The Sheku Bayoh Public Inquiry

Witness Statement

Colin Gill

Taken by [redacted]
on MS Teams
On 18 March 2022

Witness Details

1. My name is Colin Gill. My year of birth is 1981. My contact details are known to the Inquiry.

2. I work for Police Scotland as the Airwave Services Coordinator based at the Airwave Lifetime Management at Digital Division [redacted]. I head the team responsible for the Airwave Services for West Command of Police Scotland. I have been in the role of airwave services coordinator since 2014. I hold a BSc in Computer Science and have worked in this area since I joined Strathclyde Police in 2008. One of the areas that I am responsible for is the provision of analysis of the use of Airwave Services by Police Scotland.

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Previous Statement

3. I have had an opportunity to read the statement I provided to PIRC on 14 February 2018.[1] The statement I gave to PIRC was true and accurate. I accept the content of the statement. perhaps some of the phraseology is maybe not the way I would have drafted it, but the actual general content and the meaning of that is correct.

4. I have also had an opportunity to read the report I provided to PIRC on 14 February 2018[2] providing an overview of the airwave system. The information I provided in that report was true and accurate.

5. This report was produced following a telephone conversation with PIRC initially round about what they were trying to ascertain and then there was an email providing a list of questions. So, we recommended that we provide that in terms of a document to answer those questions, but also to give a bit of an overview in terms of some of the wider aspects of Airwave and what the logs represented, because sometimes we can be guilty of just providing logs and not necessarily with much in the way of an explanation as to what those logs contain. And I felt it was important to try and call out what the content of the logs that had been provided was as well as answer some of the questions to try and provide as full a response as possible to assist with the Inquiry.

Police Radio Functions

6. I'm asked about the functions that the officers' terminals or radios in terms of how they can be used to communicate. There's a number of different functions within the devices and they tend to fall into two function areas; voice

[1] PIRC-00507
[2] PIRC-03838

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services and data services. In terms of the voice services, the officer can make a group call. So that group call is basically a call from their device to everybody else who is on that talk group or radio channel where effectively only one party can speak at the one time but many people can listen. So, those group calls are used routinely within policing to enable the officers and the control rooms to make sure that everybody's aware of what's going on. So we talk about those as being group calls and they can work in both directions, obviously, from the officer to the control room and vice versa.

7. In terms of point to point calls, the officers can dial a point to point call, which is a one-to-one or a private call, and that's between two parties. So the parties can either be another handheld or vehicle radio or, indeed, one of the control room operators can take part in a point to point call, so effectively it's a two-way call between those two individuals and can't be heard by anyone else. Then the devices are capable of making telephony calls as well, so they can receive inbound telephony calls from internal numbers within Police Scotland telephone exchange. However, they can't receive incoming calls from any external number i.e. outwith the Police Scotland telephony estate. So, for example, they couldn't call from a mobile phone through to Airwave devices, that's not a function that we permit. They're also capable of making outgoing telephony calls, so they can call any telephone number, any mobile or landline number. There are certain kinds of premium service numbers that are blocked, but the majority of telephone numbers can be dialled from the devices.

8. In order to point to point another officer, you would need to know their Individual System Subscriber Identifier (ISSI) number. Typically the officers that work together will have a contact list within their device which allows them to basically save the ISSI numbers of those that they work with, their sergeants, their inspectors and that kind of thing, to make sure they've got the ability to contact their teams if they need to discuss anything.

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9. There was some legacy practice within some of the forces, I'm not able to comment on which specifically, where the last digits of your ISSI number were the same as your shoulder number. I'm not certain that that was a practice in Fife - although I don't believe it was - but it was in some areas. So there would have been an easier way, if you like, to work out an officer's ISSI number if you didn't know it. The situation in Police Scotland now, the way in which officers move around, we don't do that practice anymore, so effectively an ISSI number is assigned to an officer and it stays with that officer unless they move across from one division to another, say from North into East, for example, then we will change their ISSI number at that point and that's to do with emergency activations from the device going to the appropriate control room. There is a requirement to swap their ISSI at that point.

10. The ISSI number of the calling party shows on the receiving device when a point to point call is made. Also when the talk group is active it shows you what talk group is active and the ISSI number of the person broadcasting at the time. So you would need to look at the device and note the ISSI number. What's more commonplace, is that if there's someone trying to track down an ISSI number they'll ask the control room, "Can you confirm the ISSI number for Officer Such and Such," or they'll ask, "Could you ask Such and Such to point me," is quite often the phrase that you'll hear. And they'll pass that through, that number will be passed on to allow the officers to make contact.

