| 1 | | Wednesday, 9 November 2022 | 1 | | it, just selected parts. Do you understand? |
|----|-----|--|----|----|--|
| 2 | (9. | 57 am) | 2 | A. | I do. |
| 3 | MR | R BEER: Good morning, sir, can you see and hear me? | 3 | Q. | Can you tell us your qualifications, please? |
| 4 | SIF | R WYN WILLIAMS: Yes, thank you. | 4 | A. | I studied software engineering at University of |
| 5 | MR | R BEER: Thank you, may the witness John Simpkins be sworn, | 5 | | Birmingham. I am a member of the British Computer |
| 6 | | please? | 6 | | Society, Chartered IT Professional and an Incorporated |
| 7 | SIF | R WYN WILLIAMS: Yes, of course. | 7 | | Engineer. |
| 8 | | JOHN SIMPKINS (affirmed) | 8 | Q. | You joined Pathway, ICL Pathway Limited, in 1996, |
| 9 | | Questioned by MR BEER | 9 | | July 1996; is that right? |
| 10 | MR | R BEER: Good morning, Mr Simpkins. My name is Jason Beer | 10 | A. | Yes. |
| 11 | | and I ask questions on behalf of the Inquiry. | 11 | Q. | As an application developer; is that right? |
| 12 | | In front of you, there should be a witness statement | 12 | A. | Correct. |
| 13 | | in your name. | 13 | Q. | Can we look at paragraph 9 of your witness statement |
| 14 | A. | Yes. | 14 | | please, which is page 3. Just wait a moment, it will |
| 15 | Q. | Can you turn, please, to the last page of it. It is | 15 | | come up on the screen. You say in paragraph 9: |
| 16 | | 18 pages in length, dated 4 August 2022, and for the | 16 | | "While I was initially taken on as an Application |
| 17 | | transcript the reference is WITN04110100. | 17 | | Developer, I only remained in this role for a very short |
| 18 | | On page 18 is that your signature? | 18 | | time and did not in fact develop any aspects of the |
| 19 | A. | Page 19, yes. | 19 | | Horizon system myself. During my time as an Application |
| 20 | | It's page 19, is it? You are quite right. Are the | 20 | | Developer, I worked with Dai Jones to learn the coding |
| 21 | | contents of it true to the best of your knowledge and | 21 | | language being used at the time." |
| 22 | | belief? | 22 | | When you were working with Dai Jones, was there any |
| 23 | Α. | They are. | 23 | | discussion about the quality of the coding language |
| 24 | Q. | A copy of that will be uploaded to the Inquiry's | 24 | | being used at the time? |
| 25 | | website. I'm not going to ask you about every part of | 25 | Α. | No, I was really only training at that time, so I was |
| | | 1 | | | 2 |
| | | | | | |
| 1 | | being taught how to interact with the Riposte system. | 1 | | "A key role of the development team was to ensure |
| 2 | Q. | Did Dai Jones ever discuss with you the quality of the | 2 | | that the Visual Basic coding being used by the time |
| 3 | | Coding on the Escher product known as Riposte? | 3 | | interfaced properly with Escher's software product, |
| 4 | A. | Not at that time. | 4 | | Riposte" |
| 5 | Q. | I said at any time. | 5 | | Did it interface properly with Escher's product, |
| 6 | A. | Yes not unless there was a PinICL that was raised on | 6 | | Riposte? |
| 7 | | it. | 7 | A. | Yes, that was the way it was that was the way we |
| 8 | Q. | I'm sorry? | 8 | | interfaced with that product, that was |
| 9 | A. | Not unless there was any calls raised on the code. | 9 | Q. | I know it was the way. I was asking you did it |
| 10 | Q. | Can you recall whether there were? | 10 | | interface properly? |
| 11 | A. | There were many calls raised on the code over the years. | 11 | A. | Yes. |
| 12 | | I don't know whether Dai Jones raised any of those | 12 | Q. | There were no problems with it at all? |
| 13 | | calls. | 13 | A. | With Riposte or Visual Basic or the interaction? There |
| 14 | Q. | Can you remember any wider discussion with Dai Jones | 14 | | was I don't recall any problems with the Visual |
| 15 | | about the quality of the coding on the Escher product | 15 | | Basic and the interaction with the DLs(?) between Visual |
| 16 | | Riposte? | 16 | | Basic and the Riposte application. |
| 17 | | No, I don't. | 17 | Q. | Then over the page, you say: |
| 18 | Q. | You don't? | 18 | | "Access to the Escher source code was only granted |
| 19 | A. | I don't recall any further conversations with Dai Jones. | 19 | | to the development team if absolutely necessary." |
| 20 | | I only worked with him for a very short amount of time. | 20 | | So, to your understanding, it wasn't a question of |
| 21 | Q. | After that initial period of training as an application | 21 | | intellectual property rights preventing any access to |
| 22 | | developer, when you worked with Dai Jones, did you have | 22 | | the Escher source code; is that right? |
| 23 | | cause to work with him again? | 23 | A. | I believe so. I think we had a copy of the source code |
| 24 | | No. | 24 | | on the sixth floor in a safe in case it was ever |
| 25 | Q. | You say the language was known as Visual Basic: 3 | 25 | | required, but I don't recall it ever being used. 4 |
| | | | | | |

| 1 | Q. | You say that access was only granted if absolutely | 1 | A. | Yes, I think everyone had that title, really. |
|-----|----|--|----|----|--|
| 2 | | necessary. Was it necessary? | 2 | Q. | What was the role of a project specialist? |
| 3 | A. | I don't recall it ever being used. | 3 | A. | It was to receive tickets or we sometimes had direct |
| 4 | Q. | But that facility was there? | 4 | | email and we would investigate problems on the live |
| 5 | A. | That facility was there, yes. | 5 | | system and then potentially reports, as well, to service |
| 6 | Q. | It wasn't that you could never have access to it? | 6 | | management. We try and produce workarounds if there was |
| 7 | A. | I believe the reason it was there was so that people | 7 | | an issue and try and resolve problems that were passed |
| 8 | | could have access to it. | 8 | | to us, really, on the live estate. |
| 9 | Q. | Yes, thank you. You then moved into the software | 9 | Q. | Was there a level below a project specialist in the SSC? |
| 10 | | support centre. Is that called the SSC? | 10 | A. | Not by terminology. You had areas of specialism, so |
| 11 | A. | Correct. It was initially the system support centre and | 11 | | there were many products that made up the solution, like |
| 12 | | then, I think | 12 | | the databases and Riposte, the agents and and people |
| 13 | Q. | I was about to ask. The term "software support centre" | 13 | | were specialists in certain areas, but I think they were |
| 14 | | and "SSC", is that used interchangeably sometimes with | 14 | | all called project specialists. You might be working on |
| 15 | | "system support centre"? | 15 | | Tivoli, the rollout database, ACMS, or any of these |
| 16 | A. | It is. I believe, originally, it was "system support | 16 | | other areas that you were still, I think, called |
| 17 | | centre" up until after Mik left and I think it got | 17 | | a project specialist. |
| 18 | | changed to "software support centre" after that time. | 18 | Q. | In, say, 1999/2000 at the rollout stage of Horizon how |
| 19 | Q. | You have remained, I think, in the SSC for 26 years now. | 19 | | many people worked in the SSC? |
| 20 | | You are currently a team leader in the SSC? | 20 | A. | I think we went up to about 25. |
| 21 | A. | That's correct. | 21 | Q. | At, say, 2010, at rollout stage of Horizon Online, how |
| 22 | Q. | Before you became a team leader in the SSC I think | 22 | | many people worked in the SSC? |
| 23 | | that was in 2010 what was your job title? | 23 | A. | Probably slightly more. I think Mik was hiring at that |
| 24 | A. | Project specialist. | 24 | | time, but yes, I mean I think it probably topped out |
| 25 | Q. | Was that the same for the previous 14 years? | 25 | | around 30, but maybe around 25 to 30. |
| | | 5 | | | 6 |
| 1 | Q. | How many team leaders were there in the SSC, say, at the | 1 | | interaction with the testing teams and development to |
| 2 | | first date that I mentioned, 1999/2000? | 2 | | supply evidence and find possible ways to recreate |
| 3 | A. | There was only a manager at that point, no team leaders. | 3 | | defects on test equipment. We also interacted with |
| 4 | Q. | When were team leaders introduced? | 4 | | subpostmasters when gathering evidence or providing |
| 5 | A. | 2010. | 5 | | support. The SSC was not responsible for reporting |
| 6 | Q. | So when you became one? | 6 | | to Post Office." |
| 7 | A. | Yes. So after Mik left 2009, I think we had Tony | 7 | | Who was responsible for reporting to Post Office? |
| 8 | | Little step in for a while and then Steve then took over | 8 | A. | I know that Mik did do monthly reports. |
| 9 | | in 2010, and he introduced the three team leaders. | 9 | Q. | And Mik |
| 10 | Q. | The Steve you refer to there, is that Steve Parker? | 10 | A. | So Mik Peach did monthly reports up to his management. |
| 11 | A. | That's correct. | 11 | | There was also service management |
| 12 | Q. | Who did each of the SSC team leaders report to: to him? | 12 | Q. | Sorry, just stopping there. You say that he, Mik, did |
| 13 | A. | To him. | 13 | | reports up to his management? |
| 14 | Q. | He was the SSC manager; is that right? | 14 | A. | Yes. |
| 15 | A. | Correct. | 15 | Q. | Was that still within Fujitsu or ICL? |
| 16 | Q. | Do you know to whom he reported? | 16 | A. | Within Fujitsu. He also I'm not sure of the date |
| 17 | A. | Not entirely Steve Muchow I'm not sure when Steve | 17 | | totally. He introduced something called the SMP, |
| 18 | | Muchow left. Peter Bird, I'm not sure when Peter Bird | 18 | | service management portal, which he |
| 19 | | left. They were levels above him. I'm not sure, I'm | 19 | Q. | Can you explain what the SMP was? |
| 20 | | afraid. | 20 | A. | So it was a website that Mik introduced and wrote and it |
| 21 | Q. | Okay. Can we look at paragraph 7 of your witness | 21 | | was for him to put reports on and I believe the change |
| 22 | | statement, please, which is at the foot of page 2. You | 22 | | management OCPs were also copied onto there and that was |
| 23 | | say in the second sentence: | 23 | | for Post Office to have visibility of these. |
| 24 | | "The team [that's the SSC] does not support the | 24 | Q. | Did Post Office have direct access to the SMP? |
| 0.5 | | hardware or operating systems. The team had a good | 25 | | Yes. |
| 25 | | hardware or operating systems. The team had a good | 25 | A. | 165. |

2

3

4

5

6

7

8

9

10

15

16

19

1

2

3

4

5

6

7

8

13

1 Q. You were about, in your first answer, to go on to speak 2 about the service management team? 3 A. So, yes, service management was really the interface, 4 I believe, between support issues and Post Office. 5 Q. Just stopping you there, where were they based? 6 A. They were in -- they're Fujitsu. I think they were in 7 Bracknell, as well. And then I was going to talk about 8 the MSU, the management support unit. They did the 9 reconciliation and they reported --10 Q. The reconciliation of what? A. Sorry, if there were any reconciliation incidents, so 11 11 12 they would then report those reconciliation incidents 12 13 back to the Post Office. 13 14 The term I remember currently is BIMs, business 14 15 incident management, but there is also -- reading 16 through PinICLs, some red but I don't know what red 17 represented. 18 18 Q. You say in paragraph 25 of your witness statement: 19 "To the extent that there were any known defects 20 when releases were rolled out, my understanding is that 20 21 21 this would have been communicated to Post Office, either 22 22 by the Service Management team ... or by other ICL ... 23 teams. I was not involved in communications with Post 23 24 24 Office in this regard, neither am I aware of how or if 25 such issues were communicated to subpostmasters." 25 1 nothing more than that. 2 Q. So it's a general understanding that that's what should 3 happen --4 A. Yes. 5 Q. -- between a service provider, Fujitsu, and its client, 6 the Post Office? 7 A. Correct. 8 Q. You haven't got any actual knowledge of whether that did 9 happen? 10 A. I've got no actual knowledge. Q. You see, we have heard some evidence in the Inquiry 11 12 that, because this was a PFI -- Public Finance 13 Initiative -- framework, under which the services were 14 being provided, the Post Office had what was described 14 15 as limited or partial visibility of the design approach, 16 the development approach and defects. Were you aware of 17 that or not? 18 A. Not particularly, no. 19 Q. In relation to the comment in paragraph 47 where you say 20 "I believe that information", that's general issues --20 21 sorry, specific individual incidents, you believe that 21 22 information was passed back through the BSU/MSU or 22 23 service management. 23

Again, what's the belief for that, or the basis for

11

that belief and understanding?

24

25

Later in your statement, in paragraph 47, in relation to the accuracy and integrity of data recorded and processed on the system, you say:

"I cannot comment on how general issues would be relayed to Post Office but, in respect of individual incidents, I believe this information was passed back to the Post Office through the BSU/MSU or Service Management."

What's the basis for those understandings and beliefs that you give?

- A. So the first one was about projects, so when we have new functionality entered into the system, it is normally entered in via project. It is not normal support at that stage and projects have a -- projects are managed and, I believe, they are fed back through the project management chain, that --
- 17 Q. Yes, and what was the basis for that belief?
 - A. I have been involved in some projects.
 - Q. I'm talking about this one.

(Pause)

It is paragraph 25, so when known defects -- when the releases were rolled out your understanding that this would have been communicated to the Post Office. I'm asking you for the basis for that belief, please?

A. Just because projects reported back. Sorry, I've got

- A. So if there was an issue that was a new issue, that would be put into the monthly reporting by the SSC manager and service management were involved in resolution of issues. They were the ones who did the reporting. The BSU is, if it's a reconciliation incident, they would do the reporting.
- Q. Do you know from personal knowledge the extent of the reporting by MSU/BSU?
- A. I'm sure in the court case there was a -- released 9 10 a monthly service management report. I can't remember 11 which incident it referred to, but it had broken down 12 about recent issues.
 - Q. So the court case you're referring to is?
 - A. The GLO, sorry.
- 15 Q. What's your knowledge of the GLO that you're referring 16 to there? Are you referring to the judgment, or --
- 17 A. There was some evidence released as part of the GLO and 18 that included a monthly report from the Fujitsu service 19 management team.
 - Q. So the "evidence", whose evidence are you referring to?
 - A. I couldn't tell you whose evidence it was.
 - Q. I'm just trying to explore where you are getting this knowledge from. Is it as a result of --
- 24 A. Yes, I viewed this document that was part of the 25 released documents part of the GLO.

three levels of support and then that grew to four; is 1 Q. Sorry, I'm just going to press you a little further. 1 2 2 A. Yes, sure. that right? 3 Q. You viewed a document that was included as evidence in 3 A. Yes. 4 4 Q. Was the first line of support the subpostmasters initial the GLO? point of contact --5 5 A. That was released. I was following the GLO case and one A. Yes. 6 of the documents in there was -- that was released as 6 7 part of the evidence was a service management report. 7 Q. -- and, essentially, Fujitsu's gateway to the remainder 8 Q. How were you following the GLO? 8 of the service support? 9 A. We followed the Twitter feed and also there were some 9 A. Yes. 10 solicitors -- we provided some information to the 10 Q. Was that carried out by the Horizon System Helpdesk solicitors. 11 which was later known as the Horizon Service Desk? 11 12 Q. So the thing you're telling us about now is based on 12 13 reading a Tweet about the conduct of the GLO? 13 Q. Would this be a fair summary: it would seek to resolve 14 A. And seeing a document that was from that. 14 basic queries and then pass on those that it couldn't 15 15 rectify to the second line of support? Q. Sorry, and seeing a document? 16 A. There was a document that was released as evidence which 16 A. Yes. 17 was a service management monthly report from Fujitsu to 17 Q. Initially, did the Horizon System Helpdesk people work 18 in Feltham? 18 Post Office. 19 Q. Okay. Can I move on to helpline systems, please, and, 19 Α. Yes. 20 as the first witness who is giving evidence to the 20 Q. Was that where you worked --21 21 Inquiry about support services available to A. Yes. 22 22 subpostmasters, I would like to use you, please, just to Q. -- as part of the SSC? 23 confirm the various levels of ICL and Fujitsu support 23 A. Yes, Feltham A1. 24 24 that were available. Q. I'm sorry? 25 I think it is right that, initially, there were 25 A. Feltham A1. There are multiple Fujitsu buildings in 1 Feltham. 1 Q. The second line of support for software, was that 2 Q. I think you say in your statement that it was in fact in 2 provided by the system management centre, or SMC? 3 3 the same room as you; is that right? 4 A. That's right. there was a custom built room for AGL, 4 Q. Would this be a reasonable description of it: it sought 5 5 which brought the parties together. So in the same room to resolve technical problems itself and acted as 6 we had the HSH, we had us, the SSC, the EDSC, we had the 6 a gatekeeper and filter to the third line of support? 7 7 operations team and we had GiroBank. 8 Q. And how many of them were there, say, at 2009/2008? 8 Q. It was also involved in identifying system events that 9 could indicate a software problem had arisen? A. Just a couple. 9 10 Q. Just two? 10 11 11 **A.** Right at the beginning, 1997 -- 1996 to 1997, only Q. There was also, is this right, another second line of 12 a couple, very, very limited. When we moved into 12 support for hardware, as opposed to software? 13 Bracknell and they moved out, I don't know how many 13 A. Yes. The engineers -- I wasn't very much involved in 14 there were then 14 the engineering. Oh, unless you're talking about the 15 Q. Did they move to Bracknell? 15 ops team -- no, the hardware would be engineering. 16 A. Sorry, they moved to Stevenage. 16 Q. They initially worked in Feltham, is that right, the system management centre? 17 Q. Wasn't that the second line of support that moved to 17 18 Stevenage? 18 A. I don't think they were in place when we were in 19 A. The second line were also in Stevenage. 19 Feltham. 20 Q. So, just to make it clear, first line of support also 20 Q. Okay. So what, they only ever existed in Stevenage? 21 moved to Stevenage; is that --21 A. Correct. 22 A. Correct 22 Q. The third line of support, I think -- is this right --23 Q. When was that? 23 provided by a variety of teams depending on the issue, 24 I'm presuming it was when we also moved out in 1997 but 24 the first of them was you, the system service centre or 25 I would have to ask and check. 25 SSC, and that had, as its focus, investigation and

15

| 1 | | rectification of software problems? | 1 | Α. | Yes. When you say "network", you don't mean physical |
|--|---------------------------|---|---|---|---|
| 2 | Α. | | 2 | | network, you mean as in |
| 3 | Q. | There was the management support team or management | 3 | Q. | |
| 4 | | support unit, MSU. That monitored and managed | 4 | A. | |
| 5 | | reconciliation errors? | 5 | Q. | To provide a centre of technical expertise for customer |
| 6 | A. | Yes. | 6 | | services more generally, providing technical advice, |
| 7 | Q. | A reference data team, were you aware of them? | 7 | | guidance and expertise |
| 8 | A. | I was. They eventually joined into the SSC. | 8 | A. | Yes. |
| 9 | Q. | Did they focus on errors or problems in or with the | 9 | Q. | and to maintain the KEL database? |
| 10 | | reference data upon which Horizon relied? | 10 | A. | Yes, we ran the KEL database. |
| 11 | A. | Yes. | 11 | Q. | Would you agree that the SSC was at the heart of the |
| 12 | Q. | Then operational services division, which I think you | 12 | | support services provided for Horizon? |
| 13 | | called operations, they provided support to network and | 13 | A. | The software support services, yes. |
| 14 | | central system incidents? | 14 | Q. | In particular, it occupied a central position in the |
| 15 | A. | Yes, yes. They looked after the data centres, yes. | 15 | | investigation of bugs, errors and defects? |
| 16 | Q. | Then the fourth line of support involved development | 16 | A. | Yes. |
| 17 | | teams that would make changes to Horizon coding to | 17 | Q. | If you look at page 19 of your witness statement at |
| 18 | | resolve identified errors, bugs and defects; would that | 18 | | paragraph sorry, paragraph 17 of your witness |
| 19 | | be right? | 19 | | statement, on page 7, about six lines in, you say: |
| 20 | A. | Yes. | 20 | | "If first line support could not resolve the issue |
| 21 | Q. | Would you agree that your part of the third line of | 21 | | and it was related to the software, it would be |
| 22 | | support, it's intended purpose and functions were to | 22 | | escalated to the second line support team." |
| 23 | | provide a support service to resolve technical problems | 23 | | Do you see that sentence? |
| 24 | | in the minimum time possible and the minimum disruption | 24 | A. | Yes. |
| 25 | | to the service and to the network? | 25 | Q. | Can you assist us, how would someone in the first line 18 |
| 1 2 | | of support on the end of the phone know that an issue that was being reported to them by a subpostmaster was | 1 2 | Α. | did not? I couldn't tell you what the training of the first line |
| 3 | | or was not related to software? | 3 | | was. |
| 4 | A. | I didn't work in the HSH but I believe they had scripts | 4 | Q. | Were, to your knowledge, subpostmasters told that there |
| 5 | | to follow, which would help them. | 5 | | were three and then four possible lines of support? |
| 6 | Q. | So a postmaster phones up and says "I've got this issue, | 6 | Δ | I don't know what the subpostmasters were told about the |
| 7 | | | • | Α. | Taon t wild what the subpostinusters were told about the |
| 8 | | there's a reconciliation problem", how would the first | 7 | ۸. | support hierarchy. |
| 9 | | there's a reconciliation problem", how would the first line support know that that related to software? | | | |
| • | A. | · | 7 | Q. | support hierarchy. |
| 10 | A. | line support know that that related to software? | 7 8 | Q. | support hierarchy. You don't know what they knew? |
| | A. | line support know that that related to software? As I say, I did not do their role. However, I do | 7 8 9 | Q. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that |
| 10 | | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask | 7 8 9 10 | Q. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. |
| 10 11 | | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. | 7 8 9 10 11 | Q. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. |
| 10 11 12 13 14 | Q. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. | 7 8 9 10 11 12 13 | Q. A. Q. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. |
| 10 11 12 13 14 15 | Q. A. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line | 7 8 9 10 11 12 13 14 | Q. A. Q. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? |
| 10 11 12 13 14 15 | Q. A. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and | 7 8 9 10 11 12 13 | Q. A. Q. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were |
| 10 11 12 13 14 15 | Q. A. Q. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? | 7 8 9 10 11 12 13 14 | Q. A. Q. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third |
| 10 11 12 13 14 15 16 17 | Q. A. Q. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? I presume that they would get to the end of the script | 7 8 9 10 11 12 13 14 15 16 17 | Q. A. Q. A. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third line support would ask could they talk to that person |
| 10 11 12 13 14 15 16 17 18 | Q. A. Q. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? I presume that they would get to the end of the script and it hasn't resolved the issue and then they would | 7 8 9 10 11 12 13 14 15 16 17 18 | Q. A. Q. A. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third line support would ask could they talk to that person again. Yes, so they have had some dealings with them Correct. |
| 10 11 12 13 14 15 16 17 | Q. A. Q. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? I presume that they would get to the end of the script | 7 8 9 10 11 12 13 14 15 16 17 18 | Q. A. Q. A. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third line support would ask could they talk to that person again. Yes, so they have had some dealings with them |
| 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. A. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? I presume that they would get to the end of the script and it hasn't resolved the issue and then they would pass to the second line team. So it must relate to the software? | 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. A. Q. A. | Support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third line support would ask could they talk to that person again. Yes, so they have had some dealings with them Correct they would say "Can I speak to John again please?" Exactly. |
| 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A. Q. A. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? I presume that they would get to the end of the script and it hasn't resolved the issue and then they would pass to the second line team. So it must relate to the software? It must not always relate to the software but, because | 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A. Q. A. Q. | Support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third line support would ask could they talk to that person again. Yes, so they have had some dealings with them Correct they would say "Can I speak to John again please?" Exactly. But they wouldn't know when they're phoning up "I've got |
| 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? I presume that they would get to the end of the script and it hasn't resolved the issue and then they would pass to the second line team. So it must relate to the software? It must not always relate to the software but, because the script will only test so many things | 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. Q. A. Q. | Support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third line support would ask could they talk to that person again. Yes, so they have had some dealings with them Correct they would say "Can I speak to John again please?" Exactly. But they wouldn't know when they're phoning up "I've got a problem with software, I need to speak to John"? |
| 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 | Q. A. Q. A. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? I presume that they would get to the end of the script and it hasn't resolved the issue and then they would pass to the second line team. So it must relate to the software? It must not always relate to the software but, because the script will only test so many things What training did the first line support have to make | 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 | Q. A. Q. A. Q. A. Q. | support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third line support would ask could they talk to that person again. Yes, so they have had some dealings with them Correct they would say "Can I speak to John again please?" Exactly. But they wouldn't know when they're phoning up "I've got a problem with software, I need to speak to John"? No, no idea. |
| 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. | line support know that that related to software? As I say, I did not do their role. However, I do believe they had scripts to follow which they would ask them to check various things throughout the script. I'm going to press you a little bit further because of what you said in your statement. Yes. Having gone through the script, how would the first line support know that the issue related to software and therefore pass it to the second line? I presume that they would get to the end of the script and it hasn't resolved the issue and then they would pass to the second line team. So it must relate to the software? It must not always relate to the software but, because the script will only test so many things | 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. Q. A. Q. | Support hierarchy. You don't know what they knew? I don't know what the subpostmasters knew. I know that quite often one of them would talk to us, but I don't know if they knew what role we were providing. I think they would ask for people by name. The subpostmasters would? Yes. There was definitely some PinICLs were a subpostmaster who has been talking to someone in third line support would ask could they talk to that person again. Yes, so they have had some dealings with them Correct they would say "Can I speak to John again please?" Exactly. But they wouldn't know when they're phoning up "I've got a problem with software, I need to speak to John"? |

