

The Grenfell Tower Inquiry

Written Submissions on behalf of the 67 Core Participants represented by Howe and Co.

Introduction

1. The ability of the London Fire Brigade (LFB) to communicate within itself at a serious and complex fire scene is vital. If the LFB cannot access information, ranging from an overview of the fire scene, to the ability of individual Fire Fighters to speak to each other, then very significant obstacles are placed in the path of those seeking to save life.
2. Did the failures in communications result in a loss of life? Our clients believe that the inability of the LFB to be able to communicate across the fire ground and maintain an overview of the events as they evolved, cannot have done anything other than handicap fire-fighting, assessment of the growth of the fire and the increasing threat to life. In particular, the ability to draw together the evidence needed to change the 'stay put' advice must have led to a delay in making that decision, leading to loss of life. Without properly functioning communications, decision-makers were denied the opportunity to take a step back, at a much earlier stage, and conclude that 'stay put' should be abandoned, and to communicate swiftly to those on the ground when the 'stay put' advice was eventually changed (see paragraphs 18.1.8-18.1.13 Dr Lane Supplemental Report).
3. The failures contributed to a fire-ground, pairs of fire fighters, Bridgehead, Command Unit, and FSG centre collective ignorance of the progress of the fire, their perspectives limited to that which they could directly view. The different command units operated within their own spheres, in ignorance of what others were seeking to achieve. Further, the inability of those responding to FSG's to report their progress, collate that information, and record outcomes resulted in individual miscommunications leading to avoidable loss of life.
4. There was a failure to plan for a complex fire ground where communications might be blocked by buildings and structures which inhibit the passage of radio waves, despite guidance (GRA 3.2) which should have compelled such planning. This is an organisational failure meaning that the very information which was required to make the

obvious decision to abandon stay put and evacuate was not available where it was required.

5. The issues of inhibition of radio communications, by concrete, steel and glass, were well known to the LFB as an organisation. But those commanders, who deployed to the fire ground, appear to have been ignorant of this risk and failed to add this vital issue to their dynamic assessments.
6. The failure to train in real life scenarios which deal with high rise blocks was and remains an organisational failure which lost lives at the GT fire. Until the LFB conducts training under stress-testing conditions lives will be lost again. An organisational change to train hard in actual residential and office blocks needs to be recognised and achieved as a priority.
7. The failure to test its equipment as regards communications (or indeed any other equipment) under such conditions is an organisational failure, a failure of leadership and failure of responsibility at all levels of the LFB, the Mayor's Office and Central government. The failure to recognise and urgently correct the communications issues since the Grenfell Tower fire is a pure failure in leadership of the LFB, who should have made the case for new equipment or technical installations which can assist communications within Tower Blocks and express funding for the same.
8. Whilst the MET and LAS have reacted and adopted methods for working in adverse radio communications environments, following the King Cross and 7 July reports, the LFB still uses equipment, that is little different to the equipment criticised in those reports.
9. The failure of the LFB's leadership to fully recognise concerns highlighted by rank and file officers, and to stress to the Minister and to the Cabinet Office that communications and training must be underwritten by the provision of adequate funding means that lives will be lost again. Intrinsicly, that training must be given proper time, and proper funding, conducted by those that have current experience. The Fire Fighters who go into fires in the future under these conditions have their lives put unnecessarily at risk and have their ability to save life materially undermined.
10. Everyone we represent recognises that that whatever the individual failings of some Fire Fighters, those who attended the GT fire risked their lives, and went well beyond what was safe in order to try and preserve life. They were let down by their commanders just

as much as those who were in the Tower that night. The failure in communications not only caused, we suggest, a massive and unwarranted delay in making the decision to evacuate, but also exposed the Fire Fighters to unnecessary risk.

Overview of Submissions

11. These submissions will address, specifically:
 - a. The relevant Legal and Policy framework relating to communications
 - b. Previous reports and reviews
 - c. The range of communication problems encountered on the night of the fire
 - d. How those communication problems led directly to loss of life
 - e. The subsequent failure to recognise those clearly identifiable and potentially on-going communications problems

Legal and Policy Framework

12. The Fire and Rescue Services Act 2004 (2004 Act) is the primary legislation underpinning the operation of Fire Services in England and Wales. The relevant Fire and Rescue Authority (FRA) is responsible for the carrying out of the relevant statutory functions in a given area. Pursuant to s.1(4) 2004 Act, The London Fire Commissioner is, since 1st April 2018 the FRA for the London Metropolitan area, with responsibility for the London Fire Brigade (LFB). At the time of the fire it was the London Fire and Emergency Planning Authority
13. The core functions of FRA's, are set out at ss.6-9 2004 Act provide that an FRA must, insofar as is relevant to the Inquiry, make provision for the purposes of:
 - a. Promoting fire safety in its area (s.6);
 - b. Extinguishing fires and protecting life and property in the event of fires in its area (s.7).
14. The s.6 duty requires the FRA to, in particular, to the extent that it considers reasonable to do so, make arrangements for:
 - a. The provision of information, publicity and encouragement in respect of the steps to be taken to prevent fires and death or injury by fire;
 - b. The giving of advice, on request, about:

- i. How to prevent fires and restrict their spread in buildings and other property;
 - ii. The means of escape from building and other property in case of fire
- 15. The s.7 duty requires the FRA to, in particular:
 - a. Secure the provision of the personnel, services **and equipment** necessary efficiently to meet all normal requirements
 - b. Secure the **provision of training** for personnel
 - c. Make arrangements for dealing with calls for help and for summoning personnel
 - d. Make arrangements for **obtaining information** needed for the purposes of extinguishing fires and protecting life and property in the event of fires in its area;
 - e. Make arrangements for ensuring that reasonable steps are taken to prevent or limit damage to property resulting from action taken for the purposes of extinguishing fires and protecting life and property in the event of fires in its area
- 16. Section 44 expressly sets out the powers of a fire-fighter in an emergency, providing that they can do anything they reasonable believe to be necessary if they reasonably believe a fire to have broken out or to be about to break out:
 - a. for the purpose of extinguishing or preventing the fire or protecting life or property; (s.44(1)a)
 - b. for the purpose of preventing or limiting damage to property resulting from such action (s.44(1)d)
- 17. The Civil Contingencies Act 2004 (“CCA”), and the Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005 (as amended in 2012) (“2005 Regulations”) confer powers and duties upon the Fire, Police and Ambulance services, as well as local authorities, which are defined as Category 1 Responders, in relation to an emergency. S.1(1)(a) CCA defines an emergency as including
 - a. “[A]n event or situation which threatens serious damage to human welfare.”
- 18. Pursuant to s.2(1)d CCA, Category 1 Responders have a duty to assess, plan and advise, which includes an obligation to:

- a. Maintain plans for the purpose of ensuring that if an emergency occurs, or is likely to occur, the body is able to perform its functions, so far as is necessary or desirable, for the purpose of:
 - i. Preventing the emergency;
 - ii. Reducing, controlling or mitigating its effects, or
 - iii. Taking other action in connection with it
- 19. The relevant Responders have a duty to comply with any Regulations and have regard to any Guidance issued by Ministers. Of particular relevance in the current context are:
 - a. The 2005 Regulations
 - b. Emergency Preparedness- Statutory Guidance (EP)
 - c. Emergency Response and Recovery - Non-statutory Guidance (ER&R)
- 20. Category 1 Responders are under a duty to cooperate with one another in connection with their s.2(1) CCA duties, insofar as such cooperation relates to or facilitates the performance of those duties. Such cooperation must include (Reg 4 2005 Regulations):
 - a. The formation of a local resilience forum- in the current context the London Resilience Forum;
 - b. The provision of information necessary of the Responders performance of their functions under the CCA
- 21. In London, it is, pursuant to Reg 55 2005 Regulations, the London Fire Commissioner¹ which takes on the lead responsibility for performing the s.2(1)d CCA duty in relation to pan-London emergencies. The other Category 1 Responders (such as the Police and Ambulance services), whose functions are exercisable in London, are obliged to cooperate with the London Fire Commissioner.
- 22. Telecommunications Sub-Groups are established in each Local Resilience Form area. The purpose of the Sub-Groups is to ensure the local responders and their partners are able to communicate effectively in challenging circumstances / emergency situations. Their objectives include:
 - a. Maintaining a Telecommunications Plan which, *inter alia*,
 - i. Identifies shortfalls in the resilience of the communications arrangements;

¹ The London Fire and Emergency Planning Authority at the time of the fire

- ii. Sets out steps to be taken to enhance the resilience of local telecommunications through a diversity of technical options, and uptake of privileged access schemes, such steps to include agreeing protocols and procedures for the use of interoperability solutions
 - b. Coordinating the local approach to resilient telecommunications
23. The ER&R guidance addresses, amongst other things;
- a. The generic national framework for managing emergency response and recovery, to facilitate multi-agency working;
 - b. Generic principles for enhancing communications resilience
 - c. The formation of TSG's;
 - d. Government initiatives for enhancing the resilience of Responder's communications;
 - e. National arrangements for promoting the availability of telecommunications infrastructure.
24. The interoperability of the three emergency services is expressly addressed through the *Joint Doctrine: the Interoperability Framework* guidance, drafted in accordance with the statutory aims of the CCA, and to complement the ER&R guidance. As regards communications, the guidance focusses on the use of common symbols and terminology in order to enhance the ability to exchange reliable and accurate critical information. Specific guidance as to technical communications solutions are not addressed.
25. The three key policy/guidance documents relating to the provision of communications equipment suitable to address a High Rise fire such as that at GT are:
- a. Fire and Rescue Authorities Operational Guidance, Generic Risk Assessments (GRA) 3.2 Fighting Fires- In high rise buildings [LFB00001255]
 - b. LFB Policy 488- Incident Communications [LFB00000736];
 - c. LFB Policy 790 – Fire Survival Guidance Calls [LFB00001257].
26. GRA 3.2 provides/ observes, materially, that:
- a. *“High rise incidents may create difficulties with lines of communication and radio reception. The scene of operations may be a considerable distance from the access level and point of command. Building construction may cause radio*

reception 'blind spots' and affect radio based breathing apparatus telemetry systems." p.7

- b. **"Planning...** Each Fire and Rescue Authority must assess the significant hazards and risks in their area relating to this generic risk assessment.... Site specific plans must be considered for locations where the hazards and risks are significant. These plans must take into account and specify any variation from the normal operational expectations of personnel, appliances and equipment and include all foreseeable scenarios... Planning is underpinned by information gathering, much of which will be gained through inspections or visits, such as those covered by section 7(2)(d) of the Fire and Rescue Services Act 2004" p.14
- c. "Information to be gathered in relation to high rise incidents should include.... Effectiveness of communications and identification of any radio 'blind spots'" p.16
- d. "Contingency plans for particular premises should cover..... alternative communication arrangements to overcome any radio 'blind spots'" p.17
- e. **"En-route** Information received en-route and any planning that may affect tactics on arrival should be passed to all relevant personnel prior to arrival at an incident... Full use must be made of all available information, including any operational information systems provided." p.22
- f. **"Establishing a bridgehead...** Regular communication must be maintained to ensure that the Incident Commander is aware of the developing situation and can anticipate resource requirements effectively. This also helps to ensure that the Fire Sector Commander is kept updated with information gathered by those who can help to identify any external fire and smoke spread." p.25
- g. "Communications Where appropriate and available the Incident Commander must consider the use of alternative radio channels to manage the volume of radio traffic. Where there are communication difficulties, specialist equipment, such as a leaky feeder radio cable, Airwave radios or repeater equipment, can be used and the Incident Commander should also consider the use of internal or mobile telephones, public address systems, or loudhailers to communicate with building occupants." p.31

27. LFB Policy 488 sets out procedures to standardise, simplify and improve the setting up of communications networks at an incident, observing that:

- a. *“Effective communications are the key to success. A reliable communications network is essential for safe operation at incidents and fundamental for securing the level of command required to manage operational resources effectively.”*

Paragraph 1.1

28. Further, LFB Policy 790, provides materially that:

- a. *“All actions taken on the incident ground to resolve the situation must be relayed back to control whilst a FSG call is still in progress. This is so that control can pass information which may be beneficial to the caller eg. Crew are en-route.”*

