

**Grenfell Tower – fire safety investigation:
The fire protection measures in place on the night of the fire, and conclusions as to:**

**The extent to which they failed to control the spread of fire and smoke;
The extent to which they contributed to the speed at which the fire spread.**

Phase 1 Report – Section 18

Communicating with the residents in an emergency

REPORT OF

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CONTENTS

18	Communicating with the residents in an emergency	18-1
18.1	Purpose of Section 18	18-1
18.2	Regulatory Requirements	18-4
18.3	Reminder of the critical times on 14 th June 2017	18-5
18.4	Announcements made from outside the building	18-6
18.5	Emergency calls to London Fire Brigade	18-9
18.6	Fire Survival Guidance (FSG) calls	18-12
18.7	Fire fighters knocking on doors	18-18
18.8	Use of the entry intercom system	18-19
18.9	Occupants requiring assistance to escape	18-22
18.10	Conclusions	18-24

18 Communicating with the residents in an emergency

18.1 Purpose of Section 18

- 18.1.1** In this Section 18, I will explain the means available for LFB to communicate with residents in Grenfell Tower during the fire, including after the decision was made by LFB, to stop giving “stay put” advice.
- 18.1.2** In my preliminary report in April 2018, I discussed the potential methods of communication available to LFB in communicating the change in stay put advice to residents of Grenfell Tower.
- 18.1.3** The issue of communications with residents is now being investigated further by the Inquiry. The issue is important because, in circumstances where advice to residents changes from “stay put” to “evacuate”, there are practical limitations on how to communicate the change in advice to residents.
- 18.1.4** This is relevant to understanding the events on the night of the fire and particularly important for future recommendations from the Inquiry.
- 18.1.5** For example, it is important to consider the suitability of Stay Put as a design basis in the future and whether there should be a move towards building design where the potential for a change in Stay Put is expressly designed for, including through active and passive fire protection measures provided to support the change and to support a second safety condition (or more) in high rise residential buildings in the UK.
- 18.1.6** Due to the large number of residential buildings, and other high risk facilities, in the UK with a building envelope formed of similar materials to Grenfell Tower, the current status quo of reliance on a single safety condition remains a very serious concern.
- 18.1.7** In this Section, I identify a number of issues relevant to communications. The use of 999 calls during the Grenfell Tower fire is the subject of separate expert evidence and witness evidence. I will not address this issue in detail here, but I provide a summary of my understanding only, in defining what communications are available.
- 18.1.8** While the precise timing and wording of the orders given by the relevant commanders will be a matter for the Chairman to consider (as well as what advice was actually given by CROs), the existing evidence indicates that at 02.35 Jo Smith instructed the control room officers to change advice to 999 callers, from stay put to leave. The available evidence also indicates that at or about 02.47 AC Roe, then the Incident Commander, also separately ordered that the advice be changed to leave.
- 18.1.9** This meant that, starting from 02:35, the guidance to be given to residents (by any means) was to make their own way out of the building, and that they were no longer safe in their location. Once the decision to formally end the “stay

put” strategy occurred, this meant the residents (a) needed to know about this change, and (b) they needed direction on what to do because of that change.

- 18.1.10** FF Gillam records (transcript 23rd July, p90) that a radio message was sent on the fire ground identifying the change from stay put. I understand from fire fighter testimony (Bell Transcript 11th September p52, Gillam Transcript 23rd July p70, Roberts Transcript 23rd July p124, Welch Transcript 18 September p149) that radio communications were not reliable on the 14th June 2017. Therefore, it cannot be assumed that all fire fighters working in and around the Tower at 02:47 would have received the radio communication identifying the change in advice.
- 18.1.11** Welch, one of the two officers in charge of the Bridgehead at that time, records in his oral evidence (Transcript 18 September, p210) that he became aware of this change between 03:00 and 03:30. The other officer in charge of the bridgehead, Goulbourne, cannot recall when he became aware of the change in advice, but he recalls that it occurred when the bridgehead was on Ground floor (Transcript 12 September, p198). The Bridgehead moved to Ground floor at approximately 03:08.
- 18.1.12** I also understand from the oral evidence of O’Neill (transcript 2nd October, p41) that after the advice to Stay Put was changed he went to the BA Main Control to make the fire fighters there aware of the change in FSG advice. The transcript does not firmly identify when this occurred, however it provides another means by which this information was disseminated around the fire ground.
- 18.1.13** Therefore, there is evidence that fire fighters being committed into Grenfell Tower after 02:47 and before 03.30 at the latest, may not have been aware of the change in stay put advice.
- 18.1.14** It is important to remember that where a resident made a 999 call, and this call was then categorised as a Fire Survival Guidance call (meaning that the resident was still in the building and in communication with the emergency services at the time), the evidence so far (e.g. Elcock IWS00000310) shows that they did not feel able to evacuate by themselves. For example, some had made multiple failed efforts to leave (Gomes IWS00001078, Roncolato IWS00000894).
- 18.1.15** As I have explained in Section 14, conditions in many lobbies and the stair could have appeared unsafe to residents in Grenfell Tower from as early as 01:25. Therefore, the later guidance to self-evacuate may have appeared in conflict with conditions outside their own front door. This perception of hazard will have been different depending on the individual and their location.
- 18.1.16** As time moved on, in the majority of cases, the hazards were worsening in the lobbies. It is therefore possible that, once the advice to self-evacuate was given, residents may not have believed that they could in fact do what was now being asked of them. For some residents it was not possible to evacuate by then. I analyse this in Section 20 of my Expert Report.