2

3

4

10

11

12

13

14

15

16

| 1 | | knowledge, be referred to second line support? |
|----|----|---|
| 2 | A. | I couldn't tell you, but I'm sure from the PowerHelp |
| 3 | | tickets, you could work it out because they've got the |
| 4 | | team transfers in the PowerHelp. I could tell you that |
| 5 | | about 2 per cent of calls came from PowerHelp to PinICL |
| 6 | | and about half of those were raised by subpostmasters, |
| 7 | | so about 1 per cent of calls were raised by |
| 8 | | subpostmasters to the SSC, but I couldn't |
| 9 | Q. | And the other 1 per cent? |
| 10 | Δ | The other one was BSI reconciliation sorry issues |

- 10 **A.** The other one was BSU reconciliation -- sorry, issues passing from other teams, not necessarily the subpostmasters, but SMC or BSU.
- 13 Q. Why were the teams split up?
- 14 A. Why were the HSH and SMC split up or?
- 15 Q. Yes
- 16 A. I presume that the SMC --
- Q. Don't worry about presumptions or speculation; do youknow?
- 19 A. I don't know.
- 20 Q. If you don't know an answer to a question it's best to 21 say it --
- 22 **A.** Okay.
- Q. -- rather than put together maybe fragments of evidenceand to speculate.
- 25 **A.** Okay.

4

5

6

7

8

9

10

11

12

13

18

21

Q. When you say it had been archived away by Riposte, was
 that a function of Riposte that could not be broken into
 or interfered with?

A. Archiving definitely could be changed, yes, and, actually, there were features to turn archiving off if, for example, the system had been off for a long time but, yes, archiving could be changed.

- Q. That's a separate issue, whether archiving could be changed. In respect of data that had been archived, was it impossible to look at it?
- A. It wasn't impossible because it would have gone to audit, but -- yes, so you could have got information from audit.
- Q. You said that it was difficult sometimes because Riposte
 had archived the material. Did you ever -- or were you
 ever a part of a process to obtain material from
 archive, in order properly to investigate an issue?
 - **A.** We definitely made a request to the archive team, yes.
- Q. So that was a theoretical difficulty rather thanan actual one; would that be right?
- A. Yes. Sorry, I was trying to come up with reasons whyyou may not have got to the bottom of a problem.
- Q. Yes, and why were you trying to come up with reasons whyyou might not have got to the bottom of a problem?
- 25 A. Because you were asking about how you may -- the process

23

Q. Were you party to any discussion over whether the support teams should remain together, rather than splitting up into different offices?

- **A.** No.
- Q. Was there, within third line support, ever discussion
 over trends or patterns that emerge from the nature of
 calls that were being received, for example a theme is
 emerging that there are constant problems with
 balancing?
 - A. Definitely would look at trends and investigate things. If you never got quite to the bottom of something, you saw something again, you would continue. You would normally raise a KEL on a topic, and then you would say on there, you know, "If this happens again could you please examine this and this". Sometimes evidence was too old by the time we got there.
- 17 Q. What do you mean by that "sometimes the evidence was too 18 old"?
- 19 **A.** Sometimes the evidence had been archived away.
- 20 Q. Archived by who?
- 21 A. By Riposte.
- 22 Q. What difficulty did that present?
- A. It meant that you could sometimes not get to the bottom of an issue so you would raise a KEL and, if it occurs again, then you know where to look at straight away.

22

- for going around to documenting a trend.

 Q. Yes, and so this is a theoretical obstacle
 - Q. Yes, and so this is a theoretical obstacle that could be overcome?
- 4 A. That one was.
 - Q. If you wanted to get to the bottom?
- A. Yes.

3

5

9

13

14

15

25

Q. What other obstacles would there be in getting to thebottom of a problem?

(Pause)

- 10 A. I'm going to have to look at some PinICLs or KELs and11 come back on that.
- 12 Q. I'm sorry?
 - A. I would look at some PinICLs and KELs and come back to you about reasons why we have raised some to trend analysis, if that's okay.
- Q. Does it follow from the need to carefully think about itthat there's nothing obvious that strikes you --
- 18 **A.** There's nothing obvious, yes.
- Q. -- that prevented, other than the very theoretical thing
 that you have mentioned, in getting to the bottom of
 a problem?
- 22 **A.** Yes.
- SIR WYN WILLIAMS: Mr Beer, could the statement be takendown from my screen?
 - MR BEER: I'm so sorry, sir. Yes, of course.

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

25

1 SIR WYN WILLIAMS: Thank you. 2 MR BEER: Was the main mechanism for picking up themes the 3 use of the KEL system? 4 A. Not particularly. The KEL system was very useful for 5 SMC with eventing. It was useful to see if this issue 6 had occurred before but, generally, if -- things 7 occurred before you tended to know them, so it was a way 8 of say providing advice and guidance on how to deal with 9 something, mainly if you have not seen it very often. 10 Q. What was the mechanism, if any, for picking up themes and trends then, if it wasn't the KEL system? 11 12 A. The KEL system was good because -- sorry, if we had 13 a lot of incidents with the same issues, then if they 14 were actually found to be defects and passed on to 15 fourth line, there would be trends in that because of 16 the number of PinICLs raised and applied to the same 17 products, that you can see in the PinICLs. 18 If the KEL system was good for identifying if

If the KEL system was good for identifying if something had occurred before as well, we did sometimes add onto it "Could you add other PinICL references if this reoccurs", so there was trending in the KEL system as well.

Q. Was there any other system operated, to your knowledge, to pick up themes and trends in the problems with the system that were being reported to Fujitsu? A. Not in the SSC.

Q. In any other part of the service help levels of support to your knowledge?

- A. There were other teams like QFP and --
- Q. What does QFP stand for?
- A. Sorry, quality filtering process -- that would manage incidents to the -- so when we passed a ticket in PinICL to the fourth line people, it would often go through the quality filtering process team, who decide where it was to go to, which area of expertise inside the fourth line support teams, and so there was also analysis of when ticket -- working out the amount of effort a fix may take, that that was all in part of the development and release process.
 - Q. That sounds like it is more about systems control within Fujitsu for the benefit of the efficient operation of the help service within Fujitsu.
 - A. Yes.
 - Q. I'm talking about something that's of benefit perhaps to the Post Office or to subpostmasters, ie something within Fujitsu where repeated errors, bugs or defects, or even repeated calls about the same system issue, for example balancing, were picked up to say "Look, we've got a trend developing here, we need to undertake a root cause analysis", or something like that?

2

- A. There was nothing automated that I know of.
 - Q. What about people?

19

20

21

22

23

24

25

2

6

7

11

15

16

18

19

20

21

22

23

24

25

- A. Yes, I mean, there were people in the support teamsand --
- 5 Q. Which part of the support teams?
 - A. Sorry, there was nothing in the SSC that I know of that was --
- 8 Q. Had that function?
- A. -- dedicated to do that function. There was customer
 service and service management teams that --
 - Q. What level of the four were they?
- A. They weren't support teams, sorry, they were the people
 that I said would report to Post Office the major
 incidents, and things like that.
 - Q. How would they get to know about any trends or themes that were developing?
- 17 **A.** Only if they would be reported up so --
 - Q. By?
 - **A.** By, I would say, the helpdesk, or the SMC, or us, the SSC, through management.
 - Q. Did you do that? Did you take a step back? Rather than dealing with the next ticket on the line, did anyone in your team take a step back and say "There's a theme developing here, there's an underlying issue, we need to make a reference"?

- A. I can't give you any examples of that.
- Q. Can I turn to the Riposte product, please. At page 15, paragraph 48 of your statement, at the foot of the page, you say:

"In terms of deficiencies during this time, there were a number of difficulties arising from the Riposte product. These included malformed messages ... and replication issues."

What were the difficulties arising from the Riposte product?

- A. So the malformed messages is when a message is missing attributes, so Mr Cipione broke down what a message attribute -- Riposte message looks like, and it has different attributes in it, and we used to use a system called a TIP repair tool when these messages were harvested into the TPS system, and some of these attributes were missing. Then we would have to go and look and see where -- what was happening on the counter when that message was written to identify what the missing attributes were.
- 21 Q. What was the cause of the malformed messages?
- A. I don't know what the underlying root cause of thatproblem was.
- 24 Q. Was that ever investigated?
 - A. I'm sure it was.

3

4

5 6

7

8

9 10

11

12 13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

9

10 11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

subpostmasters for those.

If it was the hardware ones, I don't know. But,

32

again, that wouldn't have caused the receipts and

| 1 | Q. | By who? |
|--|-----------------------|--|
| 2 | A. | It would have been fourth line support talking to |
| 3 | | Escher. |
| 4 | Q. | Was the cause of the difficulties the coding? |
| 5 | A. | I don't know what the root cause was. |
| 6 | Q. | Were you ever told back down the line what the root |
| 7 | | cause was? |
| 8 | A. | Sometimes if you had a ticket and it was being |
| 9 | | investigated by fourth line support, you would hold on |
| 10 | | to a ticket to find out what the root cause was. |
| 11 | Q. | You tell us in your statement that malformed messages |
| 12 | | could potentially result in a receipts and payments |
| 13 | | mismatch but this would unlikely have caused the |
| 14 | | discrepancy, ie a loss or a gain. How would |
| 15 | | a receipt a mismatch problem or issue, manifest |
| 16 | | itself to the subpostmaster? |
| 17 | Α. | They were informed by a message saying that there had |
| 18 | | been a receipts and payments mismatch and it would be |
| 19 | | when they produced the cash account, the final cash |
| 20 | | account, I believe. |
| 21 | Q. | |
| 22 | | discrepancy then? |
| 23 | Α. | The discrepancy it could affect the primary mappings, |
| 24 | | so the |
| 25 | Q. | Sorry, the primary? |
| | Ψ. | 29 |
| | | |
| | | |
| 4 | | |
| 1 | | this message" |
| 2 | A . | I don't know what they were |
| 2 3 | A . Q. | I don't know what they were "don't worry, it's not you, you haven't done anything |
| 2 3 4 | Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? |
| 2 3 4 5 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. |
| 2 3 4 5 6 | Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact |
| 2 3 4 5 6 7 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: |
| 2 3 4 5 6 7 8 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication |
| 2 3 4 5 6 7 8 9 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network |
| 2 3 4 5 6 7 8 9 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware |
| 2 3 4 5 6 7 8 9 10 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." |
| 2 3 4 5 6 7 8 9 10 11 12 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults |
| 2 3 4 5 6 7 8 9 10 11 12 13 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 | Q. A . | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told about this? They get the message that you have spoken |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told about this? They get the message that you have spoken about saying that there is a discrepancy, a mismatch; |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told about this? They get the message that you have spoken about saying that there is a discrepancy, a mismatch; what were they told about the cause of the mismatch if |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told about this? They get the message that you have spoken about saying that there is a discrepancy, a mismatch; what were they told about the cause of the mismatch if it was attributable to one of these things? |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told about this? They get the message that you have spoken about saying that there is a discrepancy, a mismatch; what were they told about the cause of the mismatch if it was attributable to one of these things? The replication is different to the corrupt primary |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told about this? They get the message that you have spoken about saying that there is a discrepancy, a mismatch; what were they told about the cause of the mismatch if it was attributable to one of these things? The replication is different to the corrupt primary Malformed message, yes. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told about this? They get the message that you have spoken about saying that there is a discrepancy, a mismatch; what were they told about the cause of the mismatch if it was attributable to one of these things? The replication is different to the corrupt primary Malformed message, yes. Yes, but the replication would normally be presented to |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A. Q. | I don't know what they were "don't worry, it's not you, you haven't done anything wrong, we believe it's caused by a malformed message"? I don't know what the subpostmasters were told. You refer in paragraph 51 of your statement to the fact that: "There could be many root causes for replication failures between counters. This could include network cable faults, hub faults for large branches, hardware faults and issues with Riposte." Can you expand on which of those potential faults were, in your experience, real faults that actually happened in practice? I think they all happened in practice. Again, to your knowledge, what were subpostmasters told about this? They get the message that you have spoken about saying that there is a discrepancy, a mismatch; what were they told about the cause of the mismatch if it was attributable to one of these things? The replication is different to the corrupt primary Malformed message, yes. |

By who?

A. Primary mappings, sorry. Q. Can you explain what that is, please? A. So each transaction is added into the cash account using primary mappings. It's like a tree and it builds up and searches for all those transactions that meet that primary mapping, and they are added together to complete that node, and it is all added up together and, if that primary mapping was missing or malformed, then it wouldn't get put into the right place as it builds up the cash account. Q. To your knowledge, was the root cause of those problems fixed? A. I don't know. Q. Do you know what subpostmasters were told when it was suspected that there was a discrepancy caused by a malformed message? A. They would have had the message on screen saying there was a receipts and payments mismatch and then it would have been investigated. There was an event written, I believe, as well, so -- and also harvesting at the TPS database would identify it. So they would -- they could raise a call but, also, we would get the ticket from the MSU/BSU. Q. I'm talking about what the subpostmaster was told themselves, "Look, there's a discrepancy, you've got missing some transactions because they did them on counter 2 and they ran a report on counter 1. Q. Again, can you help us with what they were told about those? A. Again, no, I can't tell you. Q. Is that because it was somebody else's responsibility to tell them? A. It would have come in from the HSH. Q. You said it would have come in from the --A. When they contact the HSH to report the issue. Q. But they don't know, the subpostmaster, whether this was a hardware fault, they don't know whether it's an issue with Riposte, they don't know whether any of the range of things that you mentioned is a cause of the replication error; all they know is the error message that they're getting. So what process was there to feedback to them, "Look, you haven't done anything wrong, you haven't stolen thousands of pounds here, it's a problem with our system"? A. So if the -- if it was the Riposte one then it wrote an event which was picked up by the SMC and they raised a call and they were contacted -- they contacted the

| 1 | | payments mismatch. | 1 | | fixes to them in the system. You're not aware of, kind |
|--|----------------------------|---|--|----------------------|--|
| 2 | 0 | Sorry? | 2 | | of, that process? |
| 3 | | Again, it was about replication, not corrupted notes. | 3 | A. | |
| 4 | | Yes, for the subpostmaster it may not matter | 4 | | Can I turn to a different issue then, please. For how |
| 5 | α. | particularly, other than to know that it wasn't an error | 5 | ۵. | long have you known Anne Chambers? |
| 6 | | of their own. | 6 | A. | |
| 7 | Δ | Yes. | 7 | ۸. | you how long, but it was many years, more than |
| 8 | Q. | But you can't help us as to who was responsible for | 8 | | ten years. |
| 9 | Q. | feeding that back to subpostmasters? | 9 | 0 | What was her function in the SSC? |
| 10 | Δ | I can't. | 10 | A. | |
| 11 | Q. | No, thank you. | 11 | ۸. | in particular. |
| 12 | Q. | In paragraph 58 of your statement, you say: | 12 | Q. | |
| 13 | | "I am not aware of any practices or procedures that | 13 | A. | Not from the start but she was there a long time. |
| 14 | | may have been in place to obtain input or feedback from | 14 | Q. | How closely did you work with her? |
| 15 | | subpostmasters during the pilot and rollout of Horizon." | 15 | Α . | Very closely. |
| 16 | | Is that because this was a different area of | 16 | Q. | |
| 17 | | business from you or is it because it didn't happen? | 17 | Q. | basis? |
| 18 | ٨ | I couldn't tell you because it was a different area from | 18 | ۸ | Yes. |
| 19 | A. | • | 19 | _ | |
| 20 | | me. If they contacted if a ticket was raised and | 20 | Q. | How close did you sit from her, physically? |
| | | came to us, we would talk to the subpostmasters relating | | Α. | A couple of desks away. It was a strange arrangement of |
| 21 | 0 | to that ticket. | 21 | 0 | desks. |
| 22 | Q. | This is a slightly different issue. This is during | 22 | Q. | What was her role and function when you worked alongside |
| 23 | | pilot and rollout. Were there any problems that were | 23 | | her? |
| 24 | | being experienced by subpostmasters, whether there was | 24 | Α. | · |
| 25 | | a mechanism to capture those and to incorporate any 33 | 25 | Q. | And I think you said specialised in the counters? 34 |
| | | | | | |
| | | | | | |
| 1 | Α. | Yes, her area of expertise was in the counters. | 1 | Α. | I don't know about that conversation |
| 1 2 | A . | Yes, her area of expertise was in the counters. | 1 2 | _ | I don't know about that conversation. Was there a conversation between you and Anne, or you |
| 2 | Q. | Just explain what specialism in the counters means? | 2 | A. Q. | Was there a conversation between you and Anne, or you |
| 2 | Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had | 2 | _ | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the |
| 2 3 4 | Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse | 2 3 4 | _ | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be |
| 2 3 4 5 | Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on | 2 3 4 5 | Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? |
| 2 3 4 | Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, | 2 3 4 5 6 | Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were |
| 2 3 4 5 6 7 | Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise | 2 3 4 5 6 7 | Q. A . | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. |
| 2 3 4 5 6 7 8 | Q. A . | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. | 2 3 4 5 6 7 8 | Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were |
| 2 3 4 5 6 7 8 9 | Q. A . | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence | 2 3 4 5 6 7 8 9 | Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? |
| 2 3 4 5 6 7 8 9 | Q. A . Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? | 2 3 4 5 6 7 8 9 | Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were |
| 2 3 4 5 6 7 8 9 10 | Q. A . Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. | 2 3 4 5 6 7 8 9 10 | Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not |
| 2 3 4 5 6 7 8 9 10 11 | Q. A. Q. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? | 2 3 4 5 6 7 8 9 10 11 | Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that |
| 2 3 4 5 6 7 8 9 10 11 12 13 | Q. A. Q. A. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. | 2 3 4 5 6 7 8 9 10 11 12 13 | Q. A. A. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 | Q. A. Q. A. Q. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? | 2 3 4 5 6 7 8 9 10 11 12 13 | Q. A. Q. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | Q. A. Q. A. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that | 2 3 4 5 6 7 8 9 10 11 12 13 14 | Q. A. Q. A. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | Q. A. Q. A. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | Q. A. Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | Q. A. Q. A. Q. A. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy? | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | Q. A. Q. A. Q. A. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | Q. A. Q. A. Q. A. Q. A. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. She was unhappy? Yes. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | Q. A. Q. A. Q. A. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. After she gave evidence, was there any discussion about |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 | Q. A. Q. A. Q. A. Q. A. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. She was unhappy? Yes. This was before she had actually given evidence; is that | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | Q. A. Q. A. Q. A. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. After she gave evidence, was there any discussion about the appropriateness of her doing so or her suitability |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | Q. A. Q. A. Q. A. Q. A. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. She was unhappy? Yes. This was before she had actually given evidence; is that right? | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | Q. A. Q. A. Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. After she gave evidence, was there any discussion about the appropriateness of her doing so or her suitability as a witness? |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. A. Q. A. Q. A. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. She was unhappy? Yes. This was before she had actually given evidence; is that right? Correct. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. A. Q. A. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. After she gave evidence, was there any discussion about the appropriateness of her doing so or her suitability as a witness? I don't know if there was anything about her suitability |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A. Q. A. Q. A. Q. A. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. She was unhappy? Yes. This was before she had actually given evidence; is that right? Correct. Can you remember whether there was discussion before she | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A. Q. A. Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. After she gave evidence, was there any discussion about the appropriateness of her doing so or her suitability as a witness? I don't know if there was anything about her suitability but I know that she fed back to the SSC manager that she |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. Q. A. Q. A. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. She was unhappy? Yes. This was before she had actually given evidence; is that right? Correct. Can you remember whether there was discussion before she gave evidence about her suitability as a witness or the | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. After she gave evidence, was there any discussion about the appropriateness of her doing so or her suitability as a witness? I don't know if there was anything about her suitability but I know that she fed back to the SSC manager that she didn't find it at all nice and we I do not believe |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 | Q. A. Q. A. Q. A. Q. A. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. She was unhappy? Yes. This was before she had actually given evidence; is that right? Correct. Can you remember whether there was discussion before she gave evidence about her suitability as a witness or the appropriateness of a member of the SSC going along to | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 | Q. A. Q. A. Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. After she gave evidence, was there any discussion about the appropriateness of her doing so or her suitability as a witness? I don't know if there was anything about her suitability but I know that she fed back to the SSC manager that she didn't find it at all nice and we I do not believe that I believe the SSC manager then pushed back to |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. Q. A. Q. A. Q. | Just explain what specialism in the counters means? So when a ticket comes into the SSC, we had a pre-scanner and the pre-scanner's role was to analyse the ticket, check it had all the information expected on it and then route it to a member of the team in the SSC, based on their workload and their areas of expertise and, as I say, she worked on the counter tickets. Did you become aware of her being asked to give evidence in a court case? Yes, we were. You say "we were"? Yes, the SSC as a whole were aware of this. Can you remember when that was? I can't remember the exact date, but I do remember that Anne was unhappy to be asked. She was unhappy? Yes. This was before she had actually given evidence; is that right? Correct. Can you remember whether there was discussion before she gave evidence about her suitability as a witness or the | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. Q. A. Q. | Was there a conversation between you and Anne, or you and other members of the SSC and Anne, about the appropriateness or suitability of her going along to be a witness? There was conversations about whether SSC people were the right people to be used. Why was there a question over whether SSC people were the right people to be used? I think we thought it was more because we were very technically specialists in that area and not expert witnesses, we were very unhappy about that process. Was Anne Chambers very unhappy about the process? I believe she was. Did she say that to you? I cannot recall the conversation, but I believe she was. After she gave evidence, was there any discussion about the appropriateness of her doing so or her suitability as a witness? I don't know if there was anything about her suitability but I know that she fed back to the SSC manager that she didn't find it at all nice and we I do not believe |