Paragraph 7.10

- b. *“It is vital that control is kept informed of the actions being taken to resolve each FSG call. The fact that control is aware of the actions being carried out on the incident ground will greatly enhance the advice given to FSG callers. Informative messages from the incident ground should also contain an update on progress relating to those specific FSG calls... The outcome of every FSG call must be communicated to control”* Paragraphs 9.1-9.3

29. Finally, as regards the provision of equipment, it is important to note that the LFB owes a duty of care to the public and its employees, the fire-fighters, including the obligation to comply with Health and Safety Regulations (see, for example, *“Wembridge Claimants” and others v Winter and another* [2013] EHC 2331 (QB)). Of particular note in the current context are the Provision and Use of Work Equipment Regulations 1998/2306, and specifically:

- a. Suitability of work equipment- The obligation to ensure that work equipment is constructed or adapted as to be suitable for the purpose for which it is used or provided – Reg 4
- b. Maintenance- The obligation to ensure that work equipment is maintained in an efficient state, in efficient working order and in good repair – Reg 5.

Previous Reports and Reviews

30. The GRA relied upon the Incident Ground Communications Study, Incident Communications Final Report, Fire Research Technical Report 21/2008 which provided twelve recommendations dealing with equipment through to new buildings and other recommendations. Those recommendations are set out in full in Howe & Co's 11th July 2018 *Issues on Radio Communications Fire Fighters* document. Of particular note are:

- a. Consideration as to whether developers or owners of large buildings should be compelled to restrict the use of materials which limit radio equipment effectiveness, and/or Provide and maintain, on-site radio infrastructure, deemed necessary by the FRA to enable efficient and adequate radio-communications for the fire and rescue service in the event of an incident (Recommendation 2)
- b. Consideration as to standardising arrangements for the provision, installation, testing and maintenance of such radio installations (Recommendation 3)
- c. Any decision to adopt a TETRA-based solution should not be made unless the provision of direct bronze level interoperability is a paramount consideration (Recommendation 7)
- d. Existing UHF channel assignments should be examined to see whether it might be possible to modify the channel assignments to further minimise the potential technical limitations of the current channels and whether the number of available channels could be increased (perhaps by utilising channels vacated by the police service in its transition to the Airwave service). (Recommendation 8)

31. The Report specifically identified that the key drivers are:

- a. *“The radios presently used for incident ground communications in the UK operate in the Ultra-High Frequency (UHF) range. As such, signal transmission between handsets can be adversely affected by the interruption [degradation] of the signal by a number of factors, including the materials used in building construction. Signal problems [degradation] may be encountered in any environment but are a particular issue in the built environment (especially in large or complex buildings, and tunnels and other sub-surface structures) due to the nature of the construction methods used.*

- b. [..]
 - c. *The McKinsey report into the response of New York Fire Department (FDNY) to the World Trade Centre incident [Ref. 2-1] indicated that any interruptions to incident ground communications, particularly in large or complex buildings, can have a severe effect upon the effective command and control of incidents and thus the safety of firefighters and occupants”*
32. Other reports have also highlighted communications as being a major issue in the past. In particular, and in addition to Kings Cross and the 7th July report, the following report recommendations are relevant:
- a. Balmoral Bar – Recommendation BB11
 - b. Bethnal Green – Recommendation 9
 - c. Harrow Court – Recommendations NH39, NH40 & NH60
 - d. Lakanal House – Recommendation LFB5
 - e. Paul’s Hair World – Recommendation PHW2
33. In the Kings Cross report, in particular, it was identified that the lack of radio communications in the subterranean environment contributed to the loss of life.
- Following the King’s Cross fire, London Underground decided to accelerate plans for the provision of radio communication for station staff, initially at the same 42 stations. I believe it to be essential that radios used by London Underground and each of the emergency services must be compatible, and that station staff should be issued with radios (or paging equipment) in due course and I include recommendations accordingly* Page 137, Para 26 – Department of Transport – Investigation into the King’s Cross Underground Fire Desmond Fennell QC (<http://www.berrison.com/wp-content/uploads/2015/06/Kings-Cross-Fire.pdf>)
34. Despite the fact that radio communications may have improved for sub-terrain communications, it appears very similar radio systems are still being used by Fire Fighters today. For all other responders, including HM Armed forces, Airwave terminals both vehicle and handheld terminals, are used.

35. Radios used by the New York Fire Department, Port Authority Police and New York Police Department, during the 11 September 2001 terrorist attacks on the United States of America, were similar in description to the radio used by the London Fire Brigade at Grenfell. The 9/11 Commission report (<https://fas.org/irp/offdocs/911comm-sec9.pdf>) states at page 283 that:
- a. *As of September 11, FDNY companies and chiefs responding to a fire used analog, point-to-point radios that had six normal operating channels. Typically, the companies would operate on the same tactical channel, which chiefs on the scene would monitor and use to communicate with the firefighters. Chiefs at a fire operation also would use a separate command channel. Because these point-to-point radios had weak signal strength, communications on them could be heard only by other FDNY personnel in the immediate vicinity. In addition, the FDNY had a dispatch frequency for each of the five boroughs; these were not point-to-point channels and could be monitored from around the city.*
 - b. *The FDNY's radios performed poorly during the 1993 WTC bombing for two reasons. First, the radios signals often did not succeed in penetrating the numerous steel and concrete floors that separated companies attempting to communicate; and second, so many different companies were attempting to use the same point-to-point channel that communications became unintelligible.*
 - c. *The Port Authority installed, at its own expense, a repeater system in 1994 to greatly enhance FDNY radio communications in the difficult high-rise environment of the Twin Towers. The Port Authority recommended leaving the repeater system on at all times.*
36. Notably this action improved the communications within the World Trade Centre, on the morning of the attacks, although only one of the two systems was activated.
37. In the 7 July Report (https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/archives/assembly-reports-7july-report.pdf), it was noted that the conclusion that inter-service communications was necessary had not been followed through with. Only the City of London Police and British Transport Police, had access to Airwave that would allow them to communicate underground. Recommendation 4 & 5 of the report identified that:

- a. *"We recommend that the Metropolitan Police Service, London Fire Brigade and London Ambulance Service provide us with an update on the rollout of digital radio systems within their services in November 2006, May 2007 and November 2007, so that we can monitor progress towards full implementation of TETRA based radio communications across London's emergency services."* (emphasis added)
38. Only the MPS and LAS updated their radios for majority of their staff. In paragraph 2.28 the report describes the use of leaky feeders as a temporary emergency back-up.