- 18.1.17** For example, Gomes (IWS00001078) identifies that after his first call to 999 at 02:21, where he was advised to stay in his flat, conditions outside his front door appeared to be getting worse and hence he attempted to evacuate with his family. This first escape attempt was unsuccessful due to the conditions in the lobby.
- 18.1.18** Elcock (IWS00000310) also records receiving advice to stay put at 01:28 when the landing was not significantly smoke logged. Elcock then made five further 999 calls between 01:33 and 02:32, at which point she could not escape due to conditions in the Level 11 lobby.
- 18.1.19** Oyewole (IWS00000852) records attempting to escape her flat at some time between 01:30 and 01:40 but being prevented by thick smoke in the lobby on the 14th floor. On calling 999 she records being told that she was safe in her flat. Oyewole was also visited by fire fighters in Flat 113 who did not explicitly advise the residents to stay or leave, but advised them to continue placing wet blankets around the doors. Conditions on the 14th floor were such that fire fighters then returned to Flat 113 with residents from adjacent flats to shelter there. Not all of the residents sheltering in Flat 113 were rescued at approximately 02:46 when Oyewole was brought out of the building by fire fighters. The four residents who remained within the flat died.
- 18.1.20** Zainab Deen was one of the residents. She made two 999 calls from inside Flat 113 after Oyewole escaped at 02:46; at 03:06 and 03:17. In the first call, Zainab Deen advises the CRO there is fire within the flat, she is advised *"You need to get away from the flames. The best – are you able to leave?"* (LFB00000405). In the second call, she is advised she has to leave and asks how. The CRO advises *'You need wet towels, wet clothing, you need to put them over your face, over your mouth and your nose, okay, and you need to leave the building and you need to use the stairwell and you need to go down, and leave the building. The stairwell is full of smoke, okay,'* (LFB00000418).
- 18.1.21** Ahmed Elgwahry, the brother of Mariem Elgwahry who went up to Level 23 with her mother, during the fire, records the following (IWS 00000988 Page 9, Line 31 *"I asked her if she could you leave? She said, "No, outside the flat it's just full of black smoke, we have no vision, and we can't see where we're going". She refused to leave, no matter what I said to her. And on Page 10, Line 33 "I said to her "why don't you try to get out" and she said "No, I'm not going to, I won't be able to see, it's all black, I'm not going out there." I said "Why don't you at least grab Mum, you know the layout of the flat, we've been there long enough. If you know the layout of the flat, why don't you just use your hands, and just, get on your knees and just get out."* I told her that she knew where the stairs are, and she said "no"."
- 18.1.22** The evidence on what instructions were to be given to residents is not clear. Jo Smith evidence (12 July, p.165 lines 22 to p.167) was that the CROs should *"tell callers to leave, to get out the building"* which extended to even saying *"they've got to leave now, they've got no choice"* but that she would

expect that the CROs would still have to make an assessment based on what the caller was telling them.

- 18.1.23** In the Control debrief LFB00003113, page 6 it states that Jo Smith makes the decision and tells A Norman. The advice was to be *“Advice to wet towels over mouth. Hold hands/stay together. Get out -- could be last chance.”*
- 18.1.24** The Roe log, records decision to *“deviate from FSG advice being delivered to FSG callers by control staff and advise people to make efforts to leave the building. Fire Sector is briefed to that effect.”*
- 18.1.25** In this Section 18, I explain the methods of communication available to tell residents to leave and whether it was possible to communicate the change in stay put guidance to residents using those methods during the Grenfell fire. I will also identify issues relevant to communications with persons who require assistance to evacuate.

18.2 Regulatory Requirements

- 18.2.1** The Building Regulations 2010 addresses emergency communication under Part B1, as follows:

“The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times.”

- 18.2.2** The current statutory guidance (and associated detection and alarm system standards) does not require high-rise residential buildings to be provided with an interlinked fire alarm system. This is because the guidance assumes that the fire will be contained within one flat. The guidance in ADB 2013 on means of escape from flats is as follows:

“2.3 The provisions for means of escape for flats are based on the assumption that:

- a. the fire is generally in a flat;*
- b. there is no reliance on external rescue (e.g. by a portable ladder);*
- c. measures in Section 8 (B3) provide a high degree of compartmentation and therefore a low probability of fire spread beyond the flat of origin, so that simultaneous evacuation of the building is unlikely to be necessary; and*
- d. although fires may occur in the common parts of the building, the materials and construction used there should prevent the fabric from being involved beyond the immediate vicinity (although in some cases communal facilities exist which require additional measures to be taken).”*

- 18.2.3** The definition of stay put from BS 9991:2015 makes the same assumption:

“when a fire occurs in a flat or maisonette, the occupants of that dwelling evacuate, but occupants of all other dwellings can safely remain in their dwellings unless directly affected by heat and smoke or directed to leave by the fire and rescue service”.

- 18.2.4** As a result, the guidance in the UK does not require there to be any system or process to either automatically sound a fire alarm in every flat or to sound an alarm in the common lobbies outside each flat. Unless a resident communicates with the emergency services by calling 999, there is no other manual or automatic means to communicate with them within the building.
- 18.2.5** I have explained in Section 15 and Appendix G that there was no automatic or manual means to sound a fire alarm throughout Grenfell Tower. This is in accordance with the statutory guidance.
- 18.2.6** The only alarm sounders, where provided, were localised within individual flats, and responded to conditions in that flat only.
- 18.2.7** It is therefore important to investigate what practical and realistic alternative provisions could have been made on the night of the fire at Grenfell Tower; and if they remain appropriate to retain going forward.
- 18.2.8** If not, changes to the regulatory framework that creates the single safety condition, Stay Put, will need to form part of any recommendations for the future.
- 18.2.9** A stronger connection between design intent, and fire service operational processes and procedures may need to be formulated.
- 18.2.10** Therefore in this Section 18, I identify the issues that I consider require further investigation.

18.3 Reminder of the critical times on 14th June 2017

- 18.3.1** I have presented my analysis of the critical times in detail in Section 13 of this report.
- 18.3.2** At 00:55, just before the initial fire incident in Flat 16, the Metropolitan Police Services (MPS) record of evacuation times (MET000080463) and number of fatalities within Grenfell Tower (MET00012529) indicate there were 294 people in Grenfell Tower spread over the 23 residential storeys of the building.
- 18.3.3** As I have explained in Section 13, the initial guidance being provided to residents who dialled 999, was to stay in their flats. This guidance was disseminated by the LFB control room officers in response to 999 calls. There is also evidence that residents were given this advice in person by firefighters. For example, Ahmed (IWS00000388) and Yahya (IWS00000498) both record receiving guidance in person from fire fighters to return to their respective flats. Talabi and Oyewole (Flat 113 on 14th floor) record being visited by fire fighters twice. The first time Talabi records being instructed to stay in his flat.

On the second visit fire fighters returned with residents of neighbouring flats to shelter in Flat 113.