| 1 | Q. | The SSC manager that she spoke to was? | 1 | Q. | At what level was her unhappiness at being asked to give |
|--|--------------------------------------|--|--|-----------------------|---|
| 2 | A. | Mik Peach. | 2 | | evidence and then, after she had done so, expressing her |
| 3 | Q. | You said that the SSC manager, words to the effect of, | 3 | | unhappiness about having done so? |
| 4 | | ensured that it never happened again. Who did Mik Peach | 4 | Α. | On a scale of |
| 5 | | take that up with to your knowledge? | 5 | Q. | Yes, of mildly fed up at the bottom end, to incandescent |
| 6 | A. | I don't know. | 6 | | with rage at the top end, say? |
| 7 | Q. | What was the issue with her giving evidence then? What | 7 | A. | |
| 8 | | was the problem about it? | 8 | | how unpleasant it was and she did not want to do it |
| 9 | Δ | We just weren't expert witnesses. It was a it did | 9 | | again. |
| 10 | Α. | not feel right. | 10 | 0 | For how long have you known Gareth Jenkins? |
| 11 | 0 | Do you know why she did it? | 11 | | Gareth, I think, was there from the beginning. I recall |
| 12 | | I believe that she was manoeuvred into it. I don't know | 12 | Α. | seeing him in Feltham, so it would have been from |
| 13 | Λ. | if she really wanted to do it. She had dealt with the | 13 | | probably 1996. |
| | | • | | 0 | |
| 14 | 0 | case, I believe. | 14 | _ | How closely did you work with Mr Jenkins? |
| 15 | | Who was she manoeuvred by? | 15 | Α. | • |
| 16 | _ | I don't know. | 16 | | line and so the development and architecture, and he |
| 17 | Q. | On what basis do you say that she was manoeuvred? | 17 | | was a specialist in the Riposte area, so if we had some |
| 18 | Α. | I don't think she would have wanted to do it otherwise. | 18 | | issues in that area we would talk to him. He was |
| 19 | Q. | Who are the candidates for manoeuvring her into doing | 19 | | approachable. |
| 20 | | it? | 20 | Q. | How frequent was your contact with him? |
| 21 | | I don't know. | 21 | Α. | Maybe monthly. |
| 22 | Q. | Can you help us? | 22 | Q. | Would that be face-to-face or via emails? |
| 23 | A. | I would talk to about the security teams maybe, who | 23 | A. | Normally emails or PinICLs. |
| 24 | | would have interfaced with the request for that. | 24 | Q. | Did you have meetings with him? |
| 25 | | I don't know. | 25 | A. | I have definitely been in meetings with him. I think |
| | | 37 | | | 38 |
| | | | | | |
| | | | | | |
| 1 | | one of my witness ones is meeting with him. | 1 | | article? |
| 1 2 | Q. | one of my witness ones is meeting with him. To your knowledge, what was his function? | 1 2 | Α. | article? 2009, when I have watched some previous articles in |
| | | | | A. | 2009, when I have watched some previous articles in |
| 2 | | To your knowledge, what was his function? He was either chief technical or he was one of the | 2 | | |
| 2 | | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the | 2 | | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of |
| 2 3 4 5 | A. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. | 2 3 4 5 | | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the |
| 2 3 4 5 6 | A. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability | 2 3 4 5 6 | Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? |
| 2 3 4 5 6 7 | A. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to | 2 3 4 5 6 7 | Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. |
| 2 3 4 5 6 7 8 | A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? | 2 3 4 5 6 7 8 | Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that |
| 2 3 4 5 6 7 8 9 | A . Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. | 2 3 4 5 6 7 8 9 | Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or |
| 2 3 4 5 6 7 8 9 | A . Q. A . Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event | 2 3 4 5 6 7 8 9 | Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't |
| 2 3 4 5 6 7 8 9 10 | A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes. | 2 3 4 5 6 7 8 9 10 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? |
| 2 3 4 5 6 7 8 9 10 11 | A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes when you saw that issue emerge in the course of the | 2 3 4 5 6 7 8 9 10 11 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not |
| 2 3 4 5 6 7 8 9 10 11 12 13 | A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes. when you saw that issue emerge in the course of the Group Litigation? | 2 3 4 5 6 7 8 9 10 11 12 | Q. A. Q. A. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 | A. Q. A. Q. A. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes. when you saw that issue emerge in the course of the Group Litigation? Yes. | 2 3 4 5 6 7 8 9 10 11 12 13 | Q. A. Q. A. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | A. Q. A. Q. A. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes. when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are | 2 3 4 5 6 7 8 9 10 11 12 13 14 | Q. A. Q. A. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | A. Q. A. Q. A. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | Q. A. Q. A. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | A. Q. A. Q. A. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes. when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness to give evidence, either in written form or orally, in | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come up on the screen for you. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | A. Q. A. Q. A. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes. when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness to give evidence, either in written form or orally, in criminal proceedings against subpostmasters for theft or | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come up on the screen for you. Thank you. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 | A. Q. A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes. when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness to give evidence, either in written form or orally, in criminal proceedings against subpostmasters for theft or false accounting? | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come up on the screen for you. Thank you. Can we look at page 4, first, please. At the foot of |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | A. Q. A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness to give evidence, either in written form or orally, in criminal proceedings against subpostmasters for theft or false accounting? Not that I'm aware of. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come up on the screen for you. Thank you. Can we look at page 4, first, please. At the foot of the page this is an email of 13 May 2014, from Sean |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | A. Q. A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness to give evidence, either in written form or orally, in criminal proceedings against subpostmasters for theft or false accounting? Not that I'm aware of. We are aware of an article in Computer Weekly, a trade | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come up on the screen for you. Thank you. Can we look at page 4, first, please. At the foot of the page this is an email of 13 May 2014, from Sean Hodgkinson. If we just look at the bottom of the next |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | A. Q. A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness to give evidence, either in written form or orally, in criminal proceedings against subpostmasters for theft or false accounting? Not that I'm aware of. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come up on the screen for you. Thank you. Can we look at page 4, first, please. At the foot of the page this is an email of 13 May 2014, from Sean |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | A. Q. A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness to give evidence, either in written form or orally, in criminal proceedings against subpostmasters for theft or false accounting? Not that I'm aware of. We are aware of an article in Computer Weekly, a trade | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come up on the screen for you. Thank you. Can we look at page 4, first, please. At the foot of the page this is an email of 13 May 2014, from Sean Hodgkinson. If we just look at the bottom of the next |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | A. Q. A. Q. A. Q. | To your knowledge, what was his function? He was either chief technical or he was one of the technical chief technical people, architects, for the Riposte area and, later on, he was also in HNG-X. Were you aware of any discussion about the suitability of him or the appropriateness of him as a witness to give evidence? Not until the GLO. So after the event Yes when you saw that issue emerge in the course of the Group Litigation? Yes. Was there any contemporaneous discussion that you are aware of as to the selection of an appropriate witness to give evidence, either in written form or orally, in criminal proceedings against subpostmasters for theft or false accounting? Not that I'm aware of. We are aware of an article in Computer Weekly, a trade journal, of 11 May 2009. Can you remember when you | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A. Q. A. Q. | 2009, when I have watched some previous articles in on the online Computer Weekly about things. Does it follow that the Computer Weekly article of May 2009 wasn't discussed in the office at about the time that it came out? I don't recall that. When you say you don't recall it, that could mean that it may have happened but you may have forgotten, or "I don't recall it because it is likely that it didn't happen"? I don't recall it. It could have happened but I do not recall a conversation about it. Can I turn to a separate issue, please, the issue of remote access. Could we look, please, at POL00030029. It will come up on the screen for you. Thank you. Can we look at page 4, first, please. At the foot of the page this is an email of 13 May 2014, from Sean Hodgkinson. If we just look at the bottom of the next page, please, to see who he was: senior consultant in |

| of 13 May 2014 is to a range of people. You are not included on this chain but, as we will see in a moment, a buy on the passwring the questions in this chain. Do you remember? A I do, from reading. Yes. I just want to see what the questions were first and this is to a collection of people, I think and this is the database. SSC will not have any privilege update or delete records in the database. Any the SSC to BRDB." BRDB? It realion to the Branch Database, I had a couple of 12 A. Branch database. If not, please could you direct me toward somebody who 14 in relation to the Tranch database. If not, please could you direct me toward somebody who 14 in relation to the accordance of the acc | s a result of ables in s to writes by ting ng of write all t have |
|--|---|
| you end up answering the questions in this chain. Do you remember? 5 Over the page, please: 6 A. I do, from reading. 6 A. I do, from reading. 7 Q. Yes. I just want to see what the questions were first 8 and this is to a collection of people, I think 8 the database. SSC will not have any privilege 9 substantially within the Post Office: 9 update or delete records in the database. An the SSC of BRDB" 11 "Following review of the technical design document 11 BRDB? 12 in relation to the Branch Database, I had a couple of 12 A. Branch database. 13 queries that I was hoping you may be able to help with. 13 Q. " must be audited. The mechanism for inse 14 If not, please could you direct me toward somebody who 15 may be able to assist: 15 that action performed must be atomic." 16 "1) Balancing Transactions. 16 What do you understand that to mean? 17 "Section 5.6.2" 17 A. So "atomic" is a database terminology, so you 18 Do you know what that is of? 18 Do you know what that is of? 19 A. No. 20 Q. " describes back end database amendment process which 21 is included by design" 22 Then he quotes from the document "Inserting 23 Balancing Transactions": 24 "There is a requirement that the SSC will have 25 ability to insert balancing transactions into the 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 42 Can you help us with what Linux was please? 43 "A simple low-cost solution for the tool is to 44 provide a Linux shell based utility" 45 Can you help us with what Linux was please? 46 A. It's an operating system that they have used on well, 50 Can you explain what that its, please? 51 Can you explain what that its, please? 52 Can you explain what that its, please? 53 Can you explain what | ables in s to writes by ting ng of write all t have |
| 5 Your remember? | s to writes by ting ng of write all t have |
| 6 A. I do, from reading. Q. Yes. I just want to see what the questions were first and this is to a collection of people, I think 8 the database. SSC will have privileges of only inserting 9 substantially within the Post Office: 9 update or delete records in the database. Any 10 "All, 11 "Following review of the technical design document 11 BRDB? 12 in relation to the Branch Database, I had a couple of 13 queries that I was hoping you may be able to help with. 14 If not, please could you direct me toward somebody who 15 may be able to assist: 16 "1) Balancing Transactions. 16 What do you understand that to mean? 7 "Section 5.6.2" 17 A. So "atomic" is a database terminology, so you 18 Do you know what that is of? 18 the transactions or they all roll back. You don 19 partial transactions written. 20 Q. " describes back end database amendment process which 10 is included by design" 21 Then he quotes from the document "Inserting 22 What do you understand that sentence to 23 Balancing Transactions": 24 There is a requirement that the SSC will have 25 Balancing Transactions into the 26 A No idea. 1 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 then the reference is given. 42 If we can go back, please, to page 4, we changes. 43 Pass population to pass the within, to your knowledge? 44 A. I don't know. 54 O. " which calls a PL/SQL package" 45 O. So this is still within the Post Office at the more and he says: 46 O. " which calls a PL/SQL package" 87 O. So this is still within the Post Office at the more and he says: 48 and he says: 49 Can you explain what that is, please? | s to writes by ting ng of write all t have |
| 7 Q. Yes. I just want to see what the questions were first and this is to a collection of people, I think 8 the database. SSC will not have any privilege 9 substantially within the Post Office: 9 update or delete records in the database. Am 10 the SSC to BRDB" 10 "All, 10 the SSC to BRDB" 11 "Following review of the technical design document 11 BRDB? 12 in relation to the Branch Database, I had a couple of 12 A. Branch database. 13 queries that I was hoping you may be able to help with. 13 Q. " must be audited. The mechanism for inse 14 If not, please could you direct me toward somebody who 14 a correction record must ensure that the audit 15 may be able to assist: 15 that action performed must be atomic." What do you understand that to mean? 17 A. So "atomic" is a database terminology, so you 18 Do you know what that is of? 18 the transactions or they all roll back. You don 19 partial transactions written. 19 A. No. 19 partial transactions written. 20 Q. " describes back end database amendment process which 20 Q. "There also needs a level of obfuscation to end the dudy of the document "Inserting 22 What do you understand that sentence to 15 is included by design" 21 What do you understand that sentence to 16 is included by design" 22 What do you understand that sentence to 17 then equotes from the document "Inserting 22 What do you understand that sentence to 23 Balancing Transactions": 23 A. No idea. 3 No idea. 41 There is a requirement that the SSC will have 24 Q. "The above-mentioned requirements suggest a a need for a correction tool to be delivered where 42 and 42 The part of the 42 Secondary of the 42 Secondar | s to writes by ting ng of write all t have |
| 7 Q. Yes. I just want to see what the questions were first and this is to a collection of people, I think 8 the database. SSC will not have any privilege 9 substantially within the Post Office: 9 update or delete records in the database. Am 10 the SSC to BRDB" 10 "All, 10 the SSC to BRDB" 11 "Following review of the technical design document 11 BRDB? 12 in relation to the Branch Database, I had a couple of 12 A. Branch database. 13 queries that I was hoping you may be able to help with. 13 Q. " must be audited. The mechanism for inse 14 If not, please could you direct me toward somebody who 14 a correction record must ensure that the audit 15 may be able to assist: 15 that action performed must be atomic." What do you understand that to mean? 17 A. So "atomic" is a database terminology, so you 18 Do you know what that is of? 18 the transactions or they all roll back. You don 19 partial transactions written. 19 A. No. 19 partial transactions written. 20 Q. " describes back end database amendment process which 20 Q. "There also needs a level of obfuscation to end the dudy of the document "Inserting 22 What do you understand that sentence to 15 is included by design" 21 What do you understand that sentence to 16 is included by design" 22 What do you understand that sentence to 17 then equotes from the document "Inserting 22 What do you understand that sentence to 23 Balancing Transactions": 23 A. No idea. 3 No idea. 41 There is a requirement that the SSC will have 24 Q. "The above-mentioned requirements suggest a a need for a correction tool to be delivered where 42 and 42 The part of the 42 Secondary of the 42 Secondar | s to writes by ting ng of write all t have |
| and this is to a collection of people, I think substantially within the Post Office: "All, "Following review of the technical design document in relation to the Branch Database, I had a couple of queries that I was hoping you may be able to help with. If not, please could you direct me toward somebody who If not, please could you direct me toward somebody who If not please direct me direct me direct me toward somebody who If not please direct me direct me toward somebody If not please direct me toward somebody If not please direct me toward somebody If not | s to writes by ting ng of write all t have |
| substantially within the Post Office: "All, "Following review of the technical design document in relation to the Branch Database, I had a couple of in relation to the Branch Database, I had a couple of queries that I was hoping you may be able to help with. If not, please could you direct me toward somebody who If not, please could you direct me toward somebody who If may be able to assist: If may be able to assist: If may be able to assist: If what do you understand that to mean? If a so "atomic" is a database terminology, so you If a Do you know what that is of? If a No. If measting a database terminology, so you If a No. If measting a database amendment process which If is included by design" If he quotes from the document "Inserting If a so "There is a requirement that the SSC will have If what do you understand that sentence to If what do you understand that to mean? If a No idea. If we can go back, please, to page 4, we to If we can go back, please, to page 4, we | writes by ting ng of write all t have |
| 10 "All, "Following review of the technical design document 11 BRD8? 12 in relation to the Branch Database, I had a couple of 12 A. Branch database. 13 queries that I was hoping you may be able to help with. 13 Q. " must be audited. The mechanism for inse if not, please could you direct me toward somebody who 14 a correction record must ensure that the audit that action performed must be atomic." 15 may be able to assist: 15 that action performed must be atomic." 16 "1) Balancing Transactions. 16 What do you understand that to mean? So "atomic" is a database terminology, so you the transactions or they all roll back. You don partial transactions written. 19 Do you know what that is of? 18 the transactions or they all roll back. You don partial transactions written. 20 Q. " describes back end database amendment process which 20 Q. "There also needs a level of obfuscation to end is included by design" 21 the audit mechanism is robust." 22 What do you understand that sentence to the all roll back. So will have 24 Q. "There is a requirement that the SSC will have 24 Q. "The above-mentioned requirements suggest ability to insert balancing transactions into the 41 then the reference is given. 10 performs the correction, audits it and saves both 1 then the reference is given. 25 The above-mentioned requirements suggest and a need for a correction tool to be delivered where 25 the provide a Linux shell based utility" 25 Security assurance manager. What part of the Can you help us with what Linux was please? 26 Office was that within, to your knowledge? 27 The particle of the provide a Linux shell based utility" 4 Security assurance manager. What part of the Can you help us with what Linux was please? 5 Office was that within, to your knowledge? 28 Office was that within, to your knowledge? 30 The parch database. 30 The parch database. 31 The parch database. 32 The parch database. 32 The parch database. 33 The parch database. 34 The parch database. 35 The parch database. 36 The parch database. 36 T | ting ng of write all t have |
| 11 "Following review of the technical design document 12 in relation to the Branch Database, I had a couple of 13 queries that I was hoping you may be able to help with. 14 If not, please could you direct me toward somebody who 15 may be able to assist: 16 "1) Balancing Transactions. 17 "Section 5.6.2" 18 Do you know what that is of? 18 Do you know what that is of? 19 A. No. 20 " describes back end database amendment process which is included by design" 21 There he quotes from the document "Inserting 22 What do you understand that sentence to ability to insert balancing transactions into the 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 25 provide a Linux shell based utility" 22 performs the correction, audits it and saves both 26 provide a Linux shell based utility" 23 Li san operating system that they have used on well, on the branch database. 24 Can you help us with what Linux was please? 25 Can you explain what that is, please? 26 A. It don't know. 27 Can you explain what that is, please? 38 Q. " which calls a PL/SQL package" 39 Can you explain what that is, please? 40 PROPERTY A. BRADE? 41 BRDB? 42 Branch database. 41 Branch database. 42 C. "The above-mentioned requirements suggest a need for a correction tool to be delivered when the correction and they are the security assurance manager. What part of the correction on the branch database. 40 C. " which calls a PL/SQL package" 41 Lon't know. 52 Can you explain what that is, please? 53 Can you explain what that is, please? 64 Can you explain what that is, please? 65 Can you explain what that is, please? 77 Q. So this is still within the Post Office at the more and the contraction of the branch database. 53 Can you explain what that is, please? 54 Can you explain what that is, please? 55 Can you explain what that is, please? 66 Can you explain what that is, please? 79 Can you explain what that is, please? 70 Can you explain what that is, please? 71 Can you explain | ng of write all t have |
| in relation to the Branch Database, I had a couple of queries that I was hoping you may be able to help with. If not, please could you direct me toward somebody who I4 a correction record must ensure that the audit may be able to assist: I5 that action performed must be atomic." What do you understand that to mean? What do you understand that to mean? So "atomic" is a database terminology, so you be pour know what that is of? I8 the transactions or they all roll back. You don partial transactions or they all roll back. You don parti | ng of write all t have |
| queries that I was hoping you may be able to help with. If not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you direct me toward somebody who if not, please could you understand that the mean? A. No atomic is a database terminology, so you the transactions or they all roll back. You don partial transactions or they all roll | ng of write all t have |
| If not, please could you direct me toward somebody who may be able to assist: 15 that action performed must be atomic." 16 "1) Balancing Transactions. 16 What do you understand that to mean? 17 "Section 5.6.2" 18 the transactions or they all roll back. You don partial transactions written. 20 Q. " describes back end database amendment process which is included by design" 21 the audit mechanism is robust." 22 Then he quotes from the document "Inserting 23 Balancing Transactions": 24 "There is a requirement that the SSC will have 25 ability to insert balancing transactions into the 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 performs the correction to the tool is to 4 provide a Linux shell based utility" 5 Can you help us with what Linux was please? 6 A. It an operating system that the system on the branch database. 7 Q. So this is still within the Post Office at the mor and he says: 9 Can you explain what that is, please? 9 " I believe the only way we will be able to | ng of write all t have |
| may be able to assist: 15 that action performed must be atomic." 16 "1) Balancing Transactions. 16 What do you understand that to mean? 17 A. So "atomic" is a database terminology, so you the transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don partial transactions or they all roll back. You don the audit mechanism is robust." 10 What do you understand that sentence to the audit mechanism is robust." 11 What do you understand that sentence to you understand that se | write all t have |
| "1) Balancing Transactions. "Section 5.6.2" "Section 5.6.2" "Section 5.6.2" Do you know what that is of? A. No. Q. " describes back end database amendment process which is included by design" Then he quotes from the document "Inserting 22 What do you understand that sentence to ablancing Transactions": Balancing Transactions": A. No idea. "There also needs a level of obfuscation to end the audit mechanism is robust." Then he quotes from the document "Inserting 22 What do you understand that sentence to ablancing Transactions": A. No idea. "There is a requirement that the SSC will have 24 Q. "The above-mentioned requirements suggest a need for a correction tool to be delivered where the delivered where the correction, audits it and saves both 1 then the reference is given. performs the correction, audits it and saves both 1 then the reference is given. performs the correction, audits it and saves both 2 life we can go back, please, to page 4, we are security assurance manager. What part of the correction to the provide a Linux shell based utility" A. Bo idea. The above-mentioned requirements suggest a need for a correction tool to be delivered where the correction and the saves are senior to a security assurance manager. What part of the correction and the saves are senior to security assurance manager. What part of the correction and the saves are senior to security assurance manager. What part of the correction and the saves are senior to security assurance manager. What part of the correction and the saves are senior to security assurance manager. What part of the correction and the saves and he says: Gan you explain what that is, please? Gan you explain what that is, please? Gan you explain what that is, please? " I believe the only way we will be able to the only way we will be able to the correction and the saves." | t have |
| 17 "Section 5.6.2" 18 "Section 5.6.2" 19 Do you know what that is of? 18 the transactions or they all roll back. You don 19 A. No. 20 Q. " describes back end database amendment process which 21 is included by design" 21 the audit mechanism is robust." 22 Then he quotes from the document "Inserting 23 Hand to you understand that sentence to 24 "There is a requirement that the SSC will have 25 ability to insert balancing transactions into the 26 41 performs the correction, audits it and saves both 27 changes. 28 "A simple low-cost solution for the tool is to 29 performs the correction, audits it and saves both 20 performs the correction, audits it and saves both 21 performs the correction, audits it and saves both 22 changes. 23 Let me the reference is given. 25 lf we can go back, please, to page 4, we can go back a please a please a please a please a please to page 4. We can go back please, to page 4. We can go back a please to page 4. We can go back please, to page 4. We can go back please to page 4. We can | t have |
| Do you know what that is of? A. No. 19 partial transactions or they all roll back. You done partial transactions written. Q. " describes back end database amendment process which is included by design" 21 the audit mechanism is robust." Then he quotes from the document "Inserting 22 What do you understand that sentence to Balancing Transactions": 23 A. No idea. "There is a requirement that the SSC will have 24 G. "The above-mentioned requirements suggest ability to insert balancing transactions into the 41 then the reference is given. performs the correction, audits it and saves both 1 then the reference is given. changes. 2 If we can go back, please, to page 4, we assume the provide a Linux shell based utility" 4 security assurance manager. What part of the Can you help us with what Linux was please? 5 Office was that within, to your knowledge? A. It's an operating system that they have used on well, on the branch database. 7 G. So this is still within the Post Office at the more and he says: 1 I believe the only way we will be able to the contraction of the part of the contraction what that is, please? 1 I believe the only way we will be able to the contraction of the part of the contraction where the contraction of the part of the contraction where the contraction was partial transactions written. 20 G. The above media transactions written. 21 the audit mechanism is robust." The above media transactions written. 22 What do you understand that sentence to the audit mechanism is robust." The above media transactions written. The above media transactions written. The audit mechanism is robust." The above media transactions written. The audit mechanism is robust." The above media transactions into the audit mechanism is robust." The above media transactions written. The audit mechanism is robust." The above media needs a level of observation of the audit mechanism is robust." The above media needs a level of observation of the audit mechanism is robust." The above media nee | t have |
| A. No. Q. " describes back end database amendment process which is included by design" Then he quotes from the document "Inserting 22 What do you understand that sentence to Balancing Transactions": Balancing Transactions": A. No idea. "There is a requirement that the SSC will have ability to insert balancing transactions into the 41 then the reference is given. performs the correction, audits it and saves both 41 then the reference is given. changes. "A simple low-cost solution for the tool is to provide a Linux shell based utility" Can you help us with what Linux was please? A. It's an operating system that they have used on well, on the branch database. Q. " which calls a PL/SQL package" Can you explain what that is, please? " I believe the only way we will be able to the audit manactions written. Q. " describes back end database amendment process which 20 Q. "There also needs a level of obfuscation to end the audit mechanism is robust." the audit mechanism is robust." the audit mechanism is robust." A. No idea. Q. "The above-mentioned requirements suggest a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a correction tool to be delivered where a need for a need for a need for a correction tool to be delivered where a need for a need for a need for a n | |
| Q. " describes back end database amendment process which is included by design" Then he quotes from the document "Inserting 22 What do you understand that sentence to Balancing Transactions": Balancing Transactions": Balancing Transactions": There is a requirement that the SSC will have ability to insert balancing transactions into the 41 then the reference is given. Changes. Performs the correction, audits it and saves both the changes. "A simple low-cost solution for the tool is to provide a Linux shell based utility" Can you help us with what Linux was please? A. It's an operating system that they have used on well, on the branch database. Q. "In the above-mentioned requirements suggest a need for a correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves and the saves are correction tool to be delivered where the correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction tool to be delivered where the correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the saves are correction tool to be delivered where the correction and the save that the plant the correction and the save that the plant the correc | sure that |
| 21 is included by design" 22 Then he quotes from the document "Inserting 23 Balancing Transactions": 24 "There is a requirement that the SSC will have 25 ability to insert balancing transactions into the 41 42 1 performs the correction, audits it and saves both 2 changes. 2 "A simple low-cost solution for the tool is to 4 provide a Linux shell based utility" 4 security assurance manager. What part of the 5 Can you help us with what Linux was please? 5 A. It's an operating system that they have used on well, 6 A. It's an operating system that they have used on well, 7 on the branch database. 8 Q. " which calls a PL/SQL package" 9 Can you explain what that is, please? 9 " I believe the only way we will be able to | sure that |
| Then he quotes from the document "Inserting 22 What do you understand that sentence to Balancing Transactions": 23 A. No idea. "There is a requirement that the SSC will have 24 Q. "The above-mentioned requirements suggest ability to insert balancing transactions into the 41 | |
| Balancing Transactions": 23 A. No idea. "There is a requirement that the SSC will have ability to insert balancing transactions into the 41 performs the correction, audits it and saves both 41 performs the correction, audits it and saves both 41 then the reference is given. then the reference is given. If we can go back, please, to page 4, we are grown as the senior tector of the security assurance manager. What part of the can you help us with what Linux was please? A. It's an operating system that they have used on well, on the branch database. Q. " which calls a PL/SQL package" Can you explain what that is, please? 9 A. No idea. No idea. A. No idea. A. No idea. The above-mentioned requirements suggest a need for a correction tool to be delivered what an every suggest and expression tool to be delivered what a need for a correction tool to be delivered what a need for a correction tool to be delivered what an every suggest and expression tool to be delivered what a need for a correction tool to be delivered what a need for a correction tool to be delivered what a need for a correction tool to be delivered what an every suggest and every | |
| "There is a requirement that the SSC will have 24 Q. "The above-mentioned requirements suggest ability to insert balancing transactions into the 41 a need for a correction tool to be delivered where 42 and | mean? |
| a need for a correction tool to be delivered when the performs the correction, audits it and saves both the changes. performs the correction, audits it and saves both the changes. in then the reference is given. If we can go back, please, to page 4, we can go back please. If we can go back please, to page 4, we can go back please. Dave King's response. He was the senior tect of the can go back please in the can go back please. Can you help us with what Linux was please? Dave King's response. He was the senior tect of the can go back please, to page 4, we can go back plea | |
| performs the correction, audits it and saves both changes. "A simple low-cost solution for the tool is to provide a Linux shell based utility" Can you help us with what Linux was please? A. It's an operating system that they have used on well, on the branch database. Q. " which calls a PL/SQL package" Can you explain what that is, please? 4 then the reference is given. I then the reference is given. Dave King's response. He was the senior tector security assurance manager. What part of the security assurance manager. What part of | hat there is |
| changes. 2 If we can go back, please, to page 4, we can go back, please, pl | ch |
| changes. 2 If we can go back, please, to page 4, we can go back, please, pl | |
| 3 | an see |
| provide a Linux shell based utility" 4 security assurance manager. What part of the Security assurance manager. What part of the Office was that within, to your knowledge? A. It's an operating system that they have used on well, on the branch database. 7 Q. So this is still within the Post Office at the more and he says: 9 Can you explain what that is, please? 9 " I believe the only way we will be able to the security assurance manager. What part of the security assurance manager. The security assurance | |
| Can you help us with what Linux was please? 5 Office was that within, to your knowledge? 6 A. It's an operating system that they have used on well, on the branch database. 7 Q. So this is still within the Post Office at the more 8 Q. " which calls a PL/SQL package" 8 and he says: 9 Can you explain what that is, please? 9 " I believe the only way we will be able to | |
| 6 A. It's an operating system that they have used on well, on the branch database. 7 Q. So this is still within the Post Office at the more and he says: 9 Can you explain what that is, please? 9 " I believe the only way we will be able to | 1 001 |
| 7 on the branch database. 7 Q. So this is still within the Post Office at the more 8 Q. " which calls a PL/SQL package" 8 and he says: 9 Can you explain what that is, please? 9 " I believe the only way we will be able to the same of the control of the | |
| 8 Q. " which calls a PL/SQL package" 8 and he says: 9 Can you explain what that is, please? 9 " I believe the only way we will be able to | ont |
| 9 Can you explain what that is, please? 9 " I believe the only way we will be able to | GIII, |
| | |
| TO A. A programme language SQL is a way of whiting structured to resolve this is if you get confirmation from Full | |
| | |
| query language transactions to an SQL database, which is 11 whether this has ever been done and what the | process is |
| the branch database is. 12 (POL have no direct access to the database). | |
| 13 Q. "The package will allow inserts to the following 13 Does that sentence in the brackets there | • |
| transactional tables in the Branch Database Live schema 14 with your understanding, that POL had no direction with your understanding, that POL had no direction with your understanding. | ot access |
| with the exception of the Message Journal. All inserts 15 to the database? | |
| will be audited in the table", and then a reference is 16 A. Yes. | |
| 17 given. 17 Q. "If corrections are needed, 'we' insert a transa | |
| Then the question that Mr Hodgkinson asked: 18 correct the situation following a reconciliation | rocess |
| 19 "From the above we wish to clarify, with evidence 19 rather than make direct changes to any transaction." | ction in |
| 20 where possible: 20 the database." | |
| 21 "How does this process operate and who has the 21 Then raises an issue about a contact with | n Fujitsu. |
| 22 ability to be able to perform this, eg POL and/or 22 Can we go back to page 1, please, of the | email chain |
| 23 Fujitsu?" 23 and then if we go to the foot of the page kee | ρ going, |
| 24 Then secondly: 24 keep going. Thank you. | |
| 25 "What monitoring is performed over the table", and 25 At the very foot of the page we can see a 43 44 | email |