Communication Problems at the GT Fire

Pre-Fire Visits

39. The visit to the Grenfell Tower on the 15th of February 2017 made only the following comment regarding communications at the location [[LFB00003116.pdf](#) ORD p.4]
 - a. *"Hand Held Radio. Good comms in sub basement, channel 1."*
40. As regards this visit Dean Rickett's stated in evidence as follows:
 - a. *• I noted that communications were good on hand held radio channel 1. ([Witness statement LFB00004825.pdf](#) (Page 6))*
41. Further on the 25th June 2018 WM Michael Dowden (p.117), discussing a familiarisation visit to Grenfell:
 - a. [Q. A drop key. I'll come back to the drop key shortly. While I'm still on this list, I'll stick to it. Just a couple down, you see: "Effectiveness of communications and identification of any radio 'blind spots'." On your visit, did you look at that?]
A. Again, I can't recall that's something that happened, no
42. We suggest that is clear that Fire Fighters did not understand and had not been trained, or tasked, with giving communications the priority it clearly deserved. This is an attitude permeates the LFB to date.

Mobile Data Terminal ("MDT")

43. The MDT, located at the front of the fire engine should provide Fire Fighters with advance information about an incident, including directions, and any specific information

as to the building on fire, contained within the Operational Risk Database (ORD). The overwhelming weight of written and oral evidence from the FF's suggests that the MDT system was not working properly on the night of the fire and was known to be unreliable, such that many simply did not place any reliance on it.

- a. *So the information for this particular block should now be on the computer. When I pressed the button for Grenfell Tower I should have been able to access the information via the Mobile Data Terminal (MDT) and had that information to hand. On the night of the fire I could not access that information because it isn't on the MDT. It didn't work, it's a rubbish system bought on the cheap.* MET00013965_0021 Stewart Brown MET00013965
 - a. *We have a mobile data terminals (MDT) on our vehicle which we use to update our status and obtain information of incidents, however, this wasn't working and we couldn't acknowledge that we were on route.* Jason King – MET00010813
 - b. *Unfortunately the mobile data terminal MDT in the front of the truck crashed/failed on us and wasn't working. It was blank. The MDT is a mobile version of the system that gives us the call slips with details of the incident, location and so forth. We were therefore unable to book mobile to Grenfell via the MDT which is how we would normally inform control that we'd received notification that we were to be mobilised. That was out. And because we had had no call slip we had no address details for our attendance. We had nothing.* Paul Marks – MET00017068
 - c. *Just from my experience, that night it happened and **there's been several occasions where sometimes the system does crash and you have to resort back to getting on the main scheme radio and contacting control.*** Dean Roberts 23 July 2018 p.107
44. Further the vital information obtained from 7(2)(d) visits should have been accessible from these devices. It is clear that, not only was that information poorly obtained in the first place, but that that limited and incorrect information could not be accessed from the MDT by many of those attending.

Command unit

45. The Command Support software and equipment installed on the Command Units was outdated, with well-known faults. It had equipment that was untested, and operators untrained to use it. In addition, problems with the power supplies to the Command Units, together with the inability of the 3G wireless signal to cope with the volume of data being transferred during the fire, undermined the efficacy of the Units, in terms of ensuring

messages from the fire ground were not missed, and enabling a better understanding of the structure of the incident (see Daniel Egan 4 July 2018 p.54):

- a. *It was down to me as the test manager to say that it worked. I refused to do so because it didn't. When I returned, they had brought in a Command Unit Watch Manager who told me that things were progressing. I checked the test scripts and noticed that they had amended them and deleted the tests where the critical faults were happening. I am very clear on this. They had clearly done this in order that the system would pass. I remember in particular that one of the areas of concern was the allocating of resources which, in the tests, was freezing and then losing information. The test for this area had been removed when I came back and realised what had happened, I told them that I wasn't having any of it and wanted out of the team. I made it perfectly clear to HUGHES and ORBELL that I wasn't having any part of it. I went sick. MET00012772_0016 to ME100012772_0019 Daniel Alie MET00012772 (Referring to continued systems faults during testing in 2008/9)*
- b. *However, it turned out that at Grenfell (and other larger scale incidents), the systems did not work due to the server and 3G signal not being able to handle the amount of information and high number of log on's at one time. Peter Johnson - MET00013235 (p.6) (see also p.3 where he reviews each piece of equipment that did not work)*
- c. *I turned it on and off three times, the computer, to try and get it to work, and then the distraction of trying to turn it on and off was just so great that it was decided not to bother anymore and just plough ahead without it. But I was confident it wouldn't have worked anyway because my experience is it just doesn't work past six appliances. Peter Johnson 5 September 2018 Page 9.*
- d. *We had an issue with the CSS because the command unit has an inbuilt generator to produce obviously electricity and that, and I think it had been sent up --so it had been recorded that it had been intermittent fault before, and on the night I believe it kept --I think we did get it up and running and then it just crashed. I think it crashed about three or four times. I think it overheated. There is an issue with the power supply that provides electricity and the CSS working....The conversation I had with the command unit staff when it crashed is that this is a regular occurrence Daniel Egan 4 July 2018 p.52*
- e. *The on-board generator provides electricity supply for the lighting, the radios and the computers. It had been a known fault for a number of months. I believe that the actual generator on our command unit had been changed twice in the previous two years, but it still consistently failed. When it failed, you get a two-hour battery backup, UPS batteries, uninterruptable power supply, so the generator failing won't be an issue, but two hours down the line, when you ran out of power, it will be an issue. When it did fail, I said to the group manager --*

I'd warned him in advance it was likely to happen. I also told him that we would have a two-hour battery backup. But when it did fail, to conserve some of the power, we shut down the computers and we shut down half of the lights so we could preserve battery power for the more essential things such as the radios and maintain some lighting... I believe it is fairly widely known across all of the command units.. [How long has this been a problem known to staff operating the CU's] Four years at least Norman Harrison 19 September 2018 p.131-132