- 18.3.4** As I have explained in Section 14, smoke had entered lobbies on multiple levels by approximately 01:25. Additionally, by approximately 01:40, the stair had become substantially affected by smoke. This represented a psychological impediment as well as a potential physiological impediment to residents being able to escape.
- 18.3.5** From 02:35 staff in the LFB control room were instructed to change their guidance to residents through Fire Survival Guidance calls. At this time, there were 117 residents still within the building, spread between Level 10 and Level 23.
- 18.3.6** At 02:47, the Incident Commander (AC Roe) separately decided to change the guidance being provided to residents from “stay put” and formally recorded this as an order. At this time, there were 107 residents still within the building, spread between Level 10 and Level 23.
- 18.3.7** At that stage, and as a result of investigating the systems available within Grenfell Tower, and the procedures identified in fire service training manuals, it appears to me that there were four forms of emergency communication available to LFB to direct residents to leave Grenfell Tower:
- a) Audible warnings from outside the building (e.g. amplified announcements made over a loudhailer);
 - b) Fire Survival Guidance calls between residents and LFB control centre (including cases of control officers calling residents back);
 - c) Firefighters making their way to the flat entrance door and communicating with occupants in person.
 - d) Use of the entry intercom system which requires a resident to locate themselves at the entry phone handset.
- 18.3.8** I discuss these forms of communication further in the following sections.

18.4 Announcements made from outside the building

18.4.1 Announcements from Ground level

- 18.4.2** The use of loudhailers (also known as megaphones) is acknowledged as a feasible method of communication to be used with occupants of a building. For example, the Fire and Rescue Service operational guidance document GRA 3.2 *Fighting fires in high rise buildings* (most recently published in February 2014 by DCLG) discusses communication on Page 31, excerpted below. Please refer to Appendix D of my report for further discussion of the intent and applicability of this guidance. The use of public address systems or loudhailers is specifically noted as a potential alternative means for communication with building occupants.

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.

Figure 18.1: Excerpt from page 31 of GRA3.2 -*Fighting fires in high rise buildings*

- 18.4.3 I understand that loudhailers are part of the LFB inventory equipment (see LFB response to a freedom of information act request on 18th March 2011, FOIA909.1 Part 1, <http://www.london-fire.gov.uk/Documents/FOIA909.1.pdf>)
- 18.4.4 Use of loudhailers can provide information from LFB to occupants, however there is no means for the building occupants to reply, other than shouting or waving from windows. As the communication is in one direction only, there is no way that fire fighters outside the building would be able to confirm that all residents have heard and understood any directions given.
- 18.4.5 The use of loudhailers would not provide the LFB with information about where all persons requiring assistance may be within the building. It would not provide a route for firefighters to understand the hazards that specific individuals in the building may be facing, nor would it allow the occupants to inform the firefighters about the specific help they may require to exit the building.
- 18.4.6 Additionally, announcements made by loudhailer would not be able to provide specific direction to individual residents regarding the hazards they may face on trying to exit the building.
- 18.4.7 At this stage, I have not seen evidence that the LFB relied on loudhailers to **communicate the change in stay put advice** to residents in Grenfell Tower. However, there is evidence that they were used to communicate with specific residents who were at their windows and trying to escape externally to the building.
- 18.4.8 Collins (MET00010086) states that loudhailers were used to communicate with specific individuals on the 14th June 2017:

“They are going to die if they jump out. At least they will have a chance of coming out if we can get to them. Some did. There were some that had linked up some bedding and started to climb out down that. Advised them to stay put. Stay where they are, we will get to you. I got one of the firefighters to go down and get me a megaphone and I just started shouting ‘stay where you are’ ‘stay where you are’. This may have been about half two maybe (0230 hours), quarter to three (0245 hours).”

At that point I still believed that they had a real chance of fire crews getting up to them and getting them out. That was the best chance of survival. Certainly jumping out of the window they weren't going to survive. They were way too high. So the advice from me for them was 'stay where you are we will get to you' seemed relevant."

18.4.9 And also from Collins (MET00010086), between 07:00 and 08:00:

"As much as we could do we were doing and then Gary took the megaphone and got on the roofs of the low rise building and started communicating with him [resident of the 11th floor] to actually get his flat number so they could give a more specific direction to the BA crews on which floor he was."

18.4.10 The transcript of O'Neill's oral evidence (2nd October 2018, p39) confirms the use of at least two loudhailers on the 14th June 2018. O'Neill also identifies that the loudhailer did not enable effective communication due to the other sources of noise near the building:

"Q. How many loudhailers?"

A. Well, I knew about one on the roof. I now since know there was another one down on sector 4 [East side]. But there was so much noise going on, with the debris crashing around us, the engines running of the fire appliances providing water, there was kind of a zipping noise of this molten metal zipping passed us, there was so much noise on the incident ground, really the loudhailers were useless

Q. I was about to ask you the effectiveness of the loudhailers as a means of communication given the surrounding sound. You got no impression from the actions of residents within the tower that they heard the advice; is that a fair summary?

A. No, and I was really conscious about how scared people would be in that environment."

18.4.11 **Announcements from NPAS helicopter**

18.4.12 I understand from the transcript of Roe's oral evidence (26 September 2018, p63) that the NPAS helicopters that were present over the course of the night also had loudhailer capability.

18.4.13 In this transcript, Roe is clear in his opinion, that this could not have been effectively used to communicate with residents for the following reasons:

- a) The noise on the fire ground coming from other sources was "*absolutely deafening*" (transcript 26 September, p64); and
- b) Calling the helicopter close enough to provide intelligible communications could have put the aircraft at risk due to the heat and smoke from the fire and could also have intensified the fire due to the vehicle downdraft.

- 18.4.14 On the basis of this evidence it appears that in the event of a major fire, loudhailers (whether from ground level or from helicopters) do not appear to be a practical means of communicating in general, and specifically in terms of communicating changes in evacuation guidance to residents of a high rise residential buildings.

18.5 Emergency calls to London Fire Brigade

- 18.5.1 In accordance with Article 7(2)(c) of the Fire and Rescue Services Act 2004, a fire and rescue authority must:

“make arrangements for dealing with calls for help and for summoning personnel”

- 18.5.2 The primary form of this arrangement is the 999 emergency call service.