| 1 | | from you to James Davidson of 15 May 2014. Who was | 1 | Q. | Why were you surprised of what became of the answers? |
|----|----|---|----|----|--|
| 2 | | James Davidson? | 2 | A. | Because I was just asked a couple of technical |
| 3 | A. | I don't know. I was asked by someone to provide some | 3 | | questions. I mean, I don't mind the answers being |
| 4 | | technical input from a couple of questions, so I did. | 4 | | there, but no one told me where they were going to go. |
| 5 | Q. | You say: | 5 | Q. | What, if anything, would you have done differently if |
| 6 | | " we did not discuss timescales but I have just | 6 | | you knew where the answers were going to go and what use |
| 7 | | been asked by Leighton for some more details before | 7 | | was going to be made of them in the future? |
| 8 | | a 10.30 meeting today." | 8 | A. | I would have missed the 10.30 deadline. |
| 9 | | Who was Leighton? | 9 | Q. | What other research would you have undertaken? |
| 10 | A. | I can't remember, I'm afraid. | 10 | A. | I would have talked to the database the database |
| 11 | Q. | At this stage, you're saying "I have just been asked by | 11 | | architect. |
| 12 | | Leighton for some more details before a 10.30 meeting", | 12 | Q. | Who was that? |
| 13 | | and it is 10.24 when you are writing the email. Did you | 13 | A. | Gareth Seemungal. |
| 14 | | have sufficient time to prepare the answers or are you | 14 | Q. | Say that again please? |
| 15 | | hinting that you hadn't? | 15 | A. | Gareth Seemungal. |
| 16 | A. | I probably was hinting that I have been given a very | 16 | Q. | So if we look then, question 1, about the and then |
| 17 | | tight deadline, so I have not researched this | 17 | | there's a reference to the table and then you have |
| 18 | | information as thoroughly as I probably could. | 18 | | broken down the question, part 1: |
| 19 | Q. | Did you know what the answers that you were giving were | 19 | | "How does this process operate and who has the |
| 20 | | going to be used for, ie the purpose to which they were | 20 | | ability to be able to perform this, eg POL and/or |
| 21 | | going to be put? | 21 | | Fujitsu?" |
| 22 | A. | No. I was very surprised to read the Deloitte | 22 | | What did you understand the question to mean? |
| 23 | Q. | I'm sorry? | 23 | A. | It's talking about the branch transaction correction |
| 24 | A. | I was very surprised to read the Deloitte the | 24 | | utility, and so I was trying to I know it has been |
| 25 | | references in there to this email. 45 | 25 | | used once, so I was using that information to try and 46 |
| 1 | | detail what was the process, how that time had come | 1 | | scripts using a test system to make the correction. |
| 2 | | about. | 2 | | An MSC" |
| 3 | Q. | You answer it as follows: | 3 | | What's an MSC? |
| 4 | | "The normal support route is used to identify when | 4 | Α. | Managed service change, so it's part of the authorised |
| 5 | | a fix is required either from a branch raised incident | 5 | | changes to systems. We used to have OCPs and then it |
| 6 | | or estate monitors that alert support staff. | 6 | | became MSCs and now it's TfS, and they're all changes. |
| 7 | | "An TfS incident would be raised with evidence." | 7 | Q. | Overall, what is that describing, an MSC or |
| 8 | | What does a "TfS incident" mean? | 8 | A. | It's going to describe what the change is and it's going |
| 9 | A. | So TRIOLE for Services is the first line helpdesk used | 9 | | to go to people to be authorised. It's going to this |
| 10 | | at this time. | 10 | | goes to a distributed list who have to authorise it. |
| 11 | Q. | Who would raise that incident? | 11 | Q. | So: |
| 12 | A. | So that would be it depends on where the issue was | 12 | | "An MSC would be raised for permission to run |
| 13 | | identified. It could have come from the branch MSU, | 13 | | the support tool on the live branch database. |
| 14 | | it could have come from a postmaster or from SMC, or | 14 | | "The SSC would run the script using the support tool |
| 15 | | from in Post Office. | 15 | | against the live estate." |
| 16 | Q. | You say: | 16 | | So, overall, in this part of the answer, you're |
| 17 | | "This would be transferred to the SSC as a PEAK | 17 | | describing who has the ability to perform the function |
| 18 | | because they support the applications." | 18 | | and it is generated by either subpostmasters, through |
| 19 | | Who is the "they" in that sentence? | 19 | | first line support, or somebody within Fujitsu |
| 20 | A. | SSC. | 20 | | themselves. It's picked up by third line support and, |
| 21 | Q. | "The SSC would investigate with evidence from the | 21 | | if it's necessary to run scripts using a test system, |
| 22 | | support branch database and then liaise 4th line | 22 | | a request would be raised for permission to do so? |
| 23 | | development (evidence and progress would be recorded on | 23 | A. | Yes. |
| 24 | | the PEAK). | 24 | Q. | Is that a fair summary? |
| 25 | | "4th line development would generate the required 47 | 25 | A. | That's a fair summary. 48 |

role to APPSUP. 1 Q. The second part of the question that you have broken 1 2 2 Q. What was "APPSUP"? down: 3 3 "What monitoring is performed over the table ..." A. APPSUP is the role that allows write to -- update to the 4 Can you explain, first of all, what the question 4 database 5 means, "What monitoring is performed over [that] table"? 5 Q. What does "APPSUP" refer to? 6 A. That table is the journal that this tool writes to, so 6 A. Application support, I presume, but that's ... 7 I'm presuming it was meaning how is that table populated 7 Q. Why would operational security ordinarily be required to 8 and then does it go anywhere else, audit or whatever. 8 be contacted to give permission to use APPSUP? 9 9 A. So this was a security -- an additional check to make Q. You answer: 10 "The Support tool is written to run under the SSC 10 sure that the reason we're requesting write update to (read only role) ..." 11 the database is reasonable. 11 12 What does that mean? 12 Q. But this allowed an automated access to the APPSUP role? 13 A. So the roles -- it doesn't have permission to write to 13 A. Correct, so normally APPSUP would be -- we would use 14 14 APPSUP when there is no tool -- tooling defined for 15 Q. "... and connects internally as the APPSUP role (write 15 it -- for when there is no plan. This is a planned 16 permission)." 16 tool. This tool can do all the connections underlying. 17 What does that part of the sentence mean? 17 Q. You say: A. That's the database role that does have permission to 18 18 "All changes are written to the AUDIT logs." 19 write to the database. 19 What do you mean by that answer? 20 Q. What does "and connects internally" mean? 20 A. I believe that the output from the tooling is written to 21 21 a log and then that log is written to the audit A. It means that we don't manually have to switch the role 22 22 to APPSUP. The tool does it all internally. If we database. 23 needed to switch role to APPSUP we have to request that 23 Q. You say: 24 24 "The output from the support tool is captured and permission from the SecOps team and the SecOps team get 25 the ops team to make the change and then we can switch 25 recorded on the PEAK." 49 50 1 A. That's -- yes, we did that as well, but there's -- that 1 Q. You're saying it has only been used once? 2 is a manual process. 2 A. No, sorry, that is a separate query to the other. There 3 3 Q. But you're saying that there's a footprint of the use of was two queries. One was about the actual tooling and 4 the tool written automatically to the audit log? 4 has it been used and then there's another query about 5 5 A. Correct. this parameter. 6 Q. "I can find just one recorded use of this tool", and 6 Q. Yes, if we just go back to the foot of the previous page 7 7 then you set it out. and up a little bit, it's the bullet point in bold: 8 A. Yes. 8 "Can we see evidence to demonstrate that this 9 Q. Then over the page, please, you say: 9 parameter is currently set to 'True'?" 10 "This indicates that this parameter has not been 10 What does that question mean? 11 changed since created on [5 October 2009]." 11 A. I'm unaware. I was looking at what the parameter is in 12 12 A. I think that was going from there is no update time that data -- so that question is -- sorry, "There is 13 13 stamp but there is a creation time stamp, that's what a parameter in the database, it's in this table, can you 14 I was going from there. 14 find out is the value true?" 15 Q. What do you mean by "This indicates that this parameter 15 Q. What does that mean though? 16 has not been changed"; what are you referring to, the 16 A. I -- how that parameter is used, I cannot tell you. 17 17 Q. You just wanted -- you answered the -parameter? 18 A. It would be a specific question about a database 18 A. I answered the question, the absolute question: "What is 19 parameter and that is the output of my query against 19 that parameter set to?" 20 that parameter: what are the fields on that database 20 Q. Overall do the answers mean that the only way that 21 parameter? 21 someone in the SSC could amend cash accounts was by 22 Q. What are you saying by that sentence? 22 using the process that you described or were you saying 23 A. So I'm detailing the settings of that parameter and 23 that that's just one type of process for amending cash 24 making an observation that I believe it hasn't been 24 accounts? 25 25 updated since creation. A. Overall, I was answering the question about the usage of

51

| 1 | | that tool, which was the question. I would say there is | 1 | MR BEER: Sir, that would be an appropriate moment for the |
|----|----|--|----|--|
| 2 | | the ability of direct access, but that is extremely | 2 | morning break. |
| 3 | | difficult. That is the reason why there is a tool for | 3 | SIR WYN WILLIAMS: Very well. |
| 4 | | doing such, and why there's many tables that are | 4 | Can I just ask, Mr Simpkins, so that I'm clear about |
| 5 | | written to in the branch database, not just a central | 5 | this, so in the last series of questions and answers, |
| 6 | | database table with the branch details the cash | 6 | from Mr Beer and your answers, you are confining what |
| 7 | | account details, or the BTS details in this time, and | 7 | you say to the time from the rollout of Horizon Online, |
| 8 | | you have to update all the correct tables in the right | 8 | as opposed to Legacy Horizon? You're not saying |
| 9 | | order or atomically, and this is a tool that is designed | 9 | anything about Legacy Horizon? |
| 10 | | for that and the actually, the fourth line team would | 10 | A. Correct, this is talking about the branch database, |
| 11 | | devise the scripts to be executed to do it correctly. | 11 | which is only used from HNG-X. |
| 12 | Q. | Would it be wrong to say that, overall, from this email, | 12 | SIR WYN WILLIAMS: Fine, I've got it. Thank you, yes. |
| 13 | | you were saying that cash accounts have been amended | 13 | Right, quarter of an hour, Mr Beer? |
| 14 | | only once? | 14 | MR BEER: Yes, so 11.30, please, sir. |
| 15 | A. | I think it is a fair statement because I think of how | 15 | SIR WYN WILLIAMS: Fine. |
| 16 | | difficult to update a cash account a branch trading | 16 | MR BEER: Thank you. |
| 17 | | statement in HNG-X database is. | 17 | (11.15 am) |
| 18 | Q. | So that would be a fair statement: you were saying that | 18 | (Short Break) |
| 19 | | cash accounts, to your knowledge, had only been amended | 19 | (11.30 am) |
| 20 | | the once and that was referring to the entirety of the | 20 | MR BEER: Good morning, sir, can you see and hear me? |
| 21 | | period of time that you had worked in the SSC? | 21 | SIR WYN WILLIAMS: Yes, I can. |
| 22 | A. | We're talking about the branch database, we're talking | 22 | MR BEER: Thank you. Mr Simpkins, just one question arising |
| 23 | | about HNG-X from 2010 to now. | 23 | from the last answer you gave. You said to the Chairman |
| 24 | Q. | Yes. | 24 | that your email should be read in the context of only |
| 25 | Α. | Yes. | 25 | referring to Horizon Online. |
| | | 53 | | 54 |
| | | | | |
| 1 | A. | Yes. | 1 | environment through three mechanisms: POL have designed |
| 2 | Q. | You said "in relation to the branch database". What did | 2 | features directly into Horizon to exert control; POL |
| 3 | | you mean by reference to the "branch database"? | 3 | operates IT management over Horizon; and POL have |
| 4 | A. | The branch database is only used in Horizon Online. It | 4 | implemented controls into and around the business |
| 5 | | wasn't in existence, it didn't exist in Horizon Legacy. | 5 | processes making use of Horizon. Collectively these |
| 6 | Q. | That was something maintained by Fujitsu, it wasn't in | 6 | three approaches of inherent systems design, ongoing |
| 7 | | the branch? | 7 | systems management and business process control are |
| 8 | A. | That's correct, so, yes, the branch database is in the | 8 | designed to deliver a Horizon processing environment |
| 9 | | data centre. | 9 | which operates with integrity." |
| 10 | Q. | Thank you. Can we look, please, at POL00029750. You | 10 | Then further down the page, please: |
| 11 | | will see that this is a draft Deloitte report of | 11 | "Deloitte has been appointed to: |
| 12 | | 23 May 2014. If we can skip to page 3, please, and then | 12 | "consider whether this Assurance Work appropriately |
| 13 | | just look at the first couple of paragraphs: | 13 | covers key risks relating to the integrity of the |
| 14 | | "As outlined to us by the Post Office Limited | 14 | processing environment, |
| 15 | | litigation team, 'POL is responding to allegations from | 15 | "to extract from the Assurance Work an initial |
| 16 | | subpostmasters that the 'Horizon' IT system used to | 16 | schedule of Horizon Features, |
| 17 | | record transactions in POL branches is defective and | 17 | "to raise suggestions for potential improvements in |
| 18 | | that the processes associated with it are inadequate | 18 | the assurance provision." |
| 19 | | (eg that it may be the source and/or cause of branch | 19 | Then it sets out how it is going to do its work. |
| 20 | | losses). POL is committed to ensuring and demonstrating | 20 | Were you aware that this process was being undertaken in |
| 21 | | that the current Horizon system is robust and operates | 21 | 2014? |
| 22 | | with integrity, within an appropriate control | 22 | A. No. |
| 23 | | framework'. | 23 | Q. Can we look forwards, please, to page 38. I have just |
| 24 | | "POL is confident that Horizon and its associated | 24 | shown you those initial parts of the document in order |
| | | | | • |