11. Then in terms of data, they are able to send short code messages, so what we would call status messages, and those status messages are basically designed to give us a very quick way of getting a status update from the officer so that marks them at scene or heading into refreshment or available to take another call. The officers will press and hold a button on their radio, one of the sort of key buttons that will send that specific status which updates our command and control system, STORM, with the officer's status and it means

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they can send that information through without actually having to speak to the control room.

12. There's a national configuration for status messages. We have short codes that are programmed into devices. So, for example, pressing and holding 1 marks you at scene, 4 marks you as clear, 8 is refresh, there's a list of them that are all the same in all the devices. There is a wider range of status messages available than those that are programmed into short keys, but the officer would need to go into the menu of the device, and then there's a list of statuses that they can pick from there. If they were going to court, for example, there's a status in there that they can send. The majority that get used at "at scene" and "clear", they're the two that we tend to use most frequently and that updates our command and control system automatically as well.

13. Then, lastly, in terms of the majority of the functions, is Short Data Service (SDS) messaging. So SDS messages are quite similar to a mobile phone text message which can be sent between the devices, so between handheld devices we can send SDS messages, although that's fairly uncommon. The most common use of those messages is from sending location information in the form of text messages to our system, automatic resource location (ARL), which will then take the content of those text messages, it strips out the GPS location information from within those messages and we use that to map the officers' locations on the STORM command and control system, which allows the controllers within the control room to see where those resources are at a given time. It can also be used retrospectively to work out the location of officers at a particular time. It is subject to the devices being in GPS coverage, again, so they need to have GPS signal in order for that to work. [redacted] Some of the devices we use are relatively elderly, as well, so they've maybe not got

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the most up to date GPS chips within them. So they can lose their GPS location more readily, [redacted]

Call Detail Records (CDR) Logs

14. There are effectively two sources of CDR logs which are those logs in which we can provide an extract to show the times and dates that activity occurred, but it doesn't show the content of that activity. The content is really coming from the audio recordings. Primarily it's only group calls that are recorded. There will be the occasion when, for example, the control room operator makes a point to point call to, say, an officer on the street; that call will be audio recorded at the operator's workstation because we record everything audio that they partake in. But if it was myself and yourself out on the street and I point to point you from my radio to yours, that call is not audio recorded. The log that it exists would be recorded, but not the audio content of that call.

15. If a status message had been sent, it would appear in the data records. So, you'll see on some of the data records where there are status messages they appear literally with that as the title in the column to indicate that it is a status message. There's then, depending on the logs, where the log source comes from, it either defines the status code as a number or as the actual wording of the status message or sometimes both. It just depends on the actual log file itself. We tend to try and use the wording of the status message more commonly, because that's obviously more helpful in terms of being able to decipher what the logs mean, but there are some reports that will produce the actual number of the status message. Again, there is a lookup sheet that is available to help us understand which of the network status messages, how they transfer into the actual wording, if you like, of that status message.

16. The content of SDS messages isn't extracted, it's only the fact that a message is sent from one device to another. The only place for the actual message to

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be found is within the device itself that sent it, providing it hasn't been deleted. And, again, similar to your mobile phone, you can obviously delete messages that have sent or received and also if a message is sent into our command and control system, which is possible. The officers can sometimes do that to update the fleet number of the vehicle that they're driving, for example, so that the control room know what car they're in. They can text that information in to the control room and it's recorded within the command and control system that a message has been received.

17. I am asked to expand on a paragraph from my statement, at page 2, in which I say *"I have also been asked to look at: Prod No 0374 All Call Types inc SDS 20150503 PD4470 (DC Andrew BROWN) as an example of the reports PIRC has acquired relating to a number of officers' ISSIs. I can confirm that these are standard reports run from the CDRs (Call Detail Records) and would contain all activity from given ISSIs. There is no Airwave activity data/information not captured in these reports."* What is written here is correct. However, it is maybe not exactly how I would phrase it. So, how I would probably phrase is that there is no activity that comes from that Airwave device that would not be captured in those logs. So the way we run the report, affects the reports we obtain, so it really does depend on how the question is asked in terms of capturing information. Generally what happens is we get a list of ISSI numbers and they say, "Please provide us all of the activity from these ISSIs.