- 18.5.3 National guidance for the Fire and Rescue authorities on management of emergency calls is provided in the Fire and Rescue Service Circular 54-2004, *Emergency Call Management* published by the ODPM and dated 8th December 2004.

- 18.5.4 Annex D of the 2004 Emergency Call Management circular identifies 3 stages to a call relating to a fire incident:

- a) Stage 1 – *“Primary questions, which aid the mobilising decision”*, e.g. address, type of fire, persons involved, etc.
- b) Stage 2 – *“Assessment questions that help build a picture of the incident, aid mobilising decisions, and assist the safety of responders and the caller”* e.g. the type and layout of building, how many persons may be involved or injured and how they are affected by the fire, any specific hazards such as gas cylinders, animals, overhead cables. During this stage, the guide indicates that the Control Room Officer (CRO) is to determine how the resources required at the incident may need to be adjusted and what information may be needed by the Incident Commander on site.
- c) Stage 3 – *“Pre-arrival advice designed to assist the safety of the caller and the public at the scene”* Also termed *“Pre-arrival safety advice”* by the guide, a call reaching this stage is intended to provide practical advice to the caller regarding how to assist injured people and safety advice. This stage includes Fire Survival Guidance.

- 18.5.5 Section 3.2 of the *Emergency Call Management* circular goes on to state:

“3.2 The overall aim of using the above stages is to ensure that the response is appropriate to the types of risk and calls attended, reduce the risk to responders and improve public safety. This is achieved by the provision of timely, accurate and relevant information, which will better equip the FRS to:

- *Resource appropriately against the identified risk (dynamic mobilising)*

- *Reduce risk to the first emergency service crews by the provision of information of the threat, pre-planning and briefing*
- *Reduce risk to the public and the environment by the provision of appropriate and accurate information, of the potential effects of any occurrence and how to implement the necessary control measures to aid public safety.”*

18.5.6 LFB Policy 539 *Emergency Call Management* (dated 14th November 2007, LFB00000737) provides guidance specifically for LFB staff on managing 999 emergency calls. This guidance is similar in nature to the national guidance and states:

“4.18 For every emergency call received, the control room officer must:

- *Obtain the address of the incident.*
- *Establish the reason for the Brigade's attendance.*
- *Record the key details.*
- *Decide upon the action to be if not already in the plan items.*
- *Record any additional information that supports safe systems of work for responding operational personnel.”*

18.5.7 Section 4.24 of the LFB *Emergency Call Management* policy also states:

“• By [sic] empathetic and reassuring (especially with distressed callers).”

18.5.8 Other key section headings in LFB Policy 539 with regard to taking information to assist with resourcing of the incident include:

- a) Validation of emergency call address details (p8) – To question the caller to confirm that the correct address has been identified.
- b) Aids to mobilising (p8) – The guidance in this section of the policy appears to be intended to assist the CRO in ensuring that the location of the fire being given to the mobilised fire appliances is correct.
- c) Specific risks (p9) – this section identifies that calls to “*specific risks*” may include additional information with regard to rendezvous points and directions of approach that are not normally asked for. Noting that this section of the policy does not give a comprehensive list of what constitutes a “*specific risk*”.
- d) Nature of Incident (p9) – This information is intended to permit the CRO to despatch the appropriate attendance and specific skills. It also may record specific hazards such as gas cylinders present on the scene.

18.5.9 Therefore, the communication made between the caller and the CRO as part of the emergency call should provide the CRO with:

- a) Knowledge of the location of occupants in a building;

- b) Understanding of the hazards that threaten them;
- c) Understanding of what assistance specific individuals require; and
- d) A means to provide guidance and direction to occupants in the building, whether they are trapped (i.e. an FSG call, described in the section below), or not.

18.5.10 It is then the responsibility of the CRO to mobilise the appropriate resources to respond to the emergency call, and to pass all relevant information on to the fire fighters at the fire ground.

18.5.11 Additionally, the call provides the caller with:

- a) Reassurance that their situation is known;
- b) Information on conditions elsewhere in the building that might affect their escape route; and
- c) Practical guidance on how to protect themselves if they cannot escape.

18.5.12 Appendix 3 of LFB Policy 539 (LFB00000737) defines an FSG call as follows:

“The London Fire Brigade define a Fire Survival Guidance call as being a call to Brigade Control where the caller believes that they are unable to leave their premises due to the effects of fire, and where the Control Room Officer remains on the line providing appropriate advice until either the caller is able to leave by their own means, is rescued by the Fire brigade or the line is cleared.”

18.5.13 The process is also explained in the witness statement of CRO Adams (MET00007762).

“A call may sometimes become a ‘Fire Survival Guidance’ call or FSG in short. A call becomes FSG when a caller is unable to get out of a building/house due to fire or smoke. This initiates a set procedure on our system to deploy certain appliances and ask set questions such as where they are in the building. A CRO [Control Room Officer] would raise their hand to inform a supervisor who will usually come over and listen to the call to assess what resources are required.” ... “A CRO would usually stay on the phone to the caller until rescued.”

18.5.14 The specific evidence of the effectiveness of the response by LFB control room staff and the effectiveness of the communication between the control room and the fire ground is being dealt with by others.

18.5.15 However, in my review to date, there is evidence that the communication between residents, the CROs and fire fighters on the fire ground was confused and filled with considerable complexity and uncertainty. As I have described in Section 14, this includes difficulties in fire fighters understanding which

floor they were on, which floor residents making FSG calls were on, and which floor residents had been spotted by observers outside the building.

18.5.16 Additionally, as I have described above, there were difficulties with radio communication on the night, making coordination of tasks more difficult.

18.6 Fire Survival Guidance (FSG) calls

18.6.1 LFB Policy 790 “*Fire survival guidance calls*” provides guidance to LFB staff on how to manage FSG calls in the control room and on the fire ground. Section 5.5 of this policy states:

“Control will attempt to gather all the information on the Control Information Form (see Appendix 2) and relay this information to the incident as and when it becomes available:

- number of flat/house;*
- number of persons involved;*
- location of caller within premises and access point;*
- condition of their location e.g. heavy smoke, slight smoke;*
- proximity to fire if known;*
- latest advice given by control;*
- time of FSG call,*
- time updated.”*

18.6.2 Additionally, Section 9 of Policy 790 states:

“9.1 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.

