and rescue sector magazines, journals and other public sector and management publications, and I have featured in the media on many occasions.

## **MISCELLANEOUS**

I have had the privilege of presenting many papers on numerous fire related topics to many national and international conferences over recent years, including in the USA and Dubai, as well as extensively throughout the UK.

In addition, I have been an Adviser to the Firefighters' Charity and I remain a Trustee of the Fire Research and Training Trust, and I have also been a Trustee of several other, fire related charities, as well as charities outside the fire sector.

I have been on many advisory and leadership boards, the most recent being the Strategic Advisory Board to the National Leadership Centre (NLC).

The organisations in which I have been a part have also won many awards over the years. For example, Cheshire was the first non-Local Authority to be made a 'Beacon Council' for its work in community cohesion many years ago – right up to Greater Manchester being the first Fire Service to achieve '5 Stars' in the EFQM Business Excellence Awards in 2015.

## **AWARDS**

|  |             |
|--|-------------|
| <i>Long Service and Good Conduct medal</i>                   | <i>1997</i> |
| <i>Queen's Fire Service Medal (QFSM)</i>                     | <i>2000</i> |
| <i>Fellow of the Institution of Fire Engineers (FIFireE)</i> | <i>2004</i> |
| <i>Commander of the Order of the British Empire (CBE)</i>    | <i>2005</i> |
| <i>Deputy Lieutenant (DL)</i>                                | <i>2012</i> |

## **SUMMARY**

It will be seen from the foregoing that I have had a long and very distinguished career in the Fire and Rescue Service, fulfilling key leadership roles for nearly 17 years, and working across the breadth of the Service and at the highest levels.



**Appendix 2 – Glossary of Abbreviations**

|       |  |
|-------|--|
| AC    | Assistant Commissioner                         |
| ADSU  | Automatic Distress Signal Unit                 |
| AFA   | Automatic Fire Alarm                           |
| ALP   | Aerial Ladder Platform                         |
| AOM   | Assistant Operations Manager                   |
| BA    | Breathing Apparatus                            |
| BAECO | Breathing Apparatus Entry Control Officer      |
| BAECP | Breathing Apparatus Entry Control Point        |
| BCC   | Brigade Coordination Centre                    |
| BSR   | Bereaved, Survivors and Residents              |
| BMA   | Bulk Media Advisor                             |
| BWV   | Body Worn Video                                |
| CCTV  | Closed Circuit Television                      |
| CM    | Crew Manager                                   |
| CFOA  | Chief Fire Officers Association                |
| CFRA  | Chief Fire and Rescue Adviser                  |
| CLG   | Communities and Local Government               |
| CPD   | Continuous Professional Development            |
| CPR   | Cardiopulmonary Resuscitation                  |
| CRO   | Control Room Operator                          |
| CRR   | Community Risk Register                        |
| CU    | Command Unit                                   |
| DAC   | Deputy Assistant Commissioner                  |
| DCLG  | Department of Communities and Local Government |