18. We run the reports to show any activity that has been made by those ISSI numbers or any calls, point to point or telephony, that have been received by those numbers. What we are not able to do within the call records is to show any incoming group calls that have been received by those devices. There is no stamp, if you like, on the Airwave call data records that easily captures that within the record source. To get that information we would run a report that shows all of the calls that took place on a talk group and that gives us a better

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indication of calls that were made but still doesn't give us guarantee who actually heard those calls. There's so many factors within that. So we can't do inbound group call, but we can do outbound, all of the activity outbound, and incoming telephony calls where there is a call from within a Police Scotland network or an incoming point to point call. So generally speaking, the logs indicate all of the activity that is able to be made from the device and any incoming telephony and point to point activity.

Airwaves timings

19. I'm asked to explain the timings of the Airwave system and advise as to its accuracy. The CDRs are always recorded in Greenwich Mean Time. So during British Summer Time, timings have to be adjusted to GMT +1. The wording of my report, at page 3, is that *"Airwave uses a master system clock known as the Network Time Server which takes timings from the Global Positioning System (GPS) satellites and from which call activity timings are derived and subsequently used by the Airwave billing system to produce the Call Detail Records (CDRs). The CDRs are always recorded in Greenwich Mean Time and as the master system clock is controlled by the Satellite Global Positioning System, Airwave Solutions Ltd indicate that the timings used within the logs are accurate to within one second per month."* We don't have visibility of how the actual system is set up. That's within Airwave Solutions, who are the service provider. It's within their remit to provide that. We have approached Airwave previous to ask them how accurate was timing, where was timing derived from and could we be confident that the time that was within the Airwave logs was accurate. So, that was the wording that they provided to basically to give guarantees round about the timing itself.

20. There is a module that looks towards the GPS satellites and it gets a fix on those satellites and it's that fix which sets the time within the master clock and

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all of the other servers within the Airwave environment use that master clock, the network time server, to take all of their timings from. That's where Airwave can guarantee that across all of their systems which produce the call detail records that they're all using the same timing source from that network timings server and therefore they should all be accurate to within the drift that comes from GPS time bearings which had roughly a second per month of inaccuracy, if you like. So it's very accurate in comparison to some of the other timing sources that we might have access to.

Automatic Resource Location (ARL) System

21. The ARL system provide a real-time location of officers, but we can also look at historical data to find an officer's location at a certain point in time. I'm asked about the accuracy of the ARL data. It can vary depending on how strong the GPS signals are. Effectively, the devices need to see a number of satellites before they class themselves as being "in fix", where they have a fixed position. We then have settings within the device which allow us to refine how accurate positions are. We've done some work across a number of years to make sure that those positions are as accurate as possible. What that does mean is that the devices will sometimes not necessarily be in fix for as often as they could be because if you take your mobile phone as an example, when you open a mapping service you'll sometimes see a great big blue circle round about your location and that's your device saying you're roughly in this area and it starts to refine your position more accurately the longer it sends information back and forward between the satellites the more refined the position of your device becomes.

22. The Airwave terminals are not quite as smart as that. So they've got the ability to say distance to the satellites, how far they are, and that helps them to work out their position. We generally use the phrase, just to help the officers understand, it's accurate to within the width of a terraced house. What

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that effectively means is, within a couple of metres. It's not accurate to the foot, if you like, within measurements, but it's certainly accurate to a position of metres. For handheld devices, there is a setting within the device that says that if it's not sure that it's accurate then it will not send that position, it will wait until it is more certain, that that's a genuine position before it sends it. So we're generally confident that GPS information that comes from the devices, is fairly accurate to within a few metres.

23. I'm asked specifically about the likely accuracy in the specific circumstances of this incident, i.e. a residential street in the town of Kirkcaldy and what kind of factors may impact on accuracy. In terms of officers being within a street where they're not under cover, i.e. not covered by a roof or canopy that would influence how well the GPS works, then we would anticipate that their location would be fairly accurate.

24. Rural locations, generally speaking, often have the best accuracy because there are less buildings and structures to cause issues. Buildings, underground car parks, things like that, can cause real issue with GPS where it can't get a fix if it's not certain where it is and on occasion you'll get what we call a flyaway report, where the device will say, "I think I'm here," and it's relatively certain, but it's a single, you know, a single location report that's a good distance away from where all the other ones are and you can discount that because the timing between the previous and subsequent reports is too close for the device to have moved that far and then come back. So those generally you can spot within the data. We've done, like I say, a lot of work over the years to refine that to try and limit the number of those plots that come out.