9.2 Informative messages from the incident ground should also contain an update on progress relating to those specific FSG calls by both the flat/house number to avoid confusion.”

18.6.3 Therefore, the purpose of FSG calls is to provide specific knowledge to fire fighters about the location of occupants and fire conditions in the building, and to provide specific guidance to occupants about the hazards that exist elsewhere in the building, together with practical information about protecting themselves from fire and, potentially, information about the progress of fire fighters toward the caller.

18.6.4 Page 18 of GRA 3.2 2014 states:

“Fire and Rescue Authorities must also have effective arrangements in place to handle fire survival guidance calls from residents and others when they believe they are unable to leave the building due to disability, poor mobility, illness or the affects of fire.

Fire and Rescue Authorities should consider both generic procedures for persons expected, likely or advised to remain in their homes (unless directly affected by heat, smoke or fire) as well as bespoke arrangements for specific buildings.

Fire survival guidance call arrangements should include:

- *details of how calls will be passed to and recorded at the incident*
- *their impact on resources and mobilising*
- *a re-evaluation process to ensure the balance of risk to the public is reviewed if circumstances change (which may result in a change to the advice previously given)*
- *how information will be exchanged between callers, Fire Control and commanders at the incident.*

18.6.5 Page 28 of GRA3.2 goes on to state:

“Fire Control rooms may receive numerous fire survival guidance calls during a high rise incident and these calls can provide vital information, which the Incident Commander can use to locate and prioritise persons requiring rescue.

...

Control operators may obtain more accurate information as to the location of the fire and/or persons in need of rescue or reassurance than that gathered by an Incident Commander who is on scene.

...

The advice offered to callers to remain in their property during fire survival guidance calls must be re-evaluated throughout an incident. Where circumstances make it necessary, an Incident Commander may need to consider changing the advice given. For example, callers may need to be advised to leave their property or to be guided from it by firefighters. The Incident Commander should also consider making use of all available systems within the building to communicate with occupants.”

18.6.6 Specific national fire service guidance regarding Fire Survival Guidance calls is provided in the document *Fire Control Personnel Training: Emergency Call Handling Techniques – Fire Survival Guidance* (dated 12th April 1994). With regard to giving advice to callers, the 1994 training materials identifies that:

7. Giving Advice

The standard advice to persons involved in a fire situation is to 'GET OUT AND STAY OUT'. Only when this is not immediately possible will further advice be appropriate.

Figure 18.2: Excerpt 1 from 1994 training manual

- 18.6.7** The 1994 manual also identifies that the CRO must be able to balance the immediate safety of the caller with the benefit of the caller being able to leave the building as it states:

“The Fire Control Operator will be required to make rapid judgements which may well be subject to scrutiny after the event when all the facts are known.

Clearly the Fire Control Operator cannot be aware of all the circumstances and the advice given may unwittingly lead the caller into further danger. Equally, though, prolonging the attachment and providing reassurance without giving advice may lead the caller to remain in a place of danger when escape might have been possible.”

- 18.6.8** Additional guidance on conducting FSG calls is also provided in the 2004 circular, excerpted in Figure 18.3.

Fire survival guidance	<p>Assess the situation</p> <ul style="list-style-type: none"> • What is preventing the caller escaping? • Alternative means of escape? • Location of caller/other persons in building <p>Assess the caller</p> <ul style="list-style-type: none"> • Age • Gender • Ethnicity • Mental or physical disability <p>Protect caller</p> <ul style="list-style-type: none"> • Open window • Keep low • Keep smoke out/seal door edges • Breathe slowly • If caller is in immediate danger, advise to open window, drop bedding or cushions to the ground to break fall, get out feet first and lower themselves to full length of arms before dropping. <p>Assist Rescue</p> <ul style="list-style-type: none"> • Caller to make noise • Mark window/location
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Figure 18.3: Excerpt from Emergency Call Management circular (54-2004, 2004)

18.6.9 Appendix 3 of LFB Policy 539 on Emergency Call Management (LFB00000737) states:

“Brigade Control advise callers to 'Get out and Stay out', however if a call is received from a High rise building where Fire, Heat and Smoke are not affecting the caller, LFB would advise that:

You are usually safest to remain in your premises unless affected by fire, heat or smoke. If the situation changes, you should leave your premises and dial 999, if you need further assistance.'

Should the caller be unable to escape, an information file containing prompts are in place on the computer-aided mobilising system to assist the control room officer in:

- *Providing guidance to assist the caller to safety.*
- *Provide timely and relevant information to the attending resources.*
- *Provide reassurance to the caller that help and assistance is forthcoming.”*

18.6.10 Specific guidance is also provided to LFB CROs in LFB Policy 790 *Fire survival guidance calls* (dated 17th April 2014, LFB00001257).

- 18.6.11** To be directed by FSG calls, a resident would need to know to call 999 and be able to speak and understand English sufficiently well (under stressful circumstances) to relay critical information to the CRO about their location and circumstances, and follow their directions.
- 18.6.12** In terms of ability to pass information to the caller, the CRO must understand the situation that the caller is in. Some of this understanding must come from the information that the caller is providing, however the CRO is also reliant on their own understanding of the spread of fire in buildings as well as information being returned by fire fighters at the incident.
- 18.6.13** The rapid spread of fire and smoke over the whole of the façade of Grenfell Tower and internally was unprecedented, meaning that CROs could not have provided advice based on previous experience of similar events. Additionally, residents experienced different fire and smoke hazards, depending on time and their location. Therefore, by the time CROs may be able to pass such information on to residents in the buildings, the information may have been out of date and conditions may have changed.
- 18.6.14** There is evidence of the FSG calls identifying persons who required assistance to escape (Egan, MET00007515 and MET00013830), excerpted below).

There were also issues getting to a man on the 11th Floor who was disabled. He was in flat 83. He was a priority. The guy was on a balcony on the front face of the building. Most firefighters were being

Figure 18.4: Excerpt from Egan witness statement (MET00007515)

02:01:43	AN	Key FLAT 161, 23RD FLR 10 PERSONS, FLAT 204 ON 23RD FLR, ONE PERSON, FLAT 14, ONE PERSON, FLAT 9, 2 ADULTS , 3 CHILDREN, ONE IN WHEELCHAIR, FLAT 175 20TH FLR, 5 PERSONS INSIDE ALL CALLS PASSED TO CU8 AT APPROX 01:50
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Figure 18.5: Excerpt from LFB Short Incident Log Report (MET00013830)

- 18.6.15** FSG calls most commonly result from members of the public calling 999. In the case of Grenfell Tower I am also aware from the oral evidence of Smith that CROs, in some cases, made calls to residents that had previously made an FSG call. However, Smith's oral evidence also highlights problems with capacity, regarding calling residents back.