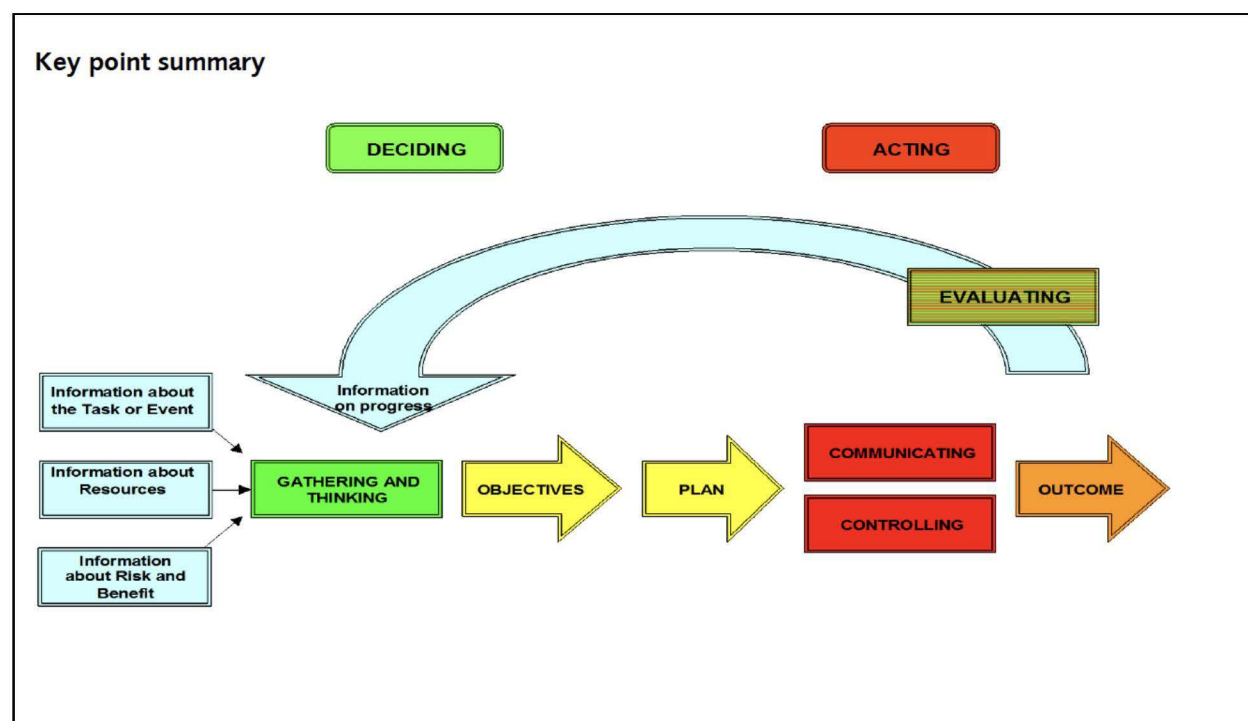
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| DCOL(s) | Dear Chief Fire Officer Letter(s)                  |
| DMM     | Decision making model                              |
| DRA     | Dynamic Risk Assessment                            |
| DRM     | Dry Riser Main                                     |
| DSE     | Dangerous Structures Engineer                      |
| ECB     | Entry Control Board                                |
| EDBA    | Extended Duration Breathing Apparatus              |
| FELO    | Fire Engineering Liaison Officer                   |
| FBU     | Fire Brigades Union                                |
| FF      | Firefighter  |
| FFE     | Firefighter Emergency                              |
| FIU     | Fire Investigation Unit                            |
| FPO     | Fire Prevention Officer                            |
| FRA     | Fire and Rescue Authority                          |
| FREP    | Fire Resilience and Emergency Planning (Committee) |
| FRU     | Fire Rescue Unit                                   |
| FRSC    | Fire and Rescue Service Circular                   |
| FSC     | Fire Service Circular                              |
| FSM     | Fire Service Manual                                |
| FRS(s)  | Fire Rescue Service(s)                             |
| FSG     | Fire Survival Guidance                             |
| FSIG    | Fire Safety (Information) Guidance Note            |
| FSO(s)  | Fire Safety Officer(s)                             |
| GM      | Group Manager                                      |
| GMFRS   | Greater Manchester Fire and Rescue Service         |
| GRA     | Generic Risk Assessment                            |
| GTI     | Grenfell Tower Inquiry                             |

|         |   |
|---------|---|
| GTIRT   | Grenfell Tower Investigation and Review Team                            |
| HART    | Hazardous Area Response Team (LAS)                                      |
| HMEPO   | Hazardous Materials Environment Protection Officer                      |
| HMFSI   | Her Majesty's Fire Services Inspectorate                                |
| HMICFRS | Her Majesty's Inspectorate of Constabulary and Fire and Rescue Services |
| HP      | Hydraulic Platform  |
| HSE     | Health and Safety Executive   |
| IC      | Incident Commander  |
| ICS     | Incident Command System   |
| IEC     | Immediate Emergency Care Pack   |
| IFE     | Institution of Fire Engineers   |
| IPDS    | Integrated Personal Development System                                  |
| JESIP   | Joint Emergency Services Interoperability Principles                    |
| KLOE    | Key Line of Enquiry   |
| LALO    | Local Authority Liaison Officer   |
| LAS     | London Ambulance Service  |
| LDV     | Lung Demand Valve   |
| LESLP   | London Emergency Services Liaison Panel                                 |
| LFB     | London Fire Brigade   |
| LFEPa   | London Fire and Emergency Planning Authority                            |
| LGA     | Local Government Association  |
| LPM     | Litres per Minute   |
| LPP     | Light(weight) Portable Pump   |
| LPWW    | Low Pressure Warning Whistle  |
| MDT     | Mobile Data Terminal  |
| MO      | Monitoring Officer  |