25

control activities deliver a robust processing

55

that you can understand what the document is and the bit

1 1 that we're going to look at where it falls within it. to process integrity was: 2 As part of their assurance work, Deloitte produce 2 "Branch Ledger transactions are recorded accurately 3 3 an assurance schedule and they say that they: in the Audit Store. "... present below a schedule of the Assurance Work 4 4 "Description": 5 and sources we have identified which relate to certain "Audit trail monitoring the usage of balance 5 6 groups of Horizon Features." 6 transactions." 7 They record an assessment of the level of comfort 7 Again, the same source of evidence. Did you know 8 that POL has over the relevant Horizon feature. Do you 8 that your email was going to be used in this way? 9 see? 9 A. No. 10 A. Yes. 10 Q. What, if anything, would you have done differently in Q. Then if we can scroll forwards to page 48, please. Can 11 terms of its construction and the contents of it if you 11 you see under the "Area", "Usage", in the second box 12 had known it was going to be used in this way? 12 13 13 A. I think I said earlier I would probably have had a talk down "Branch Ledger transactions are recorded accurately in the Audit Store", as the assertion giving rise to 14 to the database architect just to clarify that this 14 process integrity? 15 is -- my email answered these questions. But I was 15 16 The description of the feature of processing 16 fairly happy with what I replied to for the two 17 integrity is said to be: 17 questions that I was asked. 18 18 "Formalised change control approval and monitoring Q. So am I detecting this, that it was the narrowness of 19 process over usage of Balancing Transactions". 19 the answers that you gave --20 The source of that is said to be an email 20 21 21 communication from you of 15 May 2014. That's the thing Q. -- that if you had known they were going to be used for 22 we looked at and "articulating control design around 22 this purpose you might have added more to them? 23 this process", and the "Level of Comfort" that POL are 23 A. Yes. 24 24 said to have had is "Partial". Q. I take it, therefore, that you didn't discuss with 25 Then the next row, the "Key Assertion" giving rise 25 Deloitte the provision of your email or the content of 1 the answer? 1 Q. So this is incorrect? 2 A. Definitely not. 2 A. They have also got Jon Hulme as working for Post Office. 3 Q. Can we look, please -- that can be taken down -- at 3 Q. I'm so sorry? 4 POL00028070. We are three years on now and another 4 A. Sorry, the one above is incorrect as well. 5 report, also in draft, from Deloitte. If we go again to 5 Q. le his employer ought not to be POL? 6 page 3, please, you will see a summary from Deloitte of 6 A. Is Fujitsu, yes. 7 7 the Horizon Online system. It sets out the controls Q. So, in any event, as far as the content of the October 2017 Bramble report for Deloitte, you were not 8 that respond to the fundamental risks under those 8 9 subparagraphs. 9 interviewed for that? 10 10 Can you recall this report being produced? A. I don't recall ever being interviewed for that. 11 A. No. I have seen it in my bundle, but I don't recall it 11 Q. That can be taken down, thank you. 12 Can we look, please, at FUJ00088036. If that can 12 being produced. 13 Q. Do you recall whether they, that's Deloitte, spoke to 13 just be expanded a little bit, please. 14 you about it, the contents of the report? 14 Do you recognise this? 15 15 A. No. A. Yes. 16 16 Q. What do you recognise it as? Q. Can we just look forwards, please, to page 83 of the 17 document, please. In an appendix, they set out a list 17 A. It's a support -- well, it's a design document for when 18 of individuals that they, Deloitte, say were interviewed 18 we were introducing OpenSSH to remotely access the 19 and can you see your name two from the bottom here --19 counters. 20 A. I can. 20 Q. So we're here dealing with Legacy Horizon, as it became 21 Q. -- "John Simpkins, SSC team leader". Were you 21 known --22 interviewed by Deloitte? 22 A. Correct. 23 A. I don't recall being interviewed by Deloitte, no. 23 Q. -- not Horizon Online? You would have been, I think, 24 Q. You would probably remember if you were, wouldn't you? 24 provided with this at the time, or seen it at the time, 25 25 or had access to it at the time? A. I would have thought so. 59 60

A. We would have had access to it. We -- the SSC were

1

25

(predominantly Rclient) ..."

document we would put on the SSC website, so it's

| • | 7 | | • | | 2004 |
|----------|----|---|----------|----|--|
| 2 | | generally on a standard distribution list to comment on | 2 | | searchable. |
| 3 | | documents and give feedback to documents but they were | 3 | Q. | So members of the SSC would have access to it? |
| 4 | | routed out amongst the team. I don't know if the | 4 | A. | Correct. |
| 5 | | dimensions, or if this was probably PBCS(?), I don't | 5 | Q. | Thank you. Can we just go to page 9, please, and look |
| 6 | | know if that contains the reviewer's comments to see | 6 | | at the introduction to see what the document is. Under |
| 7 | | who | 7 | | 1.1.1, "General": |
| 8 | Q. | If we skip forwards, and then go down, is that what you | 8 | | "[SFS]" |
| 9 | | are referring to, the reviewer's details, ie those that | 9 | | I think that's "security function specification"; |
| 10 | | were given the opportunity to review? | 10 | | would that be right? |
| 11 | A. | That's correct, yes. So you've got mandatory you've | 11 | A. | I don't know. |
| 12 | | got Mik Peach and he was just the figurehead for the | 12 | Q. | If I'm right that that is what SFS means, security |
| 13 | | document reviews. They would be sent to the SSC and | 13 | | functions specification, what was the security function |
| 14 | | then given to someone. | 14 | | specification? |
| 15 | Q. | Then Mr Peach underneath him, I think? | 15 | A. | I don't know. |
| 16 | A. | Yes. | 16 | Q. | Anyway it, assuming that it is what I say it is: |
| 17 | Q. | Sorry, Mr Parker underneath him? | 17 | | " mandates the use of Tivoli Remote Console |
| 18 | A. | Yes. | 18 | | for the remote administration of Data Centre platforms." |
| 19 | Q. | Thank you. So this would have been a document that the | 19 | | Can you explain what that sentence is saying, |
| 20 | | SSC had an opportunity to review and comment on and | 20 | | please? |
| 21 | | then, in its final iteration, distribute it to the | 21 | A. | So Tivoli was a management package that was used for |
| 22 | | members of the SSC? | 22 | | eventing, amongst other things, and had the ability to |
| 23 | A. | No, it would be put in dimensions storage. We may put | 23 | | run some commands, and part of it was a remote console |
| 24 | | it onto our SSC website some if it were the if the | 24 | | which allows you to commit to a computer in a console |
| 25 | | final version were sent to us, this is the type of | 25 | | a command line facility, so you can execute commands on |
| | | 61 | | | 62 |
| | | | | | |
| 1 | | that computer. | 1 | | What was "Rclient"? |
| 2 | Q. | Thank you. It continues: | 2 | A. | That was a remote client so that's another tool that you |
| 3 | | "This records an auditable trail of log-ins to all | 3 | | can use to get a command line interface onto a server |
| 4 | | boxes accessed by the user." | 4 | | remotely. So that's what I remember we did use that |
| 5 | | Is that accurate, to your knowledge? | 5 | | to connect to the counters. |
| 6 | A. | I believe so. I didn't manage Tivoli. | 6 | Q. | You used that as well, did you? |
| 7 | Q. | It says: | 7 | A. | We used that to connect to the counters. |
| 8 | | "It is a matter of considerable discussion and | 8 | Q. | To connect to counters? |
| 9 | | correspondence that the [Tivoli Remote Console] is slow | 9 | A. | Correct. |
| 10 | | and difficult to administer." | 10 | Q. | " to remotely administer the live estate. Its use is |
| 11 | | Do you remember that, ie that it was slow and | 11 | | fundamental for the checking of errors." |
| 12 | | difficult to administer? | 12 | | Would you agree with that sentence? |
| 13 | A. | Not particularly. | 13 | A. | Yes. |
| 14 | Q. | "This has led over time to BOC personnel" | 14 | Q. | "The tool does not however record individual user access |
| 15 | | BOC, can you help us with what that was? | 15 | | to systems but simply records events on the remote box |
| 16 | A. | No. | 16 | | that Administrator access has been used." |
| 17 | Q. | Maybe Belfast Operation Centre? | 17 | | Does that reflect your understanding? |
| 18 | A. | Could be. | 18 | A. | Yes, so yes, you would probably have a Windows event |
| 19 | Q. | If it is Belfast Operation Centre, what was the Belfast | 19 | | that that user has been granted authorisation to connect |
| 20 | | Operation Centre? | 20 | | to the box, so a security event, I would imagine. |
| 21 | A. | They were the operations people, so | 21 | Q. | But it doesn't record what happened? |
| 22 | Q. | So part of Fujitsu in Belfast? | 22 | A. | It wouldn't record yes. It wouldn't record |
| | Q. | • | | | |
| 23 | A. | Correct, yes, they looked after the data centres. | 23 | Q. | It was fact of access but not |
| 23 24 | A. | | 23 24 | | It was fact of access but not |

25

user.

| 1 | Q. | So it doesn't record what the purpose of the access was | 1 | Q. | The system outline design? |
|----|----|--|----|----|--|
| 2 | | or what was done in the course of access and it doesn't | 2 | A. | Yes. |
| 3 | | record who has access. As you say, it would be | 3 | Q. | I've got it. So: |
| 4 | | a generic record? | 4 | | "After the proposals in this [document] have been |
| 5 | A. | Yes. | 5 | | implemented a CP" |
| 6 | Q. | "No other information is provided including success/fail | 6 | | Can you help us with that? |
| 7 | | so it is not possible to simply audit failures. The use | 7 | A. | Change proposal. |
| 8 | | of such techniques puts Pathway in contravention of | 8 | Q. | " will be raised to phase out [Tivoli Remote |
| 9 | | contractual undertakings to the Post Office." | 9 | | Console] |
| 10 | | Do you remember that issue arising back when using | 10 | | "This document provides an outline design, which |
| 11 | | Legacy Horizon? | 11 | | primarily stops Pathway being in contravention of its |
| 12 | A. | Not particularly. I do remember we used Rclient. | 12 | | contractual undertakings but also provides an acceptable |
| 13 | | I don't particularly remember the Tivoli remote console, | 13 | | and agreed level of secure access to systems for support |
| 14 | | but I don't remember particularly using it, and then | 14 | | activities." |
| 15 | Q. | Do you remember an issue being raised as to the SSC's | 15 | | Can you help us with what, if any, relationship the |
| 16 | | use of Rclient putting it in breach of its contractual | 16 | | BOC if I'm right, the Belfast Operation Centre had |
| 17 | | obligations or undertakings to the Post Office? | 17 | | to the SSC? |
| 18 | A. | I don't particularly remember that but I do know that we | 18 | A. | So they looked after the data centre systems, so the |
| 19 | | did switch to using OpenSSH to connect. | 19 | | operating system of the data centre servers, the |
| 20 | Q. | "After proposals in this SOD" | 20 | | databases in the data centre. So if it wasn't written |
| 21 | | I'm afraid I couldn't find what that meant: "SOD"? | 21 | | by Pathway, they generally looked after it; if it was |
| 22 | A. | The system support outline design, that's what | 22 | | written by Pathway, we looked after it, if that makes |
| 23 | | this document, is it? | 23 | | sense. |
| 24 | Q. | le this very document? | 24 | Q. | I think I understand. Can we go to page 13, |
| 25 | A. | Yes. | 25 | | paragraph 4.1.2, please. Can we just scroll down |
| | | 65 | | | 66 |
| 1 | | a little bit. I should read 4.1 first, "Areas of | 1 | | "Commit fraudulent acts; |
| 2 | | concern": | 2 | | "Maliciously or inadvertently affect the stability |
| 3 | | "There are two major areas of concern with the | 3 | | of the new Network banking and Debit Card online |
| 4 | | current support processes: | 4 | | services; |
| 5 | | "Second line support does not have the tools | 5 | | "In addition a complete audit would allow Pathway to |
| 6 | | necessary to perform their function | 6 | | defend the SSC against accusations of fraud or misuse." |
| 7 | | "Third line and operational support organisations | 7 | | Again, in 2002, did you know that this was an issue? |
| 8 | | access to the live system is not fully audited and in | 8 | A. | I was unaware that this was an issue. |
| 9 | | some cases is restricted in the actions that can be | 9 | Q. | Did you know that an investigation or a review was being |
| 10 | | carried out; | 10 | | undertaken into the extent of third line support access |
| 11 | | "The consequences of these two issues are specified | 11 | | and the method that the SSC was using to procure such |
| 12 | | in the following sections." | 12 | | access and that it was said to have provided the |
| 13 | | Then under 4.1.2: | 13 | | opportunities set out there? |
| 14 | | "Third line support staff receives repeat instances | 14 | A. | Not particularly. I do remember we were talk |
| 15 | | of calls that should have been filtered out by second | 15 | | I remember us talking about the OpenSSH access and |
| 16 | | line. Handling repeat calls is not an effective use of | 16 | | I also remember it being told that it was going to |
| 17 | | third line support resource. | 17 | | record every key press. So I knew that there was |
| 18 | | "The current support practices were developed on | 18 | | enhanced audit in what we were moving to but I don't |
| 19 | | a needs must basis; third line support diagnosticians | 19 | | remember particularly that it was put to us in this way. |
| 20 | | had no alternative other than to adopt the approach | 20 | | It was yes, it was enhanced audit. I did know that |
| 21 | | taken given the needs to support the deployed Horizon | 21 | | was coming in. |
| 22 | | solution. | 22 | Q. | Can you repeat that last sentence, I didn't hear it? |
| 23 | | "The consequences of limited audit and system admin | 23 | A. | It was enhanced auditing and, in this new method of |
| 24 | | access afforded to third line support staff provide the | 24 | | access, I knew that was coming in. |
| 25 | | opportunity to: | 25 | 0 | So you knew that a new method of access that was more |

| 1 | | auditable | 1 | | passage in that document. 4.3.2 on page 15, please. |
|--|------------------------------|---|--|------------------------------|--|
| 2 | A. | Correct. | 2 | | Thank you. The authors record that: |
| 3 | Q. | was being introduced, you didn't know the reasons | 3 | | "All support access to the Horizon systems is from |
| 4 | | that sat behind it? | 4 | | physically secure areas. Individuals involved in the |
| 5 | A. | Yes, so, obviously, I can infer something has come in | 5 | | support process undergo more frequent security vetting |
| 6 | | that's more auditable, the old one obviously was not | 6 | | checks." |
| 7 | | auditable enough. | 7 | | Were those two things accurate? |
| 8 | Q. | Would you agree with what is said here as to the reasons | 8 | Α. | Yes. |
| 9 | | for its introduction, namely that the type of access | 9 | Q. | |
| 10 | | that was afforded did give those opportunities? | 10 | | enhanced vetting? |
| 11 | Α. | I don't know if I agree with the first one. | 11 | Α. | Yes, so we had security checks on all the staff. The |
| 12 | | That it didn't give the facility to staff to commit | 12 | | site the room on the sixth floor had its own pass |
| 13 | | fraudulent acts? | 13 | | system. It wasn't part of the general building pass |
| 14 | Α. | Yes, I'm as far as I'm aware, the APS transactions | 14 | | system. The we had separate computers for connecting |
| 15 | | and banking transactions were all digitally signed. So | 15 | | to the data centre, as well as your corporate system. |
| 16 | | I can't see how SSC would be able to do any fraudulent | 16 | | It was on a totally separate system. You had separate |
| 17 | | activities there. | 17 | | passwords. You had two factor authentication with |
| 18 | 0 | The second one, maliciously or inadvertently | 18 | | secure IDs. So, yes, it was fairly secure. |
| 19 | | I imagine maliciously, you could try and damage | 19 | 0 | Then it says: |
| 20 | Α. | a database or take down an agent which would cause | 20 | Q. | "Other than the above controls are vested in manual |
| 21 | | an outage, or VPN server. So yes, I could see | 21 | | procedures" |
| 22 | | maliciously. | 22 | | That doesn't make complete sense: |
| 23 | 0 | We can put that to one side. Can we look, please, at | 23 | | " requiring managerial sign off controlling |
| 24 | Q. | FUJ | 23 24 | | |
| 25 | | | 25 | | access to post office counters where update of data is |
| 25 | | I'm so sorry, we should have looked at one other 69 | 25 | | required." 70 |
| | | | | | |
| | | | | | |
| 1 | | It's difficult to understand exactly what that | 1 | | was I believe and we didn't support the audit server |
| 1 | | It's difficult to understand exactly what that | 1 | | was, I believe, and we didn't support the audit server |
| 2 | Δ | means. | 2 | | either, so we didn't have access to those. We had |
| 2 | A. | means. It's probably talking about the OCPs and OCRs and the | 2 | | either, so we didn't have access to those. We had there was a separate key server, which was in a little |
| 2 3 4 | A. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were | 2 3 4 | | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. |
| 2 3 4 5 | Α. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give | 2 3 4 5 | | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth |
| 2 3 4 | Α. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you | 2 3 4 5 6 | | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key |
| 2 3 4 5 6 7 | | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. | 2 3 4 5 6 7 | 0 | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. |
| 2 3 4 5 6 7 8 | Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? | 2 3 4 5 6 7 8 | Q. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be |
| 2 3 4 5 6 7 8 9 | Q. A . | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. | 2 3 4 5 6 7 8 9 | Q. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not |
| 2 3 4 5 6 7 8 9 | Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: | 2 3 4 5 6 7 8 9 | | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? |
| 2 3 4 5 6 7 8 9 10 | Q. A . | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to | 2 3 4 5 6 7 8 9 10 | Α. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. |
| 2 3 4 5 6 7 8 9 10 11 | Q. A . | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" | 2 3 4 5 6 7 8 9 10 11 | A. Q. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? |
| 2 3 4 5 6 7 8 9 10 11 12 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? | 2 3 4 5 6 7 8 9 10 11 12 | Α. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. | 2 3 4 5 6 7 8 9 10 11 12 13 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information | 2 3 4 5 6 7 8 9 10 11 12 13 14 | A. Q. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection Act), business sensitive data and cryptographic key | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to audit and restrict user access. This exposes |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection Act), business sensitive data and cryptographic key | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to audit and restrict user access. This exposes Fujitsu to the following potential risks: "Opportunity for financial fraud" |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection Act), business sensitive data and cryptographic key information." That was true as well? No. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to audit and restrict user access. This exposes Fujitsu to the following potential risks: "Opportunity for financial fraud" Would you agree with that? |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | Q. A. Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection Act), business sensitive data and cryptographic key information." That was true as well? | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to audit and restrict user access. This exposes Fujitsu to the following potential risks: "Opportunity for financial fraud" |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A. Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection Act), business sensitive data and cryptographic key information." That was true as well? No. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to audit and restrict user access. This exposes Fujitsu to the following potential risks: "Opportunity for financial fraud" Would you agree with that? |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A. Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection Act), business sensitive data and cryptographic key information." That was true as well? No. No? In which respects was it false? | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to audit and restrict user access. This exposes Fujitsu to the following potential risks: "Opportunity for financial fraud" Would you agree with that? No, I don't see how you could do financial fraud. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | Q. A. Q. A. Q. | means. It's probably talking about the OCPs and OCRs and the MSCs, and things we were talking about, where there were other sign offs, but that was a manual sign off to give you authorisation, but it didn't physically stop you doing it without that. And there was no audit of it? Correct. "Otherwise third line support has: "Unrestricted and unaudited privileged access to all systems including post office counter PCs" That was true, yes? Yes. "The ability to distribute diagnostic information outside of the secure environment; this information can include personal data (as defined by the Data Protection Act), business sensitive data and cryptographic key information." That was true as well? No. No? In which respects was it false? So we didn't support the KMA we didn't support the | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | A. Q. A. | either, so we didn't have access to those. We had there was a separate key server, which was in a little room that was locked and used by the security people. There was a KMA work station, which was used by a fourth line support person who did the support for the key management. So there were areas we didn't support. Right, so it's an accurate statement but needs to be qualified, in that there are some areas that it does not apply to? Yes. Is that a fair way of describing it? Specifically, I'm thinking about the cryptographic key information. Skipping a paragraph, which is a repetition largely of what appeared previously, the authors record: "There are no automatic controls in place to audit and restrict user access. This exposes Fujitsu to the following potential risks: "Opportunity for financial fraud" Would you agree with that? No, I don't see how you could do financial fraud. "Operational risk errors as a result of manual |

| 1 | Q. | You agree with that? | 1 | | more, that it's opened in February 2011? |
|--------|----|---|--------|----|---|
| 2 | A. | Yes. | 2 | A. | Yes. |
| 3 | Q. | And: | 3 | Q. | I think you were aware of this PEAK because it related |
| 4 | | "Infringements of the Data Protection Act." | 4 | | to your work and, at one stage, I think it was referred |
| 5 | A. | Yes. | 5 | | to you and you made a contribution to it. I think we |
| 6 | Q. | You would agree with that, thank you. | 6 | | can just see that if we go forward to page 3 and just |
| 7 | | Now, this process that's being described, ie the | 7 | | scroll down. I think we can see an entry on there of |
| 8 | | backward look and the fixes that were proposed, you | 8 | | 17 August 2011 by you. Yes? |
| 9 | | didn't include any of that in your email of May 2014? | 9 | A. | Yes, so this is about the APPSUP. |
| 10 | A. | No. | 10 | Q. | Yes, so if we just go back to the beginning then, |
| 11 | Q. | Is that because you were answering the narrow question | 11 | | please, page 1, and the summary of the incident we can |
| 12 | | that was asked of you? | 12 | | see is that: |
| 13 | A. | There were literally two questions and I answered them | 13 | | "SSC Database users do not have correct |
| 14 | | both. | 14 | | permissions." |
| 15 | Q. | Can we look at FUJ00089756. | 15 | | Can you see whether this was raised by somebody |
| 16 | A. | This also is | 16 | | within Fujitsu or |
| 17 | Q. | This is Legacy? | 17 | A. | Yes, it is "Call Logger", top right, by Mark Wright in |
| 18 | A. | Legacy and the questions were in | 18 | | the EDSC. |
| 19 | Q. | They don't say Horizon Online but they could only apply | 19 | Q. | Then if we scroll down to the impact statement: |
| 20 | | to Horizon Online? | 20 | | "SSC users affected have more access than is |
| 21 | A. | Exactly. | 21 | | required to database resources. This is contrary to |
| 22 | Q. | Can we look, please, at yes, thank you, we've got it | 22 | | security policy. |
| 23 | | up. | 23 | | " There is currently no 'cost' to this issue." |
| 24 | | This is a PEAK, PEAK number 0208119. You will see | 24 | | As for "Perceived Impact": |
| 25 | | if we just scroll down a little bit, please, and a bit 73 | 25 | | " The customer is not aware of this problem or 74 |
| 1 | | change. | 1 | | of" |
| 2 | | "Scope: No actual impact/incidents of problems | 2 | | Then I think that's meant to be "or": |
| 3 4 | | relating to this issue have been experienced yet (and not expected)." | 3 4 | | " [or] the scripts will need amending to match how our users are set up in live." |
| 5 | | Then if we can go down, please, to what Mr Wright | 5 | A. | Yes. |
| 6 | | wrote when opening the PEAK "Summary", which we have | 6 | | Again, can you decode that for us, please? |
| 7 | | seen above: | 7 | | So the scripts are obviously using a different |
| 8 | | "Database users do not have correct permissions." | 8 | Λ. | permission that does no longer work and either the SSC |
| 9 | | Then in more detail and we're dealing with | 9 | | profile user on the database has to be updated or the |
| 10 | | Horizon Online here, aren't we? | 10 | | scripts have to be updated, so they work. |
| 11 | Α. | | 11 | 0 | Then if we scroll down, please, he, that's Mr Wright, |
| 12 | | "Development have delivered scripts to allow SSC users | 12 | α. | I think, includes an email chain that's included. If we |
| 13 | ۵. | to perform certain tidyup tasks (like clear failed | 13 | | scroll down a little further thank you I think we |
| 14 | | recoveries). However they have been delivered to work | 14 | | can see an email from Anne Chambers of 1 February 2011 |
| 15 | | against an SSC role which SSC users have not been | 15 | | that's been cut into this PEAK. Can you see that? |
| 16 | | granted as SSC users have the APPSUP role." | 16 | A. | Yes. |
| 17 | | Can you explain what that first paragraph means, | 17 | | She says: |
| 18 | | please? | 18 | | "Unfortunately development write their scripts |
| 19 | Α. | So these are roles in the database that grant different | 19 | | explicitly to use SSC. So I think we're stuck with it |
| 20 | | permissions. So the SSC role is a read only role, so | 20 | | unless they deliver new scripts (which would not be |
| 21 | | that's our default role. The APPSUP role is the one we | 21 | | a popular or quick option). |
| 22 | | were talking about before which does have the update | 22 | | "When we go off piste we use appsup. Can we have |
| 23 | | permissions. | 23 | | both??" |
| 24 | Q. | "Either SSC user creation/configuration needs to be | 24 | | Firstly, can you help explain what the first |
| 25 | | amended to make sure we have ALL required permissions | 25 | | paragraph of Ms Chambers' email is referring to? |
| | | · · · · · · · · · · · · · · · · · · · | | | paragraph of the Chambers chian is reterning to: |
| | | 75 | | | 76 |