1 "... I called the caller from Flat 153, calling his
2 mobile [number redacted]. The same male answered the
3 phone in a calm manner. I told him that I had spoken
4 with the London Fire Service and they advised him to try
5 and exit the building, if he could cover them with wet
6 bedsheets/cloths, and get to the nearest exit."

7 Then there's further discussion about exiting.

8 Just pausing there, it looks from that as if Essex
9 was able to and did call back this caller and advise him
10 about the change in stay put.

11 **A. Yes.**

12 Q. Is that something that the London control room operators
13 were able to do?

14 **A. No, purely for the volume of calls. I'm not sure how**
15 **many calls Essex Fire Service received on our behalf,**
16 **but it would not have been possible for us to begin to**
17 **call back callers when we had such a vast volume coming**
18 **in at that time still.**

Figure 18.6: Excerpt from oral evidence of Smith (Transcript 12th July, p148)

18.6.16 This, is not common practice as confirmed by Smith's oral evidence of 12th
July (Day 22 Page 143):

16 Q. You said, to explore this a little bit more, in your
17 evidence yesterday that you don't, as a matter of
18 practice, call people back, even though you could do
19 because you have people's mobiles.

20 **A. Yes.**

Figure 18.7: Excerpt from oral evidence of Smith (Transcript 12th July, p143)

18.6.17 Unless, a call is unexpectedly ended (Day 22 Page 145):

- 18 Q. Okay. So let me just explore this a bit.
19 So London Fire Brigade does not have a policy of
20 calling people back if they need to?
21 **A. Yes, on occasions. So we will call abandoned calls**
22 **back, but I was talking about then in a fire situation.**

Figure 18.8: Excerpt from oral evidence of Smith (Transcript 12th July, p145)

18.6.18 In principle, FSG calls should be the most effective method of communication during a fire.

18.6.19 However, as a consequence of the failure of the active and passive fire safety measures in Grenfell Tower, the LFB CROs and fire fighters on the fire ground were relying on standard procedures, during an extreme event.

18.6.20 The specific evidence of the effectiveness of the response by LFB control room staff and the effectiveness of the communication between the control room and the fire ground is being dealt with by others.

18.6.21 However, from a building performance perspective, any absence of communication methods in the building, through active systems, means that there will be increased reliance on an effective FSG process.

18.7 Fire fighters knocking on doors

18.7.1 The third method for communicating a general change away from Stay Put advice, to all out, for occupants of high-rise blocks of flats is for firefighters to methodically go to the entrance door of each flat and make contact with the resident by knocking on the door.

18.7.2 The primary difficulty in using this type of communication is that a process that allows sufficient numbers of firefighters to be deployed into the building to reach all relevant doors is required. The conditions in the stair and lobbies on each floor would also need to be such that firefighters could safely approach each flat door. In the event the fire conditions were worsening, that the action of opening the flat entrance door could expose the residents to untenable conditions or cause untenable conditions in the lobby, and this would have to be mitigated by those fire fighters also.

18.7.3 Firefighters would need to know which residents had already left the building and which residents were making emergency 999 and/or FSG calls. Without this information, if no answer is given at a specific flat, the firefighters potentially need to assign further resources to break into the flat to confirm that it is empty, rather than containing residents in need of assistance. Additional firefighters may also be required to assist the residents of each flat out of the building.

18.7.4 In the event of a fire as envisaged by the statutory guidance, i.e. a fire contained in a single flat, the resources required to undertake this method of

communication are not significant. Firefighters would need to knock on doors on the fire floor and, potentially, the flats directly above the flat of fire origin for one or two floors above. In Grenfell Tower, this would equate to about eight flats.

- 18.7.5** Undertaking this approach in the whole of the block would have taken significant resources (Grenfell Tower has 129 flats over 23 storeys.). As I have explained in Section 14, there was also a short window of time (between approximately 00:58 and 01:40) during which the stairs were free of smoke on all floors.
- 18.7.6** On the 14th June 2017, approximately half of the residents present at the start of the fire (144 out of 294) evacuated before 01:40, many of whom were alerted by their neighbours (e.g. Kebede on Level 4 and Alves on Level 13).
- 18.7.7** If the LFB were to have sent fire fighters door to door to advise all residents to evacuate then the fire fighters would have had to have known who had already left by the time the fire crews reached a specific floor.
- 18.7.8** Alternatively, LFB would have needed to provide sufficient numbers of fire fighters to methodically go to each of the 129 flats in the building and confirm that the residents had been contacted, or that the flats were already empty.
- 18.7.9** Both approaches require a highly functioning operational process with very clear communications and data recording being required at all times.
- 18.7.10** After 02:35, when CRO staff were instructed to change advice to residents on FSG calls by Jo Smith to *“tell callers to leave, to get out the building”* which extended to even saying *“they’ve got to leave now, they’ve got no choice”* (12 July, p.165 lines 22 to p.167), fire fighters approaching flat entrance doors would have been on specific rescue missions guided by the FSG calls in progress rather than approaching flats to advise residents of the change in strategy.
- 18.7.11** However, as a consequence of the failure of the active and passive fire safety measures in Grenfell Tower, the LFB CROs and fire fighters on the fire ground were relying on standard procedures, during an extreme event.
- 18.7.12** As I have previously stated, the specific evidence of the effectiveness of the response by LFB command staff and the effectiveness of the communication on the fire ground is being dealt with by others.
- 18.7.13** However, from a building performance perspective, any absence of in building communication through active systems, forces increased reliance on a substantial mobilisation of fire crews to methodically approach every flat in a high rise residential building.

18.8 Use of the entry intercom system

- 18.8.1** The building had a secure entry system based on the use of wireless security fobs. The use of these fobs has been well documented during the firefighter

evidence. The building also had a secure entry intercom to permit visitors to speak to residents and request access remotely.