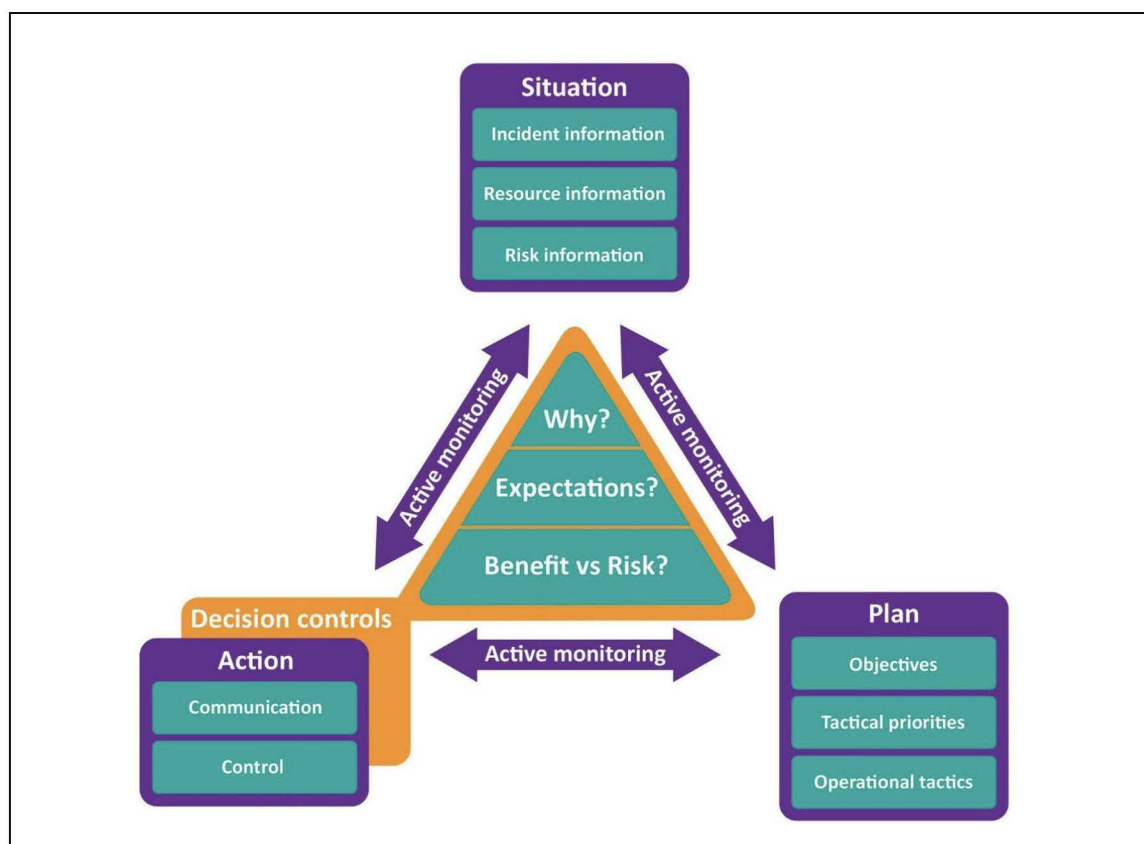
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| MOD   | Ministry of Defence                                |
| NFCC  | National Fire Chiefs Council                       |
| NOG   | National Operational Guidance                      |
| NOS   | National Occupational Standard                     |
| OASD  | Operational Assessment of Service Delivery         |
| ODCB  | Operational Directorates Coordination Board        |
| ORD   | Operational Risk Database                          |
| ORI   | Operational Risk Information                       |
| ORR   | Operational Response (Report)                      |
| ORV   | Operational Risk Visit                             |
| PORIS | Provision of Operational Risk Information System   |
| PN    | Policy Note (of the LFB)                           |
| PPV   | Positive Pressure Ventilation                      |
| PQAs  | Personal Qualities and Attributes                  |
| PRA   | Premises Risk Assessment                           |
| RICE  | Rescue Intervention Containment Evacuation (Model) |
| RPD   | Recognition primed decision                        |
| RPDM  | Recognition primed decision making                 |
| SM    | Station Manager                                    |
| SOP   | Standard Operating Procedure                       |
| SPOC  | Single Point of Contact                            |
| SSRI  | Site Specific Risk Information                     |
| TL    | Turntable Ladder                                   |
| TMO   | Tenant Management Organisation                     |
| WYFRA | West Yorkshire Fire and Rescue Authority           |



### Appendix 3 - Decision Making Models



Decision making model contained in {LFB00012838} PNN 341



Decision Control Model - Foundation for Incident Command