| 1 | ۸ | So I think that's talking about the scripts that Mark | 1 | | script which does the database bit. If they have to |
|----|----|---|----|----|--|
| 2 | A. | was detailing above, like the failed recovery tidy | 2 | | produce a fix, I'd advise making one of the roles |
| 3 | | script, that there you write them to use the SSC | 3 | | suitable rather than having a mix of grants across both |
| 4 | | profile, which now no longer has write permission. | 4 | | roles." |
| 5 | 0 | Then she says: | 5 | | Then scroll up, please. Mr Wright replies: |
| 6 | Q. | "When we go off piste we use appsup." | 6 | | "I thought the original issue was why have the SSC |
| 7 | | What does that mean? | 7 | | |
| | ٨ | | | | users not had the SSC role granted? If it is a bug in |
| 8 | Α. | So, like we were just talking about the script, that | 8 | | the creation scripts then yes, needs [development] to |
| 9 | | script is written to it's a known issue about | 9 | | fix but I thought something was said the other day about |
| 10 | | clearing a failed recovery once they have been | 10 | | the SSC users not being set up correctly at the start?" |
| 11 | | investigated. "Off piste", she is basically saying that | 11 | | What is he referring to there? |
| 12 | | there is no tool to do this, this is something we have | 12 | A. | So I think this is about the SSC users not having the |
| 13 | | not come across before, therefore you could wait and | 13 | | permissions to switch to the database roles, so that |
| 14 | | write a tool to do the correction, or we have to go in | 14 | | they couldn't run the script should automatically |
| 15 | _ | manually to do the correction. | 15 | | switch to whatever role it needs to do in the script and |
| 16 | | And we use APPSUP to do that? | 16 | | it wasn't. Then he is saying "Are the SSC users set up |
| 17 | Α. | APPSUP is the write role, the role with the update | 17 | | correctly? Are the permissions correct for the SSC |
| 18 | _ | permissions. | 18 | _ | user?" |
| 19 | Q. | What do you understand the reference to going | 19 | Q. | Then if we go forward a page to your contribution. |
| 20 | | "off piste" to mean? | 20 | | Scroll down, please. Six months on, you say: |
| 21 | Α. | Where there is a new issue that you haven't got a script | 21 | | "This is getting confused, this incident is about |
| 22 | _ | to fix already. | 22 | | the SSC role which ISD" |
| 23 | Q. | Mr Gibson replies: | 23 | | "ISD" being? |
| 24 | | "I suspect you can have both but either way you need | 24 | | They are the operations people. |
| 25 | | a development fix as they produce the user creation 77 | 25 | Q. | " need to give to the SSC in order to run a script 78 |
| | | | | | |
| 1 | | provided to the SSC by development." | 1 | | So I think that was the output of this. |
| 2 | | Then underneath that it seems you transferred the | 2 | Q. | When was that solution put into your memory? |
| 3 | | call to a different team; is that right? | 3 | A. | After this. |
| 4 | A. | Yes, there's the host "APOP-Host-Dev", so APOP is | 4 | Q. | So some time after June 2015? |
| 5 | | a database development team. | 5 | A. | Yes. |
| 6 | Q. | Why was it necessary to transfer? | 6 | Q. | So does it follow that, between the rollout of Horizon |
| 7 | A. | I think it was because I really needed an answer about | 7 | | Online in, say, 2010 until mid-2015, there was off-piste |
| 8 | | the database roles and what they should be set as. | 8 | | access by the SSC? |
| 9 | Q. | I'm not going to carry on through the PEAK, save to go | 9 | A. | There was. It still wasn't the default role because the |
| 10 | | to the last page, please. We see Mr Haywood. We're | 10 | | default role is read only, but you could without |
| 11 | | sort of a year and three months on from the start; who | 11 | | going through SecOps and ISD do set role APPSUP to be |
| 12 | | was Mr Haywood? | 12 | | granted the update permission. |
| 13 | A. | The security manager. | 13 | Q. | How frequently was that done? |
| 14 | Q. | "The Business Impact has been updated: | 14 | A. | Not very frequently, to my knowledge, but again you |
| 15 | | "SSC users affected have more access than is | 15 | | could go through the PinICLs and PEAKs to find out at |
| 16 | | required to database resources. This is contrary to | 16 | | that time. Sorry, OCPs and OCRs, as well, would have |
| 17 | | security policy." | 17 | | been |
| 18 | | Then we see him including there the impact statement | 18 | Q. | Was it, other than by looking at PEAKs where somebody |
| 19 | | that we read originally. Can you remember what the | 19 | | had recorded that they had done this, auditable? |
| 20 | | solution was to this? | 20 | A. | I believe so. I believe there was |
| 21 | A. | This is, I mentioned before, where we don't have any | 21 | Q. | How was it auditable? |
| 22 | | default access to write permissions. I think this is | 22 | A. | Again, I didn't support audit but I believe that it |
| 23 | | the outcome from this, so we have to ask SecOps to ask | 23 | | wrote a message saying that you had switched role. |
| 24 | | ISD, the operations people to grant that permission for | 24 | Q. | So you believe that you personally wrote a message? |
| 25 | | | | | |
| 23 | | a temporary process, while we do the off piste things. | 25 | A. | |
| 23 | | a temporary process, while we do the off piste things. 79 | 25 | A. | No, no, sorry, the system. 80 |

| 1 | Q. | The system wrote a message? | 1 | A. | I would say to make doubly sure that we couldn't do it. |
|----------|-----------------|--|----------------------|----|--|
| 2 | A. | The system writes a message to Audit saying that this | 2 | | It's another step there is an idea of six steps of |
| 3 | | user has switched role to APPSUP. I believe, again, | 3 | | separation, where you could like another team can't |
| 4 | | that I think I saw a list of that in the GLO. | 4 | | do certain things, we can't access audit, we can't |
| 5 | Q. | Was that via a Tweet or | 5 | | access the KMA, and that's a security put in and this is |
| 6 | A. | No, no. | 6 | | another one of those. |
| 7 | Q. | or actually seeing the evidence? | 7 | Q. | Again, in your May 2014 email, why would you not tell |
| 8 | A. | I think I saw the evidence of a list of the times that | 8 | | those that were asking about this |
| 9 | | they switched into it. | 9 | A. | I was literally asked two questions and I literally |
| 10 | Q. | Was it known within the SSC community that this going | 10 | | replied to those two questions. |
| 11 | | off piste using APPSUP was problematic? | 11 | Q. | So if you had been asked the question "Look, we're |
| 12 | A. | We didn't know it was against any rules that Mr Haywood | 12 | | looking at the extent to which the SSC can do things to |
| 13 | | knew but going off piste, as it was put, would | 13 | | data without there being a proper security control |
| 14 | | definitely require an OCR or OCP to be raised and signed | 14 | | mechanism in place or an automatically generated audit |
| 15 | | off by SSC manager for OCRs and others for OCPs. | 15 | | trail of them, can you tell us about any of those |
| 16 | Q. | That requires the person that's going off piste to tell | 16 | | things, please?" you may have mentioned what we're |
| 17 | | somebody else that they're doing it? | 17 | | talking about now? |
| 18 | A. | Yes. | 18 | A. | And I would probably refer them to the audit architect |
| 19 | Q. | It puts the onus on the individual? | 19 | | because we don't support audit, so I couldn't really |
| 20 | A. | Yes. There were procedures in place and Mik was very | 20 | | tell you that much about what does get written to audit, |
| 21 | | sure about his procedures and we had two sets of eyes | 21 | | where it gets written. |
| 22 | | procedures as well for doing such things. | 22 | Q. | No, but what you could say is that "We have spent, by |
| 23 | Q. | If that was the case, that there were procedures in | 23 | | then, four years going off piste" |
| 24 | | place that included two sets of eyes on it, do you know | 24 | A. | I could say that for four years we have had the access |
| 25 | | why a change was necessary? | 25 | | to switch role to APPSUP and these are the probably |
| | | 81 | | | 82 |
| | | | | | |
| 1 | | the times we have done it, based on the PEAKs and | 1 | Q. | Would that have originated from a subpostmaster call? |
| 2 | | OCPs/OCRs. | 2 | A. | No. |
| 3 | Ω | Of course, when you were making your contribution to | 3 | Q. | Where would it have originated from? Where did it |
| 4 | ۵. | this chain, that was in August 2011 | 4 | ۵. | originate from? |
| 5 | Δ | Yes. | 5 | A. | It originated inside the SSC. |
| 6 | | to this PEAK? | 6 | Q. | And how? |
| 7 | | Yes. | 7 | | I don't know how I found that there were null modes in |
| 8 | Q. | | 8 | Λ. | APS and EPS transactions sorry, EPOSS transactions |
| 9 | Α. | I think I rooted it off to a different team at that | 9 | | but that is the key to |
| 10 | Α. | stage. | 10 | Q. | How did you know to connect the problem with EPOSS? |
| 11 | 0 | So you weren't aware of, necessarily, what happened in | 11 | A. | |
| 12 | Q. | the administration of the PEAK thereafter? | 12 | Λ. | types. APS transactions go into the APS database. They |
| 13 | ٨ | Not particularly. I would have known that there was | 13 | | are a type of transaction, like Bill Payments, that's |
| 14 | Λ. | a procedural change when it was changed and this is the | 14 | | a APS transaction. EPOSS transactions are a different |
| 15 | | new process we got to follow to get access to APPSUP. | 15 | | type, like transacting the stamp or for example, yes. |
| 16 | 0 | But, back to the May 2014 email, it was the narrowness | 16 | | So they are two different types of transactions and |
| 17 | Q. | of the questions that you were asked that caused the | 17 | | where they go. |
| 18 | | narrowness of the answer? | 18 | 0 | , - |
| | ^ | | | Q. | • |
| 19 20 | | I was only asked two questions so it was exactly that. Can we turn, lastly, to some EPOSS faults, please. Can | 19 20 | | page 8 of this document, please. I think that's a rogue reference. FUJ00058190. |
| | Q. | | | | _ |
| 21 22 | | we look, please, at FUJ00036863. I think you raised this PinICL? | 21 22 | | Yes, it's my fault. |
| 23 | ٨ | | 23 | | I will ask the questions without the document |
| 23 24 | _ | Yes. | 23 24 | ٨ | reference. Sure. |
| | Q. A. | Is that right? That's correct. | 2 4 25 | Q. | |
| 25 | A. | nat's correct. | 20 | Q. | The EPOSS fault that you raised, were you aware at that 84 |
| | | | | | * * |

| 1 | | time that there was a serious instability issue with | 1 | MR | BEER: Sir, can you see and hear me? |
|--|------------------------|--|--|------------------|--|
| 2 | | EPOSS? | 2 | SIR | WYN WILLIAMS: Yes. |
| 3 | A. | Only from what the PEAKs we were getting in, I would | 3 | MR | BEER: Thank you very much. Mr Simpkins is just being |
| 4 | | say. What instability in particular? | 4 | | shown back into the room. |
| 5 | Q. | Were you aware that it was proposed that there should be | 5 | SIR | WYN WILLIAMS: Sorry, would you repeat that? |
| 6 | | a rewrite of the code or at least the code as far as it | 6 | MR | BEER: Yes. Mr Simpkins is just being shown back into |
| 7 | | related to the cash account? | 7 | | the room. He has taken his seat now and we're ready to |
| 8 | A. | No, I wasn't aware at that time. | 8 | | go with Ms Page first. Thank you. |
| 9 | Q. | Do you remember any discussions within Fujitsu about the | 9 | | Questioned by MS PAGE |
| 10 | | need to rewrite the EPOSS code as far as it related to | 10 | MS | PAGE: Mr Simpkins, hello. I'm Flora Page. I represent |
| 11 | | the cash account? | 11 | | a number of the subpostmasters and, indeed, some of them |
| 12 | A. | No, I wasn't aware. | 12 | | were prosecuted, as you probably know, and some of them |
| 13 | MR | BEER: Yes, thank you very much, Mr Simpkins. They are | 13 | | were sent to prison. So what I'm going to ask about is |
| 14 | | the only questions I ask for the moment. | 14 | | a few different areas of how your role might have |
| 15 | | I believe Mr Stein is shaking his head. | 15 | | affected them. |
| 16 | | (Pause) | 16 | | I'm going to start, if I may, with the third |
| 17 | | Sir, I wonder whether we might break for a couple of | 17 | | supplemental agreement. Now, that may not mean much to |
| 18 | | minutes. Ms Page wanted to raise an issue with me | 18 | | you. Have you heard of that? |
| 19 | | and | 19 | A. | I think I may have had a supplemental agreement in here |
| 20 | SIR | R WYN WILLIAMS: Yes, by all means. I will stay close by, | 20 | | but I think it may have been the fourth, I'm not sure. |
| 21 | | so just alert me and I will come back on screen, okay? | 21 | Q. | So it was, just to give you a little context of |
| 22 | MR | BEER: Yes, thank you. | 22 | | chronology, it was signed in January 2000, so relatively |
| 23 | (12 | .17 pm) | 23 | | early in the national rollout. You were working then, |
| 24 | | (Short Break) | 24 | | weren't you, in the SSC? |
| 25 | (12 | .23 pm) | 25 | A. | Yes. |
| | | | | | |
| | | 85 | | | 86 |
| | | 85 | | | |
| 1 | Q. | One of the issues that is clear from that third | 1 | | know that there would be or there could be faults, which |
| 2 | Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in | 2 | | know that there would be or there could be faults, which would only become apparent because a subpostmaster |
| | Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is | | | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you |
| 2 | Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be | 2 | | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? |
| 2 3 4 5 | Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also | 2 3 4 5 | A. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there |
| 2 3 4 5 6 | Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some | 2 3 4 5 6 | A. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, |
| 2 3 4 5 | Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked | 2 3 4 5 | A. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from |
| 2 3 4 5 6 | Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that | 2 3 4 5 6 7 8 | A. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and |
| 2 3 4 5 6 7 | Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms | 2 3 4 5 6 7 8 | Α. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. |
| 2 3 4 5 6 7 8 | | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? | 2 3 4 5 6 7 8 | Α. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault |
| 2 3 4 5 6 7 8 9 10 | Α. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? | 2 3 4 5 6 7 8 9 10 | Α. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was |
| 2 3 4 5 6 7 8 9 10 11 | Α. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? | 2 3 4 5 6 7 8 9 10 11 | Α. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault |
| 2 3 4 5 6 7 8 9 10 11 12 13 | A. Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? | 2 3 4 5 6 7 8 9 10 11 12 13 | Α. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 | A. Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they | 2 3 4 5 6 7 8 9 10 11 12 13 14 | Α. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew |
| 2 3 4 5 6 7 8 9 10 11 12 13 | A. Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | A. Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they would contact either MBSC or HSH and then, if it was HSH it would, if it was a software issue, hopefully find its | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 | | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. All right. Well, in that case, can we please look at |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | A. Q. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they would contact either MBSC or HSH and then, if it was HSH it would, if it was a software issue, hopefully find its way to us and then we would investigate them based on | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. All right. Well, in that case, can we please look at document number POL00028743. When it comes up, you will |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | A. Q. A. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they would contact either MBSC or HSH and then, if it was HSH it would, if it was a software issue, hopefully find its way to us and then we would investigate them based on that, but I don't know about the agreement. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. All right. Well, in that case, can we please look at document number POL00028743. When it comes up, you will see that it's a PEAK from 2001. It is sometimes quite |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | A. Q. A. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they would contact either MBSC or HSH and then, if it was HSH it would, if it was a software issue, hopefully find its way to us and then we would investigate them based on | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. All right. Well, in that case, can we please look at document number POL00028743. When it comes up, you will see that it's a PEAK from 2001. It is sometimes quite hard to read these PEAKs. If we perhaps can you read |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | A. Q. A. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they would contact either MBSC or HSH and then, if it was HSH it would, if it was a software issue, hopefully find its way to us and then we would investigate them based on that, but I don't know about the agreement. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | Q. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. All right. Well, in that case, can we please look at document number POL00028743. When it comes up, you will see that it's a PEAK from 2001. It is sometimes quite hard to read these PEAKs. If we perhaps can you read it? Are you able to? |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | A. Q. A. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they would contact either MBSC or HSH and then, if it was HSH it would, if it was a software issue, hopefully find its way to us and then we would investigate them based on that, but I don't know about the agreement. Well, obviously, you would be alerted if a subpostmaster came to you Yes. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. All right. Well, in that case, can we please look at document number POL00028743. When it comes up, you will see that it's a PEAK from 2001. It is sometimes quite hard to read these PEAKs. If we perhaps can you read |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | A. Q. A. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they would contact either MBSC or HSH and then, if it was HSH it would, if it was a software issue, hopefully find its way to us and then we would investigate them based on that, but I don't know about the agreement. Well, obviously, you would be alerted if a subpostmaster came to you Yes. through the lower lines of support, and you would | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 | Q. A . | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. All right. Well, in that case, can we please look at document number POL00028743. When it comes up, you will see that it's a PEAK from 2001. It is sometimes quite hard to read these PEAKs. If we perhaps can you read it? Are you able to? I can read it, yes. I think this was in my pack as well. |
| 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | A. Q. A. | One of the issues that is clear from that third supplemental agreement is that the technical people in Fujitsu, and indeed as a result of that agreement it is clear that Post Office also knew, that there would be cash account errors caused by reference data, also caused by other technical faults and that, in some cases, they anticipated that they would only be picked up by subpostmasters phoning the call centre. Is that something that you can sort of accept from me, in terms of the interpretation of the agreement? I can accept that, yes. All right. Well, were you and your team ever alerted to that? If the we would take the calls sorry, so they would contact either MBSC or HSH and then, if it was HSH it would, if it was a software issue, hopefully find its way to us and then we would investigate them based on that, but I don't know about the agreement. Well, obviously, you would be alerted if a subpostmaster came to you Yes. | 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 | Q. A . | know that there would be or there could be faults, which would only become apparent because a subpostmaster alerted the helpdesk to that and that might come to you up through the chain? Not particularly. I can't recall being told that there would be faults that only a subpostmaster may notice, but we did identify faults based off calls from subpostmasters. So it was definitely a thing we did and we did identify faults based on those calls. If we identified a fault, we would scope the fault and, once it was recognised and identify who was affected by that, so I think I'm saying the team knew that there were issues that subpostmasters were identifying that weren't being picked up by automated things in the data centre. All right. Well, in that case, can we please look at document number POL00028743. When it comes up, you will see that it's a PEAK from 2001. It is sometimes quite hard to read these PEAKs. If we perhaps can you read it? Are you able to? I can read it, yes. I think this was in my pack as |

postmaster:

structure or in any fashion, let you know and your team

87

25

"... extremely unhappy about the problems with his 1 1 2 2 counters. He says he has had to pay out over £1,500 in 3 3 losses that are due to these problems. He has informed 4 4 POCL they can suspend him because he is refusing to make 5 5 good any further losses." 6 He asks for a face-to-face meeting: 6 7 "[He] feels very strongly about this and says he is 7 8 willing to take POCL to a tribunal/court because of the 8 9 stress he has suffered because of the problems." 9 10 Then it says, a bit further down, in capitals: 10 "This call is only to be closed with the express 11 11 12 permission of Julian Hall." 12 13 Do you know who Julian Hall is? 13 14 A. I don't. This was entered from the Horizon System 14 15 Helpdesk. This is their text before it gets to SSC. 15 16 Q. I see. If we go on a bit further, if we go as far as 16 17 page 4, please, and about halfway down we can see: 17 18 18 "This is an update for yesterday's call [this is in 19 capitals] made by the pm ... PowerHelp server was 19 20 20 down ... 21 21 "Call was taken over by STSA Donna Moulds and the 22 22 following information was manually logged: 23 "PM would like to add to the current complaint that 23 24 24 transactions are currently appearing and disappearing on 25 screen and also the PM's counter printer has not been 25 1 transactions. I think a little higher --1 2 Well, while we're here we can see that it is closed 2 3 down on the basis that: 3 4 "I am therefore closing this call as [it is] 4 5 no fault in product." 5 6 A bit higher up we can see, under 12 November 2001 6 7 7 Patrick Carroll: 8 "Phantom [transactions] have not been proven in 8 9 circumstances which preclude user error. In all cases 9 10 10 where these have occurred a user error related cause can 11 be attributed to the phenomenon. I am therefore closing 11 12 12 this call as no fault in product." 13 But if we look further up and, in fact -- I mean, 13 14 you may be able to confirm it for us without us looking 14 15 further up, the phantom transactions that the user is 15 16 referring to were, in fact, witnessed, weren't they --16 17 A. Yes, by the Romec engineer. 17 18 Q. -- by a Romec engineer, exactly. Yet, this later entry 18 19 says "Well, we will just close this down, there's 19 20 no fault, it must be user error". 20 21 A. Yes, I did read through it. I don't remember Pat 21 22 Carroll researching this one. I know he did do a lot of 22 23 monitoring and things like that, that's all in the call, 23 24 and I don't know if this comment is after -- for after 24 25 25 those -- those were put in place but, yes, I agree it 91

working either.

"PM had a message on screen stating [about the] transaction then the screen froze and timed out. When logged back in, the transaction was not on screen. PM rebooted the printer, and a receipt for this transaction was printed. Now the printer won't print any receipts", et cetera

A bit further down, it says at 9.33:

"PM would like to add that on the 18th April ... the PM spoke to Garreth from the Environmental Team. Garreth advised the PM that he will be in touch with him before the end of the month to investigate any problems. It is now past the end of the month, and still nothing has been done."

If we carry on down a bit, please. This is at 9.35:

"PM feels the system is unreliable. PM cannot trust his system."

He says again that he wants to speak to someone face-to-face. It is quite clear, as far as this postmaster is concerned, that he is saying that this is not his fault, he has not done anything wrong, the system is unreliable, yes?

- A. Yes, this was a phantom transactions call, wasn't it?
- Q. It was, that's quite right and, indeed, if we go down to page 10, we can see that reference to phantom

doesn't read well. But I can't comment on what was the conclusion.