- f. *It's a regular occurrence that CSS fails [Do you recollect it ever being up] No, to be honest with you, I was mainly looking at the whiteboard that had the information written on it.... We are in the process of replacing it. It's not an effective system."* Commissioner Cotton 17 September 2018 p.227-228

46. The Command Unit was unable to establish a link in order to receive footage from the police helicopter. This denied incident commanders an important source of information regarding the progress of the fire:

- a. *The heli-tele I actually tried as soon as I got on the command unit. It's what we do normally anyway. There was no link. Normally its on channel 5. I scrolled up and down through the channels... but there was no connection [That remained the case throughout the night?] All the way through. As I said, I tried it as soon as I got on the command unit, and I know Group Manager Goodall tried it as well later on... but there was no heli-tele pictures whatsoever at any stage. Norman Harrison 19 September 2018 p.128-129*
- b. *[Would it have been easier--- I know its difficult with hindsight—to do your work seeing visually through the heli-tele downlink what was actually happening rather than relying on what you were being told over the radio?] It may have helped. I don't know if we would've done anything different... Debbie Real 18 July 2018 p.25*

Other Equipment

47. A variety of other equipment was potentially available on the night of the fire, but either was not used or was not usable (In “*Command Support at Incidents*” Policy No. 541 [LFB00023355], there is a list of equipment to be used for communications together with diagrams for the use of that equipment):

- a. Matel Field Telephone, was a resource apparently available on the CU, which was not deployed, and or not known about by operators.

- b. MESH Nodes – a local wifi network to support deployment of toughbooks - [And mesh node, was that also available on the night of the fire?] *No, it's never worked.* Peter Johnson 5 September 2018 Page 7
- c. Toughbooks – ruggedized laptops – [Was Toughbook used on the night of the Grenfell fire at the incident?] *I've never used a Toughbook on an operational incident in my career. They've never been operationally ready to be working* Peter Johnson 5 September 2018 Page 6.
- d. Striker Camera – Incident camera *on a tripod that raises up to a height of 20ft and can record an incident. That has never worked.* Peter Johnson statement MET00013235_0003 (p.6)
- e. Mobile phones – These were never deployed into the tower nor considered as an alternative to runners. Mr Gomes's evidence demonstrated that mobile phones worked throughout the tower from the highest floors down.

Radios

- 48. There are two types of radios used on the fire ground that are similar in their working. A handheld radio and a Breathing Apparatus Radio Interface Equipment (BARIE). The BARIE, is a lower-powered radio enabled to operate in explosive atmospheres. It is unclear what the benefit of an intrinsically safe radio is, in fighting actual fires.
- 49. Those wearing Breathing Apparatus (BA) suffered significant difficulties in communicating. This was due both to the well-known shortcomings of the BARIE radio equipment, and the fact that such equipment was not fitted to every BA wearers equipment nor were the sets even available for every pair of Fire Fighters deployed. The consequential inability for those engaged in fire-fighting and rescue operations in the Tower, to communicate with one another, and with the Bridgehead, gave rise to risks to those FF's undertaking such actions, and led to potentially avoidable deaths.
 - a. *We also have the Breathing Apparatus Radio Interface Equipment (BARIE) but where mine was dislodged, it was then no good. I believe it relies on the same technology as the personal radios so suffers the same issues. The reason my earpiece became dislodged is the design and way in which it is fastened to the rubber tab on the PS S7000 BA mask. It is secured by roving a plastic strap through the earpiece onto the rubber tab. This can slip and move when you are*

working. Not every BA set has Barie MET00012871_0019 Charles Batterbee MET00012871

- b. *The BA sets are really poor, they either sit uncomfortably or you can't hear them clearly MET00007879_0016 Harry Bettinson*
- c. *BARIE sets, useless... You have a thing that goes on the top of your head. A thing that goes in your ear. You put your helmet on, it pushes your mask out, you lose air. You have a lead that comes down that you somehow have to tuck in between your tunic and around. It feels like it's something from the dark ages David Badillo 29 June 2018 p.100*
- d. *There's problems in that there's several parts to it, so firstly, when you rig, it has to go on correctly for it to work effectively. Bits can get dislodged and moved around and then they can't hear you or it doesn't work. Louise De Silvo 25 July 2018 p.232*
- e. *Unfortunately this is where the problem lies, because you don't always go in with your original partner that you were established at change of watch, so in this case, Crew Manager Secrett should have a BARIE set because he's a crew manager. His BARIE set for whatever reason was off he run, so he had no set, and Dave and I -- so I didn't have a set because I was his partner. Dave was either off another machine, off the pump ladder, or in the middle. He didn't have a BARIE set either. So between three of us, we had no intrinsically safe comms set Christopher Dorgu 9 July 2018 p.158*
- f. *[Discussion of use of channel 2] "...if I could put that in context, I was desperate to maintain contact with our EDBA crews. It was of the greatest importance to me to know that they were okay or where they were, if they were successful with their rescue and so on. And the fact that they were not just up there without water but without radio comms greatly concerned me." Brian O'Keefe 9 July 2018 p.36*

50. The handheld radios used by the LFB at the incident were simply unable to cope with the volume of radio traffic generated nor to transmit beyond a floor or two. The system does not allow for more than one message to be sent at a time, resulting in a need to wait for a gap in traffic before communicating. Further, whilst a number of different channels were operable, a handheld radio can only monitor one channel at a time, presenting yet a further obstacle to adequate communications by senior officers. Attempts to set up channel 2 to provide further capacity were unsuccessful. Further, whilst airwave radios were available, they were limited in number, leading to the Commissioner's airwave being borrowed. LFB policy dictated that airwaves radios should not be brought onto the incident ground, and their use was not taken up by officers until late on in the incident.