25. I'm asked about the emergency activation button. The emergency activation button is located on the top of the radio. To operate it, you require to press and hold the emergency button [redacted]

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[redacted] it's not something that would be done accidentally. Effectively the emergency activation is there to allow the officer to seek assistance in an emergency situation. So they require backup from other resources. It also gives the officer the ability to effectively speak hands free on the device. If they press and hold the emergency activation button it automatically creates a group call and it sends an emergency status message. So, the status message that goes out is, "Emergency". That emergency status is received within the command and control system. The group call that is automatically created shows that that device is broadcasting. Handheld devices specifically go into a period called "hot mic", for a period of 10 seconds, where the microphone is opened automatically without the officer having to push the button that they would normally use to transmit. So when they press the emergency activation button that call is opened automatically. It allows them to then speak to the control room. They generally pass the location and the nature of what they're looking for, in terms of assistance in that ten seconds. The control room can then respond to that.

26. The device stays within emergency activation mode until the officer clears it down. The officer requires to press and hold the "Exit" button to cancel the emergency activation. If they leave it running, and typically that happens if they are busy dealing with something, perhaps they're trying to restrain somebody who's violent, that kind of thing where they're not able to press the button on the device, the emergency activation will keep running until they have the opportunity to cancel it. And effectively any of the activity that happens from the control room or from other individuals on the talk group, that all gets classified as emergency activation until the emergency activation on that talk group is cleared down. During emergency activations you'll see a number of different calling parties, within an emergency activation, including the control room, as being party to that emergency activation until it's cleared. And once it's cleared then the logs just go back to showing normal group and point to point calls at that point.

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27. I've been given sight of a document "Combined Airwave Call Activity Data (Kirkcaldy 01) and Transcription".[3] I understand that this is a document combining Airwave call activity data for Kirkcaldy 1 talkgroup from 3 May 2015 with transcription of the transmissions. I am asked to explain the emergency transmissions on pages 6 and 7 of that document. On page 6, I can see an emergency status message at 06.20.42. by PC Alan Paton. There then follows transmissions which in terms of call event types are either an emergency call or emergency PTT. So emergency PTT is a push to talk within the group call. So when you look at the record structure there, as the emergency activation takes place a status message is fired off to command and control at the same time as the group emergency call and the first PTT event. So if you look those are all the same timestamp, so effectively they all happen at the same time but the log captured them as being separate instances, just so you can see what's happening at the time. So you get emergency activation status, the emergency call is created and the first emergency PTT, so that's the officer's terminal has become that hot mic, as I described previously, that PTT is automatic, so the officer doesn't need to press the button, but the actual device itself is keyed up, if you like, to shout in.

28. What you see immediately after that in the emergency PTT that comes back where you see "DGC 615[redacted]" at 06:20:43 Control 1 come back in. That's basically the controller pushes to talk and we see that quite often within emergency activations that the officer sends out the emergency activation and the controller instinctively push to talk to ask them what's happened, is everything okay, and sometimes that cuts through their hot mic because the controller's got the ability to take precedence over the officers on the street to maintain control and they inadvertently will cut off the audio of the emergency activation by hitting their push to talk, which is typically a foot pedal that the

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controllers use. And it's instinctive, they tend to do that quite quickly and you'll see that's within a second of the emergency activation coming through the controller's pressed their push to talk. So that first audio from the officer we're not necessarily going to hear because the controller's cut it off, like I say, inadvertently.

29. Now, what then goes on, we've then got additional officers then coming in effectively just on the back of that, so a couple of different officers, and you'll see that they are emergency PTT because they are push to talk activity on that talk group whilst that talk group is in emergency status, if you like. So the actual whole talk group is flagged to emergency. The other officers are aware of it, it activates on their device, it turns the screen red, it beeps and flashes to give them an indication that there is an emergency ongoing, it's very, very noticeable to them. So that first one where you see activity number 3 from Stephen Kay, who's one of the sergeants, by the looks of it, PS Stephen Kay, aye, from India 4 Control, "Keep off, that's somebody activated the emergency button." So that's basically just someone saying, there's an officer needs assistance, to try and keep the talk group quiet. And then it will continue on through various different people pressing the button. Each time the broadcasting radio that activated the emergency activation, each time they speak in between somebody else, if that makes sense, then they also send an emergency status at the same time. It's just the way the radio's programmed. So you'll see those emergency status messages coming through more than once from a radio during an emergency activation and that's perfectly normal.

30. While an officer's radio is operating as a "hot mic". Sound round about that radio is often transmitting within the range of the device. Again, it's not uncommon for us to review audio recordings for emergency activations and to hear a fracas in the background or, the officers trying to maintain control of the situation, whether telling somebody to "Stay back" or voices of other officers or members of the public, it will pick up the situation going on round

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about them to within the range of the microphone. So something very far away, it wouldn't hear, but something up close they would generally pick that up.