- Q. What I'm getting at here is, if you had known, if you had been told explicitly and clearly that there would be errors which could only be picked up by subpostmasters making calls and saying that they are experiencing, let's say, phantom transactions, or whatever it may be, do you think you and your team would have been as willing to close down calls on the basis that it must be user error?
- A. I don't know how many calls we closed down as user error without good proof. Again, that probably can be researched through the PinICLs and PEAKs. And this one was investigated extremely heavily with multiple changes made, monitoring put in, but I cannot -- I agree, I cannot comment on the closure of that.
- Q. Well, when you say you can't comment on it, what do you mean by that?
- A. I don't know what investigations Pat had concluded to make that decision.
- Q. Was there a tendency to ascribe user error if a fault could not be got to the bottom of, as it were?
- A. I have heard that mentioned before by Mr Roll, I think, and I would hope not. I don't think there was. Again, a retrospective review of the PEAKs and PinICLs might be

- The Post Office Horizon IT Inquiry able to clarify that. 1 1 2 2 Q. Thank you. Could we perhaps look at another PinICL, or 3 a PinICL rather than a PEAK. This one is FUJ00042388. 3 4 This one begins on 25 February 2000. If we go down, 4 5 please, to 1 March 2000, and if we look at 11.51, we see 5 6 here, don't we, that at 11.51 -- Steve Warwick, he is 6 again. 7 one of your colleagues, is that right? You are there at 7 8 8 9 A. He was a fourth line support. 9 10 Q. He was a? 10 account. A. Fourth line support. 11 11 12 Q. Fourth line support, I see. So does that suggest that 12 13 you and your colleagues have then brought him in? 13 14 A. Yes, so if you look at the fourth line it says "Please 14 15 route to EPOSS DEV". 15 16 Q. Right, and so he is EPOSS DEV? 16 17 A. Yes. 17 18 18 Q. He says, at 11.51: 19 "This is identical to an issue which was raised 19 20 approximately four months ago, the cause of which was 20 21 21 never found." A. So on the TPS database, it automatically checked things 22 22 Do you know what happened when a cause was never 23 found, as it were? Who was informed? Were you ever 23 24 24 informed? Was your team ever given a message from Q I see 25 fourth line support that said "There's been no solution 25
 - PinICL, back to the team who raised the call at that point. Q. I see, and so when it says, a bit further down, "POCL
 - have now agreed closure of this incident", that's because this is something that's arisen on a platform and therefore the customer support people are actually liaising with POCL about it?
 - 8 A. Yes.

2

3

4

5

6

7

9

10

11

12

13

14

15

16

17

18

- Q. And POCL have agreed to close this down?
 - A. Yes, so the MSU, the -- or BSU at that time, they would -- for -- send corrected cash accounts to POCL, so this is what their process was, and then --
 - Q. So this would definitely have involved amending cash accounts?
 - A. It was involved in reporting the corrected cash accounts, not touching the system at all in any way, but reporting --
 - Q. But explaining that there was --
- 19 A. Explaining what the -- why the cash accounts that would 20 have been sent automatically were incorrect.
- 21 Q. When you say "explaining" -- we can look at it if you 22 like -- but from your memory, having read it, it does 23 make it pretty clear, doesn't it, that the problem is 24 pretty intractable. This doesn't appear to have 25 resolved the problem, does it --

95

to this one, it's outstanding"?

A. I don't know if we had that for this one, but we definitely were -- we raised KELs which had a description of the problem and what we have looked at and they were used in order -- in case it was raised

> I think that there was another call later on, which he said a similar issue was caused by archiving and Riposte happening at the same time as doing the cash

- Q. If we go down to page 13, it comes back to you. Can you explain to us how it comes back to you?
- A. So Martin's routed it back to the EDSC and Diane has passed it to me and I have passed it to the management support unit, so I think it was raised by the management support unit from the automated host detection, so
- Q. Perhaps if you can just explain, so does that mean -when you say the "automated host detection", what's
- like cash accounts, and this was picked up -- this PinICL was raised on the back of some of those alerts.
- A. So we are passing it back, the information on the
- 1 A. Correct.
 - Q. -- on a root cause basis?
 - A. Yes.
 - Q. Indeed, it's obviously involving Riposte, it's involving the DataServer, it's a pretty deep problem, if I can put it that way?
- 7 A. Yes.

2

3

4

5

6

8

19

- Q. And this record does not show it having been resolved?
- 9 A. Correct.
- 10 Q. But, at the end of it, through the customer support team 11 liaising with POCL, they have at least resolved the cash 12 accounts, if not the problem?
- 13 A. Correct.
- 14 Q. You, presumably, have no idea what was then decided in 15 terms of how cash accounts were going to be looked at or 16 handled or dealt with going forward?
- 17 A. No. I believe the management support unit would send 18 a corrected cash account in these instances --
 - Q. For the ones that had been found?
- 20 A. For the -- yes, and so this was picked up on the 21 automated checks.
- 22 Q. Yes, I see. It is fair to say, isn't it, that cash 23 account discrepancies came up a lot in what you were 24 dealing with, didn't they, at that time?
- 25 A. They did.

1 Q. Was there any forum for collating those and putting them 2 together and saying "Here's a lot of cash account 3 problems, can we spot any patterns here"? 4 A. One of the documents I had was -- had all the issues 5 that had been fixed, or listed them all as -- and which 6 were new ones that affected the cash accounts. 7 I presume it was something to do with the AI -- I can 8 have a flick through, but it had a table at the back, 9 and it seemed to indicate all the ones that -- and how 10 they were being detected. 11 Q. But that wasn't your document? 12 13 Q. That wasn't a document produced by SSC? No, all right. 14 MS PAGE: Thank you, those are my questions. 15 SIR WYN WILLIAMS: Anyone else? 16 MS PATRICK: Yes, sir, Ms Patrick here for Hudgells' CPs. 17 SIR WYN WILLIAMS: Yes. 18 **Questioned by MS PATRICK** 19 MS PATRICK: Good morning, Mr Simpkins. My name is Angela 20 Patrick and I ask questions for another number of 21 subpostmasters who were wrongly convicted and I'm 22 instructed by Hudgells solicitors. You will be glad to 23 know I only have two topics to ask you about and it's 24 about issues that arose in the management of bugs, 25 errors and defects and the first document I would like 97 1 There's a bit more explanation but what I want to 2 look at, at the bottom, is that paragraph: 3 "We have asked Fujitsu why it has taken so long to 4 react to and escalate an issue which began in May. They 5 will provide feedback in due course." 6 So you said the bug was discovered in the period 7 running up to the development of Horizon Online. Was 8 this actually in the period which was running up to the 9 acceptance of Horizon Online? 10 A. I don't know. 11 Q. Okay, we can perhaps ask another witness. 12 Do you know why there was a delay in informing the Post Office about this bug? 13 14 A. No, I don't know. 15 Q. Are you able to help us on where the feedback that's 16 mentioned there, that was going to be provided to the 17 Post Office, could be found? 18 A. Not to my knowledge, unless it was the list of the 19 affected branches. I believe that there was a list 20 produced and monitored for further occurrences but 21 I couldn't --22 Q. I think my reading of that is Fujitsu --23 "We have asked Fujitsu why it has taken so long to 24 react to this and escalate an issue which began in May. They will provide feedback in due course." 25

99

us to take a look at is FUJ00081584.

You see there is a table at the top there and it
looks like it is a note of a meeting and I think you can
see there you can an attendee, there recorded.

A. Yes.

Q. Your name is a few from the bottom and right below yours
is Gareth Jenkins. Can you see that?

A I can

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q. We think this is a table -- you can see at the top, it is about a receipts and payments mismatch issue and the Inquiry has heard something about that and will hear something more. I think that was issue that was discovered in mid-2010; is that correct?

A. Yes, newly into the HNG-X.

- Q. Yes, newly into the development of Horizon Online; is that fair?
- A. Yes, that's fair.
 - Q. The only reason I raise that is because there's no date on the document.
 - A. No, that's fair.
 - Q. If we can go to page 3, please, at the very top of the page and we can see there there's an explanation about:

"The receipts and payment mismatch will result in an error code being generated which will allow Fujitsu to ..."

98

Do you know if there was any feedback given to the Post Office about why there was such a long delay in informing them about the bug?

A. No, I don't.

Q. Thank you. This receipts and payments mismatch bug, are you able to help us with your explanation, perhaps a simple explanation, of what it was?

A. So I have read a little bit up on it, so it was when you were doing your stock unit balance and, if you had a discrepancy, it comes up with a message to warn you and say whether you want to post it to a local suspense. If you, at that point, hit the "Cancel" on the message you could then hit "Print" and carry on forward. It doesn't rewarn you and it lost that discrepancy value.

So it produces a cash account -- I'm sorry, a stock unit rollover that was out of balance so the payments didn't match receipts. It was visible on the payroll, but it didn't warn the postmaster again.

Then if they went to do the branch trading statement, when they roll the branch trading statement, they would get a non-zero trading position warning message because that stock unit had a payments/receipts mismatch.

Q. So, really short, it showed an imbalance in the cash account ultimately, didn't it?

| 1 | A. | It showed an imbalance in the branch trading statement, | 1 | Q. | There's 1, 2 and 3, and if we look at solution 2 there's |
|----|----|--|----------|------------|---|
| 2 | | yes. | 2 | | a number of suggestions there: |
| 3 | Q. | Thank you. Now, if we can turn to page 2, please, we | 3 | | "P and BA will journal values from the discrepancy |
| 4 | | can see at the bottom of page 2 where the impact of this | 4 | | account into the customer account and recover/refund via |
| 5 | | was analysed. And I'm going to look at the last three | 5 | | normal processes. This will need to be supported by |
| 6 | | of those bullets, "Impact": | 6 | | an approved POL communication. Unlike the branch |
| 7 | | "If widely known [this] could cause a loss of | 7 | | 'POLSAP' remains in balance, albeit with an account |
| 8 | | confidence in the Horizon System by branches. | 8 | | discrepancy that should be cleared." |
| 9 | | "Potential impact upon ongoing legal cases where | 9 | | I think that the recommendation you can see there is |
| 10 | | branches are disputing the integrity of Horizon data." | 10 | | that that solution, solution 2, should be progressed; is |
| 11 | | Then, finally: | 11 | | that right? At the top, under "Proposal for affected |
| 12 | | "It could provide branches ammunition to blame | 12 | | branches". |
| 13 | | Horizon for future discrepancies." | 13 | Α. | Yes, the group's recommendation is that solution 2 |
| 14 | | You can see that there on the record. | 14 | | should be progressed. |
| 15 | Α. | I can. | 15 | Q. | Are you able to help us as to what happened: was |
| 16 | | So that's discussing that the impact wasn't simply on | 16 | Φ. | solution 2 adopted? |
| 17 | Ψ. | the inability of subpostmasters to reach a balance but | 17 | Δ | I'm not able to help you. I'm sure it should be |
| 18 | | there could be a wider impact because of the | 18 | | relatively straightforward to find out. |
| 19 | | understanding of this problem being a system problem; is | 19 | 0 | Can we scroll to the top of that page, page 3. You can |
| 20 | | that fair? | 20 | σ. | see there's an introduction and a sort of overview |
| 21 | Δ | I think that's fair. | 21 | | explained there. At paragraph 2: |
| 22 | | Can we look at page 3, please, at the bottom. We have, | 22 | | "Fujitsu are writing a code fix which" |
| 23 | Q. | I think, here if I'm correct in my pagination | 23 | | I think there is a "will" missing there: |
| 24 | | a list of possible solutions; is that right? | 24 | | " which [will] stop the discrepancy disappearing |
| 25 | ٨ | Yes. | 25 | | from Horizon in the future. They are aiming to deliver |
| 23 | Α. | 101 | 23 | | 102 |
| | | | | | |
| 1 | | this into test week commencing 4th October With live | 4 | | The solution |
| 1 | | this into test week commencing 4th October. With live | 1 | A . | |
| 2 | | proving at the model office week commencing | 2 | Q. | Apologies. Would something else need to be done to fix |
| 3 | | 11th October, with rollout to the network completed by | 3 | | the mismatch that had already happened? |
| 4 | | 21st October. We have explored moving this forward and | 4 | Α. | You don't have to do anything, apart from you the |
| 5 | | this is the earliest it can be released into live." | 5 | | imbalance would rollover be brought forward and then |
| 6 | | So the problem was discovered in May, it's brought | 6 | | be reported in the next branch trading statement and |
| 7 | | to the attention of Post Office, I think, in September, | 7 | | after that it would be cleared. So you don't actually |
| 8 | | and now the solution will not be actioned or live until | 8 | | have to do anything as long as the Post Office is made |
| 9 | _ | October; is that correct? | 9 | _ | aware of what has happened. |
| 10 | Α. | That sounds correct, yes. | 10 | Q. | As long as the Post Office is aware that it has |
| 11 | Q. | Then it goes on: | 11 | | happened |
| 12 | | "The code fix will" | 12 | | Correct. |
| 13 | | I think there's another typo here: | 13 | Q. | and they are aware which branches may have been |
| 14 | | "The code fix will on stop the issue occurring in | 14 | | affected? |
| 15 | | the future but it will not fix any current mismatch at | 15 | A. | Correct. |
| 16 | | branch." | 16 | Q. | Thank you. I think we can move to the second document |
| 17 | | Can you help us with what that would mean in | 17 | | I would like to look at, Mr Simpkins. It's FUJ00083770. |
| 18 | | practice? | 18 | | It's a series of emails. Can you see that in front of |
| 19 | A. | So if you have already got a payments/receipts mismatch | 19 | | you now? |
| 20 | | in the stock unit and a non-zero branch trading | 20 | A. | Yes. |
| 21 | | statement, this fix won't correct that, but it will stop | 21 | Q. | You can see, if we scroll to the very bottom, which I'm |
| 22 | | it happening in future. | 22 | | going to start with, where we see your name mentioned |
| | | So there would be a problem that wouldn't be fixed by | 23 | | first you can see there at the very bottom there was |
| 23 | Q. | oo more would be a problem that wouldn't be into by | | | |
| | Q. | the fix. Does that mean that something else would need | 24 | | an email sent from Mike Stewart to you on |
| 23 | Q. | | 24 25 | | an email sent from Mike Stewart to you on 22 February 2006. Can you see that? 104 |

1 A. Yes. 1 2 2 Q. I'm not going to look at that yet, I'm going to scroll 3 3 a little bit to the bottom, so that we can all see what 4 4 the issue was. Can we go to page 6, please, at the 5 5 bottom, a little further down, thank you. You will see 6 there's an email there from Shaun -- it's Shaun -- it's 6 7 from Sandra McKay to Shaun Turner. Are you able to help 7 8 8 us with who they were? A. No. 9 9 Q. So it says: A. No. 10 Q. I think her title -- somebody else might be able to help 10 us. Sandra McKay, it says, is from sales and service, 11 11 12 and it says: 12 13 "You may recall that in September the above office 13 14 had major problems with their Horizon System relating to 14 15 transfers between stock units. 15 16 "The subpostmaster has reported that he is again 16 17 experiencing problems with transfers ... which resulted 17 18 18 in a loss of around £43,000 which has subsequently 19 rectified itself. I know that the subpostmaster has 19 20 reported this to Horizon support, who have come back to 20 21 21 that fair? him stating that they cannot find any problem. 22 22 "Clearly the subpostmaster is concerned as we have A. That's fair. 23 just spent a number of months trying to sort out the 23 24 24 first instance and he doesn't want a repeat performance. 25 He is convinced that there is something wrong with his 25 106 1 please, we see there Mike Stewart is writing to you: 1 2 "John, did you get a chance to look at this? Do we 2 3 think all will be well after S90 counter rollout?" 3 Was the S90 a new release --4 4 5 5 A. Yes. 6 Q. -- of Horizon Legacy? 6 September: 7 7 A. Yes. Q. If we go down, we can see -- I won't read it all out --8 8 9 in the first instance, he has tried to reach Anne 9 units. 10 Chambers but she was away; is that right? 10 11 A. I presume so. 11 12 12 Q. You see it says, "Anne is away, could I have your It says: comments as you were involved as well". He goes on to 13 13 14 talk about the PinICL and he refers to there being 14 15 a PinICL for this issue, and it says: 15 16 "The time out events are apparently fixed in a new 16 17 Riposte version released at S90." 17 18 There's a PinICL number, and it says: 18 just discussed. 19 "I have looked at the problems and can't see why the 19 He goes on, he says: 20 system reported disconnected nodes." 20 21 He goes on a little bit, and he explains: 21 22 "I think the best thing now is to see what happens 22 23 after S90. I'll continue to keep this call open to 23 24 remind me that this site should be checked then." 24 25 It goes on a little bit to talk about the 25 Then he says the release is due in the week of 107

Horizon kit. I would be grateful if you could investigate this and give him any support that you can." If we scroll back up a little bit, we will see the reply, or a further email in the chain, at the top of page 6. I think it's a further email in the chain rather than a reply. It's from Brian Trotter to Shaun Turner and do you know who Brian Trotter was?

"Further to Sandra's email. I visited the branch with Sandra last week and the subpostmaster provided clear documented evidence that something very wrong is occurring with some of the processors when carrying out transfers between stock units. To be absolutely sure from our side, can we either carry out a thorough check of the alleged faulty processors or swap them out."

So from what we can see at this end of the problem, it's the postmaster who has had an issue which has come back again and is being investigated, and somebody has also again witnessed that there is indeed an issue; is

Q. Okay. If we can go back to page 1, please, and if we start at the bottom, with the email that Mike Stewart sent to you. If we scroll a little bit further down,

postmaster, or the person reporting the problem initially being reported as female, and it goes on again to say a little bit more about the problem. He refers to "a magical £43,000 appearing and disappearing" and the postmaster is then reported to be male, and he says,

"... the above office had major problems with their Horizon System relating to transfers between stock

"The subpostmaster has reported that he is again experiencing problems with transfers ..."

"... which resulted in ... around £43,000 which has subsequently rectified itself. I know that [he] has reported this to Horizon support who have come back to him stating that they cannot find any problem."

It repeats almost the content of the email we have

"Sorry for this long-windedness. Is it a problem at the branch he wants to query? Is it Horizon kit or is there an issue with staff there?

"If there is an issue is this S90 release the cure? How confident are you/we it will fix the problem?"

4 March. So we're in February at this point, he is 1 She explains she is concerned why this particular 1 2 2 talking about a few weeks away; is that fair? branch had a particular problem. It goes on to say: 3 A. Yes. 3 "... KELs tell SMC that they must contact sites and 4 4 warn them of balancing problems if they notice the event Q. So he is posing some questions for you, originally for 5 Anne Chambers to consider; is that right? 5 storms caused by the held lock and advise them to 6 A. Yes. 6 reboot ... before continuing with the balance." 7 Q. If we scroll up on page 1 we will see the reply doesn't 7 It says: 8 come from you, it comes from Anne Chambers and it says: 8 "Unfortunately in practice it seems to take SMC 9 "I believe John has already responded to this, so 9 several hours to notice these storms by which time the 10 don't know if you need any more from me ..." 10 damage may have been done." It perhaps suggests that she has spoken to you 11 So it's a problem there that we know has already 11 12 before she has replied, doesn't it? 12 been known about for years; is that right? 13 A. That seems reasonable. 13 A. The locking problem, yes. 14 Q. It says: 14 Q. There's no solution as yet. They're looking to S90; is 15 "I haven't looked at the recent evidence but I know 15 that correct? 16 in the past this site had hit this Riposte lock problem 16 A. Yes, so the locking problem stops counters communicating 17 2 or 3 times within a few weeks. This problem has been 17 between each other, so it's like having -- what we were 18 18 around for years and affects a number of sites most talking before about replication not happening and what 19 weeks, and finally Escher say they have done something 19 had happened is with the (unclear) square they did 20 about it. I am interested in whether they really have 20 a transfer out, they did the transfer in on one counter 21 21 fixed it which is why I left the call open -- to remind and then they could do the transfer in on another 22 22 me to check over the whole estate once S90 is live -counter because it hadn't got the transfer in messages 23 call me cynical but I do not just accept a third party's 23 replicated to it, so they had two transfer ins and one 24 24 word that they have fixed something! transfer out, so you had a payments and receipts 25 "What I never got to the bottom of ..." 25 mismatch. 110 1 Q. So again a mismatch. 1 Again, what we've got there -- there's no solution 2 She says, Anne, that they still need to check the 2 as yet. Everybody is going to wait and see for S90; is 3 whole estate after S90 goes live? 3 4 A. That's looking for these events. 4 A. That's fair. The workaround is in place, but it is 5 5 Q. And there's still a need to investigate further, isn't 6 6 Q. Again, the issue is that Escher say they have fixed it? 7 7 A. Yes, so once the software has been rolled out, then you 8 would need to check to ensure it has fixed the problem. 8 Q. There's no certainty at this point, is there? 9 A. No, I think the third line support team are a cynical Q. But she expresses the problem that: 9 10 "With this issue it can sometimes take several hours 10 to detect the problem and by that point the damage has 11 11 Q. Indeed. Were Fujitsu here reliant on Escher for 12 been done." 12 a solution? 13 13 A. That was the workaround until the fix is put in place, A. A fix to Riposte. This is a Riposte bug with the 14 so the workaround was that SMC monitor the events from 14 Riposte locking, so it wouldn't replicate. 15 the estate and the lock event -- when they see the lock 15 Q. So for a Riposte bug --16 event, they contact the branch to reboot that counter, 16 A. Yes. 17 which was the workaround to fix the locking problem, so 17 Q -- it needs an Escher fix? 18 that then it will be replicating to the neighbouring 18 A. Escher write the Riposte software, yes, that's correct. 19 19 Q. You weren't fixing it onsite, it had to be repaired by counters. 20 Q. If we go back to the email chain, the very last in the 20 Escher? 21 thread, we see a message from Mike Stewart to Anne 21 A. That's correct. It's a software -- the new version of 22 Chambers which says: 22 Riposte fixed that problem. 23 "Anne, John did reply but just to say that Escher 23 MS PATRICK: Thank you. I don't think I have any further 24 say they have fixed it? So, like you, we will have to 24 questions for you, Mr Simpkins. 25 wait and see what happens after S90 rollout." 25 MR BEER: Sir, I don't think there are any other questions