- a. *Our communication systems are awful our hand held radios are abysmal. Imagine the scale of events that night and we have got 6 channels and I think we only use 2 or 3 of them which is just impossible. Breathing apparatus was on channel 6 and there was a large amount of BA wearers that night all trying to talk to the Bridge Head. Someone would have been on Channel one for communications. I was trying to communicate with that Bridge Head officer on channel 1. We have got another 5 channels that officers can use, fire fighters can use channel 3 for specific tasks it's not enough as everyone wanted to say something. Sometimes fire fighters forget to go on channel 6 but at least they were still in communication with someone. When you are doing specific tasks you haven't got time so especially when you are under so much pressure you are walking over bodies you are being confronted with family members all that sort of stuff. So it is a major gripe that we just do not have proper communications and on that night it was a failing for me big time. I was on my radio constantly wanting to know what resources the Bridge Head wanted and it was difficult to communicate. It would have been nice if could have had direct communication but that just wasn't possible on the night. It was a dangerous situation not having proper communications* Stewart Brown MET00013965
- b. *I've got no issue with using my mobile phone for brigade stuff as well. It was needed because we had no comms at all between us and you couldn't do it by hand radios because there would not have been enough channels so mobile phone was the best option to do that hence why senior managers all get given mobile phones but batteries only last a certain amount of time. There needed to be some sort of communications for officers if they're going to be at this incident command posts using their own mobile phone, it's not really good enough.* Helen Christmas MET00014997 and MET00014999
- c. *Another difficulty was radio communications. We generally use one channel for everybody so that's incident commander down to people who want an increase in pressure on their jets if they're not in BA. So if you are on the outside. So that radio channel becomes absolutely deluged with people that want to talk to one another. So you will get broken communications, you will get people who are waiting for ages to talk and whilst waiting to speak the situation will have evolved or changed anyway so it's not, not a great system. There are more channels but the procedure is that fireground channel one (1) is the initial incident command channel or the initial channel apart from channel six (6) which is for breathing apparatus crews to communicate with entry control. The problem is that always the first stages of the fire are the most dynamic where most people need to talk to other people about what's going on. The channel gets wiped out* MET00010086_0018 Steven Collins MET00010086
- d. *[What training are you provided with to minimise the problems caused by radio congestion? What workarounds are you advised to adopt?] I wouldn't say we've been trained with any particular workarounds. What I would say is that, again,*

experience gives you workarounds, you know, briefings contribute to workarounds.” Sean Coltress 19 September 2018 p.39

- e. *There was a huge amount of radio traffic, but it was all cutting across each other. It wasn't ill discipline; it was the fact that everybody there seemed like they had something important to put across. But because it's a simple system, so a point to point system, if you also press to transmit, it will cut out the radio message being sent, and that was just continuous, not just at that point in time, but for a long time in the incident. Andrew O'Loughlin 24 September 2018 p.109*
- f. *All I do know is that there was never a successful setting-up of channel 2, whether the radio engineer arrived or not.... [Did that hamper your communications as IC on the night?] Yes, communications were extremely difficult on the night. People really had to work very hard to ensure we were maintaining each other's situational awareness Andrew Roe 26 September 2018 p.77*
- g. *As written in our policy, no, which I think should be changed, and I felt that, to be fair, prior to this incident, because we'd set up an Airwave comms network on the Croydon tram crash and it was immensely useful. I'd done it on other incidents previously. So I felt that that was something in a policy that was focused on security because of the need for digital communications to remain secure in a multi-agency emergency service environment, so they're left in the car for security, but, actually, I think that bit of policy needed to change, because I would rather they had their handheld Airwaves with them to exactly deal with the sort of situation I faced. But I had no confidence that they all would have them because of that policy Andrew Roe 26 September 2018 p.79-80*
- h. *[Was it a problem on the night that the command units don't have or didn't have Airwave channels which meant that you had to lend yours?] It made the communication much easier once I did, yes. [So can we put that down as a problem on the night?] I think it was a problem on the night and I think it's something that was assisted by me surrendering my Airwave radio.” Commissioner Cotton 17 September 2018 p.223-224*

51. Those within GT were unable, using their handheld radios, to communicate within the building and to those outside. This prevented them from passing on critical messages regarding casualties, the progress of the fire, and specifically updates in relation to FSG calls. Such failings placed the Fire Fighters on the ground in significant danger, and led to loss of life:

- a. *I shouted to both Firefighters Welch and Crew Manager Eden that there is a casualty. I tried to use my radio to inform control that we had identified a casualty, but it was at this point that I realised the radio was no longer working. I pressed the transmit button however the radio did not work. There were no communications being received on the radio, I cannot recall when this stopped working. MET000083292_0004 Angel Fernandes MET000083292*

- b. *FF MURPHY was trying through his handheld radio to communicate with the entry control officer, he was on channel 1 while I will was trying to get through them through my comms on channel 6 but nothing was going through on the two channels. Throughout our time on the 14th floor and when we started making our way down, I did not communicate with the entry control officer and did not hear anything from the radio, it made me feel that I was on my own and it was scary. I have never known comms to go down like that but I knew that we have problems with it, when we find it difficult to hear someone.* MET00012663_0011 Charles Cornelius MET00012663
- c. *There were problems with the communications during the incident. I know that the Bridgehead were having problems communicating with the Firefighters who were being committed into the building. I think at one point they tried to do a tactical withdrawal but the alert signal to the BA wearers in the building did not work* MET00012492_0037 Cotton
- d. *I don't remember any communication at all from leaving the bridgehead. So when we got in the lift, we probably would've selected a floor, got out at maybe the 18th floor and travelled up, that would've been the plan, two floors below and walk up, so I would've transmitted then, but we didn't have the opportunity. So when I came out of the lift, it would transmit better when it's not in a lift shaft -- nothing. Nothing from the eighth floor. Tried a couple of times, maybe -- guessing -- say, the 12th and the 16th, but again, nothing.* Christopher Dorgu 9 July 2018 p.157
- e. *[Did you or he try to tell the bridgehead that you had rescued the trapped male?] Yes. [Who was that?] We both did. I switched on my radio, he tried on his BARIE set, he tried on his handheld and I tried on my handheld. After we'd completed that search, our major concern now was getting that information down to the bridgehead. [You say you tried; did you succeed?] No.* Richard Hippel 19 July 2018 p.97
- f. *[Was there any system in place for ensuring that the results of a deployment in response to an FSG call that you had handled on the CU8] The feedback from committed crews? [Yes] No, and there wasn't any throughout the incident. Later in the incident, we were asking, from the FSG CU, for feedback. We asked on a number of occasions; we weren't getting any. And all of us on the -- I believe all of us, really I can only speak for myself certainly I assumed that the reason we weren't getting any feedback was because there wasn't the personnel, there wasn't the line of communications, there wasn't the physical space within the building to be able to deal with a second line of communication. The priority was to get the information out, get the crews committed, make sure they knew where they were going. As much as everybody would have wanted that line of communication to come back, it wasn't practical –* Daniel Meyrick 10 July 2018 p.71-72
- g. *"I think partly on the fire ground radios it was just excessive use of radios, because the firefighters that were working on the outside of the building all have radios so they were trying to communicate with each other and I think it was an overload on that system. And then within the building, going vertically on the BA*