18.8.2 The senior LFB commanders have been questioned by Counsel to the Inquiry about the possible use of the entry intercom system as a means to communicate with residents (O’Loughlin Transcript 24th September p171, Roe 26th Transcript September p30, O’Neill Transcript 2nd October p67). Therefore, I have investigated the capabilities of the system installed in Grenfell Tower to determine if it could in fact have been feasible to use the intercom as a means to communicate with residents.

18.8.3 Figure 18.9 shows a photograph I took of the entry intercom interface provided directly adjacent to the main entrance door at Grenfell Tower during my post-fire inspection on 7-9 November 2017.

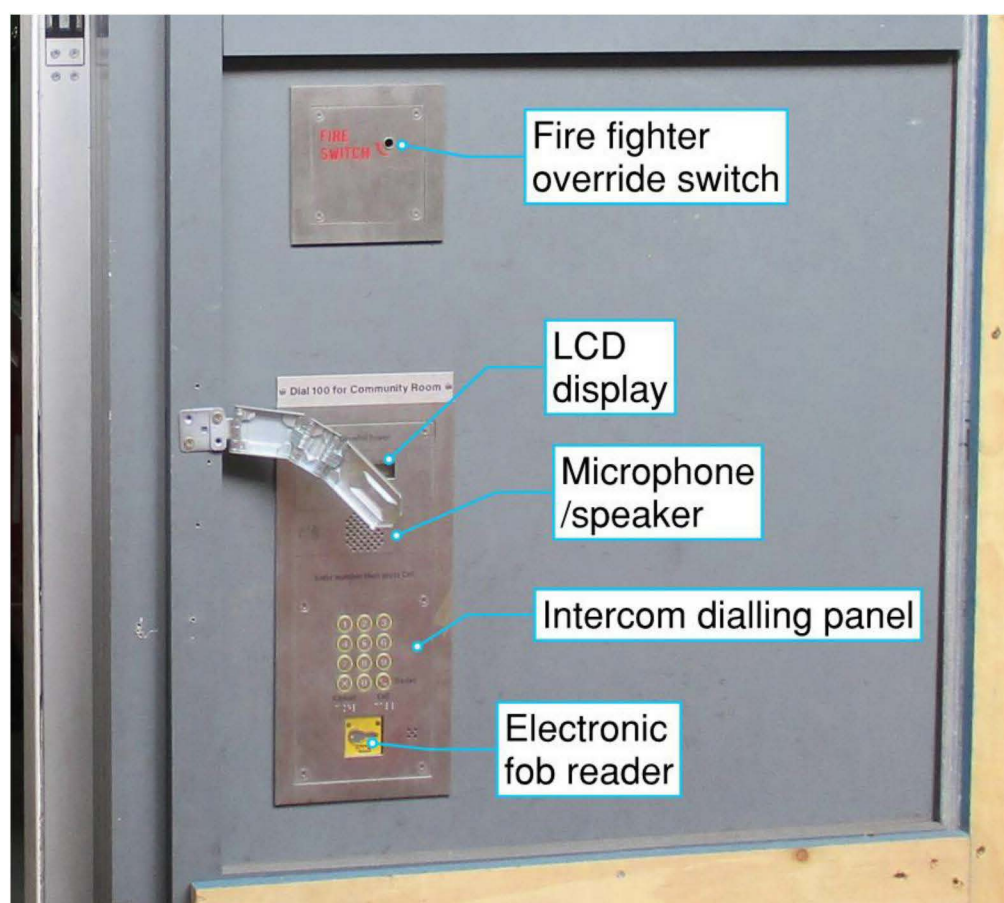


Figure 18.9: Secure entry intercom system

18.8.4 I understand from the schedule of equipment on the SW Security Commissioning and Acceptance certificate (RYD00092687) that the door entry intercom was an “Apex” digital door entry system produced by Entrotec.

18.8.5 The points below summarise the functions of the system that are relevant to its potential use by fire fighters to communicate with residents:

- a) This is an audio-only door entry system.
- b) The door entry panel includes a 'Trades' function which can provide unescorted access to the building at user-defined time periods. At this time, I have no information if this function was active, or to what times it may have been set. Noting that use of the trades function would not have facilitated communication with the residents of Grenfell Tower.
- c) The system is 'fully isolated' which prevents communication to any more than one handset at a time. It would not be possible to broadcast to every flat simultaneously from the entrance door.
- d) To contact a flat, the flat number has to be dialled at the intercom dialling panel. The flat occupier then has to pick up the call at the handset for the audio communication to proceed.
- e) I currently do not have firm evidence of the location of handsets in each flat, however I assume them to be positioned near the entrance door of each flat.
- f) The flat occupier is required to answer a call within a set duration (set at installation, 20-60 seconds) otherwise the system resets and the call has to be made again.
- g) Once a call is picked up, there is a maximum conversation time (set at installation, 45-120 seconds) after which the systems resets and the call has to be made again.
- h) The flat handsets have a privacy feature which mutes the call tone. The time period during which this stays active after being switched on by the flat occupier is set at installation but could be up to 8 hours.

18.8.6 Therefore, noting that the intercom was not installed with the necessary robustness to make it a formal life safety system, if firefighters wished to use the intercom as an ad-hoc means to communicate with residents, a flat number would need to be dialled and the firefighter would need to wait until a resident answered. If a resident did not answer from a flat, the fire fighter would have no way of knowing if the flat was empty, if the resident was incapacitated or otherwise unable to come to the intercom, or if the system had been muted for the night. There are also other ways that use of such a system would not be effective, such as if the communications cable serving the intercoms was affected by the fire.

18.8.7 By approximately 02:30, the fire had spread around to the South façade, creating a direct risk of falling debris to any fire fighter attempting to use the door entry intercom to communicate with residents. Figure 18.10 demonstrates that the canopy provided to the main entrance door may have provided a measure of protection to a person stood by the entrance door. The exact level of protection provided is unknown.

- 18.8.8** Therefore, it may not have been a safe location for a fire fighter to stay and use the intercom to communicate with residents.



Figure 18.10: Grenfell Tower main entrance door, showing protective effect of canopy¹

- 18.8.9** The concept of a formal all out communication method is possible through intercom or other system devices. However, the relevant regulations and guidance do not require such a communication method at this time.