31. It then looks as though there was a further emergency status sent by Ashley Tomlinson at 06:21:19. It appears as though that's a separate emergency activation, just given the fact that it is the status against that device. That's not necessarily uncommon. Again, if there is a disturbance we can sometimes have multiple emergency activations from different zones within that emergency. But at that point in time, the first emergency activation is still well ongoing within the call, the emergency call is still active, so it is just an additional emergency PTT that follows on the back of that, effectively.

32. There is then an active emergency call until 06.23.01, where it says, "Appears to close the emergency status on the talk group." Where someone in "Zone 49 Site 0", presumably the ACR, clears the emergency call.

Airwave audio recordings

33. I am asked to clarify the way in which the airwaves are recorded. The airwave recordings are sound activated. So if there is no sound on the talk group then the talk groups are not recording and when that sound triggers through the recordings will kick in, effectively, and record what is heard. So, there will be far less recordings in a 24-hour period than 24 hours. There will be periods of silence that are not recorded. The actual recording solutions themselves are set up that way, they're set up to pick up and to manage the recordings so that they are only recording audio activity on the talk groups.

34. There are two types of airwave recordings. We have what we tend to call bulk recordings, so there is a service that Airwave provide that the bulk recording interface and effectively we tell Airwave which talk groups we would like to

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appear on that bulk recording interface and that gives us a clean recording of everything that happens on that talk group only, so we tell them what talk groups to configure. So Kirkcaldy 1 as an example, it will allow you to listen to everything that happened on that talk group irrespective of what controllers it was, what officers it was, it just contains all of the audio recordings. Now, we have a limited number of those bulk recording interfaces, they're quite expensive, so we also record in the control room all of the workstation or pod recordings where any activity that the officers or the controllers are involved in within the control room, any calls are audio recorded. Sometimes the controllers will have multiple talk groups that they monitor at the same time. So, effectively they might have the local working talk groups that they're got on, they might then have a separate talk group that's got a wider divisional resource that's available on it, a roaming resource, which tends to be a bit quieter. They've listening to that too just in case there's anything they need to inform those officers of or if they shout in. So sometimes you can get multiple activities recorded on the pod at the same time and it can be a bit distracting in terms of where that audio's coming from.

35. For that reason we try to make sure that for the primary operational talk groups, there is a clean recording so that we can then take that from the bulk recording interface and listen to anything that happened on that talk group. If you were an officer out on the street that's the most that you would hear because you don't have that multi-layer audio that the controllers do. So, the officer in the street listening to that particular talk group, that's what they're going to hear. So that's the purpose of the bulk recording. And the pod recording will pick up any point to point calls the controller makes, any telephone calls they make, any of the group calls they're involved in, where they're listening to multiple group calls you'll hear that all happening at the one time when you listen to the recording from the workstation or the pod itself.

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36. The officers on the street can only listen to one talk group at a time through their personal radio. So basically they'll affiliate to a talk group and hear the audio that comes through on that. The only other thing they would get is point to point activity, if someone point to point calls them then obviously they get those calls. Similar with telephone calls. But primarily they're listening to their operational talk group. There is the ability for some of the devices to set up to scanning, which effectively allows them to try and listen to multiple talk groups but they can't do it at the same time. What, effectively, the device does is it has a list of talk groups that they're interested and it will jump between those talk groups as audio appears. We generally discourage the use of that because it's limited by the way in which it works on the network, there needs to be somebody on the same cell site, the same map as you listening to one of those other talk groups in order for you to get those broadcasts and it also means that the devices jump between channels and it can be a bit distracting for the officers in terms of where that audio's coming from, what channel was that on. It really works best if you're sitting looking at the device, you know where the audio is coming from. It's turned off on handheld devices, but some of the vehicles are capable of doing it, some of the vehicles are capable of listening to multiple channels, albeit not at the same time, just basically one after the other, consecutively as those calls come through.

37. It's possible that an officer in a vehicle could be listening to their local talk group on their handheld radio and have the radio in their vehicle set to a different talk group. Generally that tends to be what the officers will do. They tend to have the car set to one channel of interest and the handset on their local working channel.

38. I'm asked if I know any of the other witnesses in this case. No, I don't other than Pauline Donaldson. I have not spoken to any other witnesses about my evidence.

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39. I'm asked if I have been following this case on social media or on the news. Not especially. Organisationally we're aware of the incident and the Public Inquiry, but I've not paid particularly close attention, particularly on social media, to it. I wouldn't say that has influenced my evidence in any way.

40. I believe the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

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