channel, we were losing that signal as well, which I would put down to some element of the structure of the building” Richard Welch 18 September 2018 p.179

- h. Because we weren't getting any information back, so everything I was giving them, I was getting nothing coming back. The guys on the command unit are getting stressed out. Even they're thinking, you know, can they put sets on? You know, have we not got enough people to go in? Can we not commit them? But it's just things change, you know. The bridgehead had to move down. You can't just -- you have to be -- you know, they probably done the right thing, these guys, by commanding and controlling the numbers of BA that went up the tower. But to me, as I said, that's how I felt: I just wanted them to keep going and just come back to me and tell me, "Yeah, we've sent a crew" or "We haven't sent a crew". We weren't getting that information back Daniel Egan 4 July 2018 p.165-166*

52. The repeater and leaky-feeder equipment, designated to boost radio and telemetry signals (from BA wearers), did not work on the night. The consequential failure to enhance the connections undermined the ability of the Fire Fighters to communicate with one another, to affect rescues, and to ensure their own safety:

- a. There was also a repeater on the stairs which plugs into the BA boards and it will repeat the signal up the staircase, but I don't think it was working. I don't think anything was working when you get off the staircase. MET000083284_0008 Ian Barritt MET000083284*
- b. Another problem was the BA crews normally use channel 6 to communicate with entry control. However this channel was proving difficult throughout the incident. There was so much feedback on the channel that it was very difficult to use. Someone tried to lay a repeater on the ground floor bridgehead which is a kind of booster to help with the signal, but that didn't help at all. MET00010913_0006 Louisa De-Silvo MET00013233 and MET00010913*
- c. Group Manager Goulbourne, I believe gave the order to introduce repeater system comms, a repeater system upwards inside the building, which would mean a BA crew going specifically to drop transponders to do a relay system through the building, which would boost our radio signals... [So I think, in summary, they go up into the tower, placed them but they didn't work] No, they didn't work, no O'Keefe 9 July 2018 p.34*
- d. I did ask for repeaters and they were deployed but had very little impact Richard Welch 18 September 2018 p.179*

53. The inability of the Command Units and the Bridgehead to communicate with one another resulted in the need to resort to the use of runners to transfer critical FSG information:

- a. *The worst pieces of equipment on the night were the radios. If the radios had worked we would have all been able to communicate between managers and crews much easier, we would have been able to work more efficiently and effectively and would not have needed to communicate by running messages.* MET00010867_0026 Daniel Brown MET00010867
- b. *Runners were also used to carry important information between sectors due to the on-going challenges with fire ground communications. Changing to channel 2 didn't help because we were still experiencing problems so we changed back to channel 1. We were relying on runners to share the information.* MET00007948_0015 & MET00007948_0016 Matthew Cook MET00007948
- c. *I think at that point; this information was being relayed by runners because the radio communications were so poor in the building. I saw a number of people who were not in breathing apparatus who were acting as runners. While this is more time and energy consuming it gives you a better relay of information, if the radio communications are not working properly.* MET00012492_0014 Dany Cotton MET00012492
- d. [Right. And after the first of half an hour or so of your being on the bridgehead, were you able to continue to maintain contact with the relevant incident commander?] *No [Right. So at what point do you think you lost reliable radio contact with the incident commander?] Just after pumps 10* O'Keefe 9 July 2018 p.113

Communications problems leading to potential loss of life – Floor 14

54. The inability of FF's to communicate within the tower, both amongst themselves and with the Bridgehead led, amongst other things, to the tragic failure to rescue four occupants of flat 113; Omar al-Haj Ali, Denis Murphy, Zainab Deen and Jeremiah Deen:

- a. FF's Cornelius, Merrion, Murphy and Saunders were the first crew to visit floor 14. They were unable to notify anyone, by radio, as to the number of residents in flat 113, and the need for additional crews to rescue them with secondary BA kits. It was only on return to the Bridgehead that FF Cornelius was able to convey that information:
 - i. *I informed him that we needed more BA set wearers and more people to go up there and rescue the 8 people.* MET00012663_0011 Cornelius
 - ii. *...also gave my opinion that we needed second sets up there and the conditions of the stairwell, because sending up another crew the same as us would've been fairly futile. We would've needed second sets to bring the people down.* Charles Cornelius 6 September 2018 P.88
 - iii. *I tried constantly to contact the bridgehead, anyone downstairs, telling them that we needed second sets and what we had found, and that we*

wasn't going to be able to bring the people down the stairs. This is on both of my radios. And Firefighter Murphy tried as well. But at no point we had anything -- we didn't hear any chatter over the radio or anything at all....