18.9 Occupants requiring assistance to escape

- 18.9.1** As I explain in Section 15 and Appendix G, the statutory guidance does not deal with evacuating persons who require assistance from high-rise residential buildings. In Approved Document B, the Introduction B.v states only that:

“Note: Some people, for example those who use wheelchairs, may not be able to use stairways without assistance. For them evacuation involving the use of refuges on escape routes and either assistance down (or up) stairways or the use of suitable lifts will be necessary.”

- 18.9.2** No further guidance is provided for residential buildings in either Approved Document B or Approved Document M (which relates to access to and use of buildings).

- 18.9.3** The absence of specific guidance is noted in section 16.12 of the LGA Guide *Fire safety in purpose built blocks of flats* (May 2012):

¹ <https://www.theguardian.com/uk-news/2017/dec/11/homeless-because-of-a-tragedy-struggle-to-rehouse-grenfell-survivors-continues>

“Although inclusive design is fundamental to new ‘general needs’ purpose-built blocks, the Building Regulations do not stipulate additional fire safety measures that must be provided as a consequence.”

- 18.9.4** The only clear guidance I am aware of is in Section 70.11 of the LGA Guide where it deals with common means of escape. In this section, the guide refers to the provision of a refuge or a lift as follows:

“Many older and disabled residents will find it difficult to use stairs in the event of a fire, and additional measures may need to be considered. These could include temporary safe refuge areas or spaces within existing protected lobbies and stairs. If lifts are provided, where reasonably practicable, consideration should be given to the provision of evacuation lifts that residents may use in the event of a fire.”

- 18.9.5** However, section 79.9 of the LGA Guide, which deals with preparing for emergencies, appears to contradict this:

“In ‘general needs’ blocks of flats, it can equally be expected that a resident’s physical and mental ability will vary. It is usually unrealistic to expect landlords and other responsible persons to plan for this or to have in place special arrangements, such as ‘personal emergency evacuation plans’. Such plans rely on the presence of staff or others available to assist the person to escape in a fire.”

- 18.9.6** Further it provides in 79.10 to 79.11:

“Even in sheltered housing schemes, there will be reliance ultimately on rescue by the fire and rescue service in the event that residents cannot escape by themselves. However, in sheltered housing schemes, it is commonplace to hold information relating to any resident with particular mobility or other issues affecting their ability to escape. This can be made available to the fire and rescue service on arrival at the premises (e.g. by keeping it in a ‘premises information box’, which can only be unlocked by the fire and rescue service, at the main entrance).

It is not realistic to expect such an approach to be adopted where there are disabled people and others requiring assistance in a ‘general needs’ block. Any attempts to keep information of this kind must be updated regularly as inaccurate information could potentially be more harmful than no information.”

- 18.9.7** There is also non-statutory design guidance for high rise blocks of flats in BS 9991:2015 which states:

“Providing an accessible means of escape should be an integral part of fire safety management in all residential buildings. Fire safety management should take into account the full range of people who might use the premises, paying particular attention to the needs of disabled people.

NOTE 1 It is the responsibility of the premises management to assess the needs of all people to make a safe evacuation when formulating evacuation plans.”

- 18.9.8** In the next stage of my work I intend to explore the provisions made by the relevant parties to assess the needs of occupants that required assistance to escape at Grenfell Tower. I also intend to explore how this information was communicated to relevant residents.
- 18.9.9** I have heard no information in the LFB evidence that this type of information was ever communicated to them about the residents before the night of the fire.
- 18.9.10** It is also important that the Inquiry investigates exactly how many residents in Grenfell Tower required assistance to evacuate, whether they were known to the fire brigade and what, if any, steps were taken to rescue them.
- 18.9.11** I consider that there is an urgent need to change the current approach and will address this in my proposals for the Inquiry’s interim recommendations at Phase 1.

18.10 Conclusions

- 18.10.1** In this section, I have identified the forms of communication currently provided for residents and firefighters in high rise residential buildings.
- 18.10.2** There is no requirement for automatic communication methods in these buildings at this time. I have analysed how the current methods might be used to assist a fire brigade in the event they needed to change the designed for Stay Put advice.
- 18.10.3** I note that the building fire protection measures are there only to provide the single safety condition of “Stay Put” and no other safety condition is, in fact, provided for.
- 18.10.4** In my opinion, it is important to understand how the LFB could communicate with residents. It is also important to understand the extent to which limitations on communications and the effects of the use of standard processes and procedures around FSG calls, as applied to the extreme event of the fire at Grenfell Tower, affected rescue operations.
- 18.10.5** I consider this to be an important consequence of the failure of the single safety condition provided for through the active and passive fire protection measures of the building design and construction.
- 18.10.6** The Inquiry has appointed other experts to review LFB communications, and standard processes and procedures, as part of their work, and therefore I will not address this in my report.
- 18.10.7** From the perspective of the active and passive fire protection measures in the building, however, I note the following key matters:

- a) The current approach in the statutory guidance is that blocks of flats are not provided with an automatic or manual means of raising an alarm sounder or providing voice alarm announcements. Where there is a large fire in a high-rise block of flats, such as at Grenfell Tower, it is not possible to easily communicate changes in advice (e.g. from “stay put” to “all out”).
- b) Where there is no central alarm system to alert residents to the need to evacuate, firefighters become entirely dependent on
 - i. Loudhailers,
 - ii. 999 calls,
 - iii. FSG calls,and they also rely on data from these to direct evacuation or implement rescue from every flat that contains residents.
- c) Currently, building design guidance does not address the need for active and passive fire protection measures to be provided for this form of rescue operation – during a fire on multiple floors.
- d) I have discounted the use of building intercom systems as a life safety system in the format installed at Grenfell Tower. However, I note that such systems could, in the future, be designed to assist with a total evacuation of a residential building.

18.10.8 These methods had significant limitations, in the major multi storey fire, at Grenfell Tower.

18.10.9 In light of the number of other residential buildings in the UK with a building envelope formed of similar materials to Grenfell Tower, serious consideration should be given to changing the current approach.

18.10.10 I am also concerned about how the above limitations on communications affect those who require assistance to evacuate from high-rise residential buildings.

18.10.11 I will address the consequences to the safety of the residents from these ineffective communications systems in Section 20 of my report.