[Q. Once you had made your decision, were you able to radio through to the bridgehead?] *We tried again. There was no radio communications with the BARIE sets or with our handhelds* Charles Cornelius 6 September 2018 p.47-48

- b. FF's Herrera and Orchard ultimately affected a rescue of only four of the eight residents from flat 113. Herrera recollects being tasked to rescue three people, Orchard to rescue six:
 - i. *"To look for a family, an adult male, female and child"* MET00015824 Herrera
 - ii. *"She called us forward and told us that there are, I think she said six people in Flat 113 on level Fourteen. She said, "They were alright, they're not alright now. We need to get them out. Pete [Herrera] wrote some details on his sleeve."* MET000086069_0004 Orchard
- c. Fire Fighter Herrera contends both that he was told, by Omar Al Haj Ali, that there were no more occupants in the flat, and that, whilst he conversed with Mr Ali in the lounge of flat 113, he was not aware of the residents in the first bedroom. The credibility of these assertions are strongly challenged, and the Chair is invited to determine the matter.
- d. Notwithstanding those factual issues, it is plain that the inability of FF's Herrera and Orchard to communicate with the Bridgehead denied them the opportunity to confirm the expected numbers of persons in flat 113:
 - i. [As you were going up the tower, did you try and use your radio, if you had one?] *Yes* [What floor did you try and use your radio?] *It could've been on the 13th floor.* [Were you able to get through to the bridgehead?] *No, I don't think so* [Was the situation that, put bluntly, the line was dead, or was it there was so much traffic you couldn't break through] *Well, we tried to make contact and you try to get 6 through, no answer. You just assume they're busy or it's not working.* Peter Herrera 6 September 2018 p.106-107
 - ii. *"there were no communications".* MET000086069_005/6 Orchard
- e. Further, those same equipment problems denied FFs Murphy and Cornelius from communicating the number of residents and their location to colleagues at an earlier stage:

- i. [One question that's arisen is: what difference would radio contact have made for you're at that stage?] *For me, it was a big factor. It would have given me confidence in what I was telling the people, that we could send another crew of firefighters up, or more crews, multiple crews, with second sets. That to me would've been a key element in saving them, if you like. leaving, they came onto the floor then, and I explained to them what we'd already done: that we'd searched the whole floor, found eight people and put them into flat 113* Charles Cornelius 6 September 2018 p.47-48

The Failure to Recognise Communications Failings

- 55. Commissioner Cotton, on 17th September 2018 conceded that:
 - a. Airwave radios should have been used on the incident ground notwithstanding any security concerns surrounding their use, and could have resolved or mitigated the communication difficulties experienced (p.225-226)
 - b. She was aware of problems with the BARIE system, which was in the process of being replaced (p.226-227)
 - c. She was aware of the regular failings of the CSS, and that it was in the process of being replaced (p.227-228)
- 56. Notwithstanding those concessions, the Commissioner, when asked if there was one aspect of the LFB's response to the fire that she would go back and change, surprisingly concluded with the assertion that "*I wouldn't change anything we did on the night*" (p.236)
- 57. The LFB's 24th October 2018 updated position paper, *Actions since the Grenfell Tower* document (LFB00024387_0001) seeks to address some of the communications issues identified above:
 - a. The introduction of improved BARIE equipment is to be undertaken, but will not be implemented until 2020/21. Whilst a short-term solution is being explored, no specific details or time frames are provided (paragraphs 4.13-4.15)
 - b. The Command Unit Replacement Project, which acknowledges the on-going issues regarding the reliability of the CSS, is still over two years from completion. Officers are researching and reviewing potential interim solutions, albeit no specific details or time frames are provided (paragraphs 4.17-4.20)

- c. A thematic review is underway to identify any practical improvements to be made to the existing range of incident communications equipment (paragraph 4.28)
 - d. The challenges presented by a number of Controls simultaneously handling calls relating to the same incident have led to the proposal to establish a dedicated Airwave talk group for Fire Controls, to enable simultaneous broadcast of risk critical information to all Controls handling overflow calls (paragraph 5.4)
58. Although the work undertaken by the LFB since the fire is obviously welcome, it is concerning both that significant areas of communications problems have not been addressed in the update document, and that those matters that have been picked up, are not being pursued in an expeditious manner. In particular, no steps or action has been identified to address:
- a. The problems of communicating using the existing handheld radio system within a concrete, steel and glass building, and at incidents where there is a significant volume of radio traffic;
 - b. The apparent lack of effectiveness of the repeater and/or leaky-feeder equipment;
 - c. The problems with Barie sets;
 - d. The need for realistic training to overcome communications in what are known to be challenging circumstances;
 - e. The failure to instruct an expert[s] in the field of communications to overcome problematic communication buildings and built environments (i.e. line of sight communications relays outside of Tower Blocks and the safe use and deployment of mobile phones;
 - f. The need for funding and policy change to enable the deployment of Airwave / firelink radios directly on to the fire ground.

Conclusion / Finding Sought

59. It follows from all of the evidence set out before the GTI that if a high-rise fire like GT were to occur again, today, the LFB's response would be hampered by the same communications problems that gave rise to loss of life, and significant risk to Fire Fighters on 14th June 2017.

60. Whilst recognising that, inevitably, some of the matters raised in these submissions stray into the territory of Phase 2, we would invite the Chair to make a number of findings at this stage, Phase 1, adopting, in this regard, the submissions on behalf of those instructing BLJ and Oliver Fisher Solicitors. In addition to the fact-specific matters addressed or identified above, we ask the Chair to find that:

- a. The failure of communications in a major incident involving a high-rise building was foreseeable to the relevant decision-makers within the LFB, such that the failure to plan for such problems through risk assessments, training and the provision of either new equipment, or functioning work-arounds, led to avoidable loss of life, and put fire fighters lives at risk;
- b. The inability of, or in the alternative the significant difficulties for, fire fighters within the tower to communicate with one another, and to those outside the tower led to loss of life that could, otherwise have been avoided;
- c. The lack of effectiveness of the communications equipment available to the fire fighters within the tower:
 - i. Put those fire fighters at unacceptable risk to their own safety
 - ii. Breached the LFB's common law, statutory and regulatory obligations to provide the necessary equipment, to protect those Fire Fighters working within the tower;
- d. The wholesale effect of the communications problems experienced on the night of the fire had a material impact in relation to the abandonment of stay put since:
 - i. The LFB were unable maintain a sufficient overview of events, whilst in receipt of information from the ground, to allow for a decision on the crucial matter of 'stay put' to be made at a much earlier point;
 - ii. Once the decision to abandon stay put had been made, the failures in communications resulted in significant delays in communicating that decision to the fire fighters both within and outside the tower for implementation.

Sam Stein QC, Nexus Chambers
David Lemer, Doughty Street Chambers

Martin Howe, Howe and Co
Adam Tear, Howe and Co

6th December 2018