111

| 1 | from anyone. | 1 | MR STEVENS: Mr Ascott, as you know my name, is Sam Stevens |
|----|---|----|---|
| 2 | SIR WYN WILLIAMS: So that's obviously a convenient time to | 2 | and I ask questions on behalf of the Inquiry. Please |
| 3 | break for lunch. | 3 | could I ask you to state your full name? |
| 4 | Mr Simpkins, thank you very much for providing your | 4 | A. Mark Andrew Ascott. |
| 5 | written statement and for answering questions during the | 5 | Q. Thank you for giving evidence to the Inquiry today. |
| 6 | course of the morning. I'm grateful. | 6 | I want to start with the bundles in front of you. |
| 7 | A. Thank you. | 7 | You should see a witness statement, and that is dated |
| 8 | MR BEER: Sir, before we break, there is a possibility that | 8 | 9 August 2022, and at page 24 of that statement is that |
| 9 | Mr Simpkins will come back to help us further in the | 9 | your signature? |
| 10 | Inquiry in later phases. I have been asked by the | 10 | A. Yes, it is. |
| 11 | Fujitsu legal team whether they have permission to speak | 11 | Q. Are the contents of that statement true to the best of |
| 12 | with him in the intervening period. | 12 | your knowledge and belief? |
| 13 | SIR WYN WILLIAMS: Well, my short answer to that is yes. | 13 | A. To the best of my knowledge and belief, yes. |
| 14 | MR BEER: Yes. Thank you very much, sir. So did you say | 14 | Q. Thank you. That now stands as your evidence to the |
| 15 | 2.00? | 15 | Inquiry but I will be asking you some questions, not on |
| 16 | SIR WYN WILLIAMS: Well, 5 past, I think. | 16 | all parts of it and, in particular, I won't be asking |
| 17 | MR BEER: Did you? Thank you very much, sir. | 17 | you questions today on the elements relating to Horizon |
| 18 | (1.05 pm) | 18 | Online, or at least not in any depth. |
| 19 | (The luncheon adjournment) | 19 | In your witness statement, you say that in |
| 20 | (2.04 pm) | 20 | August 1998 you worked for a Fujitsu business called The |
| 21 | MR STEVENS: Good afternoon, sir, can you see and hear me? | 21 | Solution Centre; is that right? |
| 22 | SIR WYN WILLIAMS: Yes, I can. | 22 | A. That's correct. |
| 23 | MR STEVENS: Thank you. If I may call Mr Ascott. | 23 | Q. At that stage could you summarise what qualifications |
| 24 | MARK ASCOTT (sworn) | 24 | you had relevant to IT? |
| 25 | Questioned by MR STEVENS 113 | 25 | A. So, as a member of The Solutions Centre I was assigned 114 |
| 1 | to various projects which would be involved with | 1 | the secure builds development team, which we will |
| 2 | integrating, implementing and testing solutions for | 2 | discuss in due course, but that was under Alan |
| 3 | customers. At the end of August, I had completed | 3 | D'Alvarez, was it? |
| 4 | three years on assignment to Barclays Investment Bank, | 4 | A. That was under Alan D'Alvarez, yes. |
| 5 | where we had migrated them from 40 locations around | 5 | Q. So it was in the security domain? |
| 6 | Tower Hill and Royal Mint Court, down to Canary Wharf, | 6 | A. That's my belief, that Alan was looking after the |
| 7 | so I had been involved in assisting a senior technical | 7 | security implementation. |
| 8 | design authority in implementing NT domains and | 8 | Q. You then say, in 2000, you moved to work for a team |
| 9 | providing work stations and configuring work stations | 9 | known as infrastructure products development unit. Wha |
| 10 | which were rolled out to the various BZW teams for their | 10 | role did that entail? |
| 11 | use in their new location. | 11 | A. Well, initially, I continued with the secure builds, so |
| 12 | Q. Thank you. You say you were assigned to ICL Pathway | 12 | I was on the secure buildings development team. |
| 13 | from The Solution Centre between September and | 13 | I worked in the Bracknell office but I eventually was |
| 14 | December 1998 to work on testing. | 14 | moved across to work in the Feltham office reporting |
| 15 | A. Mm-hm, that's right. | 15 | into Pete Dreweatt and Ian Morrison. |
| 16 | Q. What specifically were you testing at that point? | 16 | Q. Thank you. We will come to deal with that team in |
| 17 | A. I was testing network access and the ability for the | 17 | a moment. You left the Post Office account in |
| 18 | network to be robust to withstand sort of attacks, so | 18 | August 2005 |
| 19 | man in the middle type attacks, those types of spoofing | 19 | A. I did. |
| 20 | IP addresses, to spoof devices that shouldn't be | 20 | Q and you returned, I think, in July 2008 |
| 21 | accessing and those types of tests. | 21 | A. That's correct. |
| 22 | Q. So you weren't testing the EPOSS application? | 22 | Q and you went on to work on Horizon Online? |
| 23 | A. No. | 23 | A. Yes, I did. |
| 24 | Q. So, as you say, you transferred to the Pathway | 24 | Q. Just one point on that. In May 2009, there was |
| 25 | organisation, you say, in January 1999 and you worked on 115 | 25 | an article in Computer Weekly by Rebecca Thomson , which 116 |

criticised the Legacy Horizon IT system at that stage. 1 1 2 2 Were you aware of that article at the time? 3 A. I don't recall that specific article. I would have been 3 4 aware that Computer Weekly and Computing would be 4 5 writing articles but I wasn't taking much notice of 5 6 6 those. 7 Q. It wasn't sort of spoken about in the office, that 7 8 8 a core product that your account was working on had been 9 9 criticised by a trade journal? 10 A. I think there would have been discussion within the 10 11 office but, from my part, I tend not to believe what 11 12 journalists write. For me, when I started working for 12 13 ICL in 1978, I read religiously Computing and Computing 13 14 Weekly and -- but, over time, I just believed that those 14 15 publications were, you know, biased against ICL, so it 15 16 wouldn't have been a surprise to me that there would 16 17 have been negative articles in those publications. 17 18 18 Q. I want to move to your witness statement. If we could 19 bring that up please, it's WITN04760100 and 19 20 paragraph 34, please. Thank you. 20 21 21 I apologise, I have the wrong reference there. What 22 22 I will do is say this: in your statement, you refer to 23 having -- you say you recall that: 23 "High level test plans and test reports included 24 24 25 Post Office staff as recipients and reviewers of draft 25 1 A. No, the testing that I'm referring to in my witness 1 2 statements are mainly based upon my experiences of 2 3 3 Horizon Online. 4 Q. Horizon Online, not Legacy Horizon? 4 5 5 A. Mm-hm. So I was aware of the testing team in Feltham 6 where the system tests, the SV&I test rig, there was 6 7 7 also a test rig that was dedicated to supporting 8 performance testing and there was also a test rig that 8 9 was used for release testing, so I met and worked with 9 10 10 a number of the people in the test team, in my role as 11 11 a developer, in supporting them to diagnose defects with 12 12 the products, which myself or my team had caused them to 13 13 have to find. 14 Q. Could I just stop there. You referred to test rigs. 14 15 Just in lay terms or for a non-expert, what exactly is 15 16 a "test rig"? 16 A. My definition of a test rig is a combination of 17 17 18 platforms and servers which are going to replicate the 18 19 systems which will be used in the live service and, in 19 20 relation to Legacy Horizon and Horizon Online, 20 21 a combination with counters. 21 22 So some rigs would not necessarily have counters, 22 23 you may create a -- what we would refer to as a harness, 23 24 where that just involves servers, such as, when I was 24 25 looking after FTMS, we could have a test rig that just 25

119

9 November 2022 and approved documents." Yes? A. Yes. Q. Was that in relation to Legacy Horizon or Horizon It would have been Horizon Online. Q. In respect of Legacy Horizon, would that -- that statement have held true? A. I'm not sure on that. I wasn't part of the testing team for -- down at Feltham, that would have been testing with counters, so I am aware that Post Office staff did work closely with the SV&I team --Q. But you didn't have direct --A. But I didn't have direct involvement in the production or necessarily the reviewing of those documents. Q. Does the same apply for design and development documents A. I would say the design documents around the security solution that I would have been involved in didn't generally include Post Office recipients. Q. I want to then -- in your statement you, under a heading, give quite a lot of detail on the testing that you say you were involved with as part of the Horizon IT system. Was that the testing you did for the network matters you discussed earlier? involved the local FTMS gateway and the remote FTMS gateway --Q. Sorry, just on that, can you explain what "FTMS" is? A. FTMS was the file transfer managed service application used to move data from the database servers to other servers that was going to process that data. Q. So you have given us a definition of what the test rigs are and some of your involvement in it. Did you have any involvement in -- or do you have any knowledge of how the process of balancing was tested? A. No. I wasn't involved in the sort of counter operations and the transactions and the processes during Horizon Legacy system, or even Horizon Online. I did have more involvement with counters during Horizon Online doing performance testing. That would have involved creating scripts which could be driven through a tool we used, LoadRunner, to create a load and those scripts would have embedded counter transactions. And part of that would have involved processing of data created by the counter transactions within the data

> A. Yes, so in the secure builds side, where I was working, 120

testing for Legacy Horizon is not strong?

centre systems, primarily the database servers.

description of testing but your working knowledge of

Q. So, in essence, what we have here is a high level

2

3

4

5

6

7

8

9

10

21

1

2

3

4

5

6

7

8

9

10

11

14

15

16

17

25

- I was generating scripts, which would translate the policy files and the requirements around the security needs that would result in the platforms being built in the test rigs, in a manner that was going to replicate the live service so ...
- Q. Well, I do want to come to that shortly. Before moving on, you refer to something in paragraph 31 of your statement, "Maestro24x7 batch scheduler". Was that a Legacy Horizon matter?
- A. It was an application as part of the Legacy Horizon solution, which coordinated jobs that would be run in a 24-hour period in a sequence that enabled data to be harvested and collected and then processed by the various subsystems.
- Q. So you have already mentioned from testing that defects would be raised and they would need to be addressed by development teams, and that was through a system called PinICL.
- A. It was.

1 2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

- Q. That's a repository to log these identified defects and maintain a central point of what has been done to investigate them and resolve them. Do you agree with that?
- A. I agree that PinICL was that system that was used for defect management.

121

would usually prevent part of a test rig from being built or it may prevent a test rig from being built at all. So, clearly, if it was an issue where the test rig couldn't be built, that was important and that would be prioritised highly.

If I had made a typo, a group had been named incorrectly, or a user account had been specified incorrectly, that would have been a lower priority defect and would have been fixed in accordance to the priorities that were set at the time.

- Q. Are you aware of anyone outside of ICL Pathway who had access to the PinICL database?
- **A.** I'm not aware of anybody that wasn't a member of Pathway having access to the PinICL system.
- Q. So the Inquiry has heard evidence this week concerning problems with EPOSS and that application, one of which was related to the malformed or incomplete messages created by Riposte. Were you aware of that at the time?
- A. No, I wasn't.
- Q. When did you become aware of issues with Riposte?
- **A.** I think I would have been aware of Riposte issues around about 2001/2002.
- Q. Why was that?
- A. Working more and more in Feltham, I had the wider
 Pathway design and development team around me, so
 123

- Q. We have heard evidence about individual PinICLs being prioritised. Do you recall firstly who prioritised them in your team?
- A. That could be a combination of people within the team. It could be the programmer that was responsible for that product, it could be myself and that programmer. It could be that we would seek guidance from the senior designers that were available to us, just to identify what the true impact would be.
 - Q. How would you go about prioritising those PinICLs?
- 11 A. In terms of how quick we could fix them. One of the 12 things which we learned over time was what business 13 impact they would have but, initially, we were making 14 assessments on "That's a typo, we can correct a typo 15 very quickly and easily", or, you know, "That's going to 16 be a complex piece of work to fix", and we would, 17 generally, in those situations, turn to the designers to 18 guide.
- Q. So, sorry, for the more complex fixes, would they beprioritised higher or lower?
 - **A.** They would likely be prioritised higher.
- Q. And the easier ones prioritised lower, but you weren'tassessing that on business need, initially?
- A. Not initially. In the secure build space, where I was working, the defects that would come back to myself

I would have likely encountered people that would have been involved, designers that would have been involved in that counter solution. There would have been, like, chit-chat in the canteen, that type of thing.

- Q. So in around 2001/2002, is this roughly the point where you started attending the morning prayers meetings?
- A. Certainly once I had taken on responsibility for managing the infrastructure teams, which I listed in my statement, there was a higher chance that, you know, one of those applications would require some representation at morning prayers.
- Q. Could you just -- just so we can hear what your -- whywas it called "morning prayers"?
 - A. Simply because it was a very early morning meeting. I guess the reference goes back to, sort of, the religious context of, you know, morning matins and --
 - Q. What did you do in the meetings?
- A. I would attend with other attendees. I would listen to
 the issues that were being described there. Some may
 not involve me at all, but if there was an issue that
 was affecting the application set that I have listed in
 my witness statement, then the likelihood is I would be
 asked to take away and investigate what could be done to
 resolve a PinICL as quickly as possible.
 - Q. Could you just take us through the application set in

124

(31) Pages 121 - 124

11

12

13

24

25

5

6

8

9

13

14

15

16

17

18

19

20

21

22

23

24

25

non-expert terms, as it were, to say what you were actually responsible for at these morning prayer meetings?

1 2

3

4

5

6

7

8

9

10

11 12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

9

10

11 12

13

14

15

16

17

18

19

20

21

22

23

A. Yes, so secure builds, which was defining the NT domain structure, putting together the secure roles and secure role templates, defining the access control lists, which would be implemented against the NT platform set. FTMS, which I have described as the file transfer manager service, that application was used to move data, for example the TIP data from the database servers across to the Post Office systems. FTMS was also moved to move data to GiroBank for onward processing from GiroBank.

Audit-Dev, so there was the audit and archive solution which I was responsible for collecting data which would be stored for a period, which I knew to be seven years, and, you know, there was a set of definitions as to which data should be collected and recorded in that repository. Maestro-Dev, which we have touched on, so the driving part of the solution that kept the data flowing as and when it needed to be during the 24-hour cycle.

The other area that I was involved in was the auto configuration database, so that was the database that the counters would call into when they were being built and, on the counter, there was a utility called

125

That data would have been recorded and stored in the audit servers.

- Q. Was there a record of -- an audit record of key strokes that a subpostmaster would use when using a Horizon terminal?
- A. That I don't know.
 - Q. Could you tell us what the ARQ audit data contained?
 - A. No, I wouldn't be able to tell you what data is recorded in it. I believe it would include a PAN number, a unique number associated with a debit card or credit card, but whatever data it would have recorded, I don't
 - Q. Can I then turn -- I want to turn to the secure build
 Windows script and the secure build -- I think "Secure
 Builds-Dev" it is referred to in the document, is that
 the team?
- A. Yes, secure builds is what we were known as, the "Dev" was implied.
- Q. We have heard from Fujitsu employees this week evidence stating that it would be necessary for third line support to have write access to counter systems. Would you agree with that?
- A. Yes, I would.
- Q. Subject, of course, to proper control over its use?
- 25 A. Yes, so the requirements for the secure roles were

PC Config and Europa. Europa would do checks and trigger PC Config as needed for a new-build counter.

PC Config would connect and then, if you like, the personalisation data would be provided by the Auto Config database to that counter.

- Q. So if and when there were discussions on problems with
 Riposte and/or the EPOSS application, would you be
 involved in those conversations other than as
 a listener?
 - **A.** I wouldn't have been involved in those conversations other than as a listener.
 - Q. At the morning prayer meetings, was this solely limited to people employed by ICL Pathway and later Fujitsu?
- 14 A. Yes. All the representation there would have been ICL15 or Fujitsu people.
- Q. You mentioned then that one of the areas over which you
 had responsibility was audit. Would you have been
 responsible for -- or would that have included the audit
 of actions taken by support services such as the SSC?
- 20 A. I believe so.
- Q. Presumably, that also refers to audit for recording
 transactions that are carried out in Post Office
 Counters as well?
 - A. Yes, and the movement of data. So when -- for example, FTMS would collect files from the database servers.

126

recorded in the document RS/Req/012, which I think Alan
D'Alvarez authored, and that document there identifies
the secure roles that needed to be created and listed,
if you like, the attributes of each secure role, so ...

- Q. Could we bring up FUJ00087994, please. Is this the document you're referring to?
- 7 **A.** Ye
 - Q. As you say, it is drafted by Alan D'Alvarez. Did you have any input into it?
- A. I think I would have had discussions with Alan to sort
 of, if you like, shape what that group definitions would
 look like.
 - Q. We don't need to turn it up but, in your witness statement, you say, at paragraph 20:

"I regarded the security architects I worked with as subject matter experts and deferred to their knowledge and design thinking. If I did not understand part of their designs, I would discuss my concerns with them so that I could gain a complete understanding of their designs. Once the NT domain designs were approved by the senior design team in Fujitsu and were due to be taken forward, I developed tooling and scripts that were used to implement the secure builds on the various Windows platforms."

A. Yes.

128

Q. So is this saying that you would use this document and, when you say the security architects, is that referring to Alan D'Alvarez?

- A. No, I'm referring to Belinda Fairthorne there, so Belinda was ICL's senior security architect. Certainly in 1990, I was part of an organisation of which Belinda was a key member of the senior architects group and we reported into ICL's chief technology officer at the time
- Q. She was the person who wrote the access control policy?
- A. She -- she certainly contributed to that production ofthat document, yes.
 - Q. When it came to designing the scripts to make, as you say, the secure NT build, would this have been the primary document you would have used?
 - A. This would have been one of the documents that I used. I had meetings with Belinda and Barry Procter to go through a set of rules and requirements which would then provide the framework that would enable me to shape the NT domain design.

So that NT domain design was the start point for the work that I did with Belinda. From the NT domain design document, which in this group definitions for secure NT build document that Alan authored, in the tables that are included in this document, the columns include the 129

Servers", when you reviewed this document what did you think that covered in terms of scope?

- A. That would be all NT platforms that were members of any Windows NT domain.
- Q. So it would include post office counters?
- A. No, counters were excluded. These are Windows NT platforms that are located in the data centres, Wigan and Bootle.
- Q. So Mr D'Alvarez in evidence yesterday said that it would include counters. You disagree with that?
- A. Yes, I disagree with that.
 - Q. In the -- well, we can go there, I think. Bear with me, sorry.

Actually, I think it will be hard to bring the document up, but in the security functional specification, which was shown yesterday, one of the points that was made was that in Riposte, a Windows NT workstation was described as a message server, Riposte message server. Is your evidence that that -- because of that, this table -- it doesn't mean a counter falls within this table "All servers"?

- A. That's right. The counters were excluded from the Windows NT domain design.
- Q. But this does include the correspondence server?
- 25 A. The correspondence servers and the agent servers would

domain names, and Alan would have needed those domain names in order to fit the group definitions for the secure roles to build that picture up.

- Q. Well, let's look at one of those tables. If we could,
 please, turn to page 9, thank you. So it says "Group
 Name to be implemented", on the left, and "SSC Apps
 MAN", that's SSC application management?
 - A. Yes
 - Q. You were referring to the domains earlier. Which part of this table were you referring to?
- A. So, in this table here, the authentication domain column
 lists the authentication domains where users accessing
 those domains are going to be verified in terms of user
 and passwords.
 - Q. So could you assist us in decoding what's under the "Authentication Domain" column?
 - A. So the "PWYDCS", that domain name refers to Pathway data centre systems.

Then the "TEWKDLR", "SITTDRL" and "DUNSDLR" and "WYCODLR" refer to domains associated with De La Rue, so there would be FTMS servers located within those four sub-domains that were used to transfer data between Pathway systems and De La Rue systems.

Q. So, for present purposes, really, we're only concerned with the Pathway one at the top. Where it says "NT, All

have been catered for within this design.

- Q. Do you have any recollection as to what the Tivoli remote console did?
- A. My recollection of the Tivoli remote console was that it
 was -- that, if you like -- the device that was used to
 apply changes to the data centre systems.
- 7 Q. To the data centre systems, was that, sorry?
 - A. Yes
- Q. It's right, isn't it, that it would also be used to makechanges to counters?
- A. I have no recollection of it being used for counters,
 but my focus and my work was concentrated on delivering
 for the data centres.
 - Q. So it wasn't within your remit to look at how the SSC may or may not be able to access counter computers?
 - A. Well, I translated the document that Alan has authored here, which is shown on the screen, so the definition of the group name "SSC Apps MAN", I took that information and I created Windows NT scripts that would enable that tool set that's listed in the second column on the left under "Tools", so that those tools could be made available to the secure role, SSC Apps MAN, and I would have also created the access control lists, which would have enabled rewrite and execute to the folders on the various platforms described under "NT servers".

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

3

4

5

8

- 1 Q. Do you know who was responsible for access control as 2 between the SSC, or anyone in Pathway for that matter, 3 and the counter branch computers themselves? 4 A. No. No, I'm not aware of the security fit that was
 - applied to counters.
 - Q. Given you were based in the security team and you were involved in access control in some way, does that -- can we infer that no one was overseeing that aspect, namely who had access between the SSC and the counter systems?
 - A. I have no knowledge of anybody that was applying the same controls that I was applying to the Windows NT servers that were located in the data centres.
 - Q. Please could I go to FUJ00088036. This is a document that's been shown a few times this week. It's the "Secure Support System Outline Design" dated 2 August 2002. Do you recall if you saw this document in 2002?
 - A. I'm not listed as a reviewer of that document, but I do recall Geoffrey Vane. I do recall working with Geoffrey
- 21 Q. Sorry, Geoffrey?
- 22 A. Geoffrey Vane.

5

6

7

8

9

10

11 12

13

14

15

16

17

18

19

20

5

10

11

12

13

17

18

19

20

25

- 23 Q. Why is that relevant to this document, sorry?
- 24 A. I believe that Geoffrey Vane, as the security TDA at the 25 time, would have been involved in this document.

133

- 1 MBOSAS01(?) and MWESAS01(?) so those would be been the 2 servers that were hosting the terminal services.
- 3 Q. What was the purpose --
- 4 A. (Unclear) designed the first two.
- Q. So those domains were created to essentially give effect 6 to the tool proposed here?
- 7 A. Yes.
- 8 Q. And you were involved in the creation of those?
- 9 A. I believe so, yes.
 - Q. Could we please turn to page 19. If you scroll down a little, this diagram -- is that explaining the tool that is being proposed to allow audited access to the counter systems?
- 14 A. Yes. I think that diagram there is describing what we 15 knew as the Cygwin solution.
- 16 Q. And could you just explain what that solution entailed?
 - A. There was a terminal server, as described on the right-hand side. On the secure access server there was an SSH client and a similar SSH component logged on --
 - Q. What's the SSH client?
- 21 A. It was a third party solution that enabled secure 22 connection between a client and a server and it enabled 23 certain functions, such as the capture of user 24 authentication and the auditing of that log on.
 - Q. So was this to be used by members of the support

135

- Q. If we could turn the page just to see the distribution list. So yes, Geoffrey Vane, security TDA. Do you recall being -- well, let's first go to page 9, if I may, so we can set out what the document did. So SFS, do you know what that refers to?
- A. I believe that refers to the security functional specification.
- Q. So the security functional specification:

"... mandates the use of Tivoli Remote Console ... for the remote administration of Data Centre platforms. This records an auditable trail of log-ins to all boxes accessed by the user. It is a matter of considerable discussion and correspondence that TRC is slow and difficult to administer. This has led over time to BOC personnel relying heavily on the use of unauthorised tools (predominantly Rclient) to remotely administer the live estate."

With that context, do you recall having discussions about this document, or the issues raised in it in 2002?

- A. I don't recall the discussions in terms of the detail that's included within this document, but I do remember the PWYSAS domain being created and the --
- Q. Sorry, could you just explain what that is, sorry?
- A. So that would be Pathway secure access server, or servers, and then within that sub-domain I remember the 134
- services essentially to remotely access counters?
- 2 A. I believe so, yes.
 - Q. And you say it had -- well, we can see from the document that there were enhanced, or more audit features available, is that correct?
- 6 A. Yes.
- 7 Q. Do you know what data was captured for audit purposes?
- Q. Was audit not within your domain? 9
- 10 A. I didn't need to know the detail of data records that were being captured. What I needed to do in that role 11 12 was to make sure that the development team, looking 13 after and making changes to the audit solution, were 14 aware of those changes that they needed to code and my 15 role was to report to people like Pete Dreweatt and 16 lan Morrison whether the audit team was on track or not.
- 17 Q. So if we can go further down on this document please 18 there should be a small -- I think it's over the next 19 page, sorry. Thank you. This is referring to the 20 secure support access server, SSAS.
- 21 A. Yes.

22

25

- Q. Can you just assist with what that is?
- 23 A. Well, that is the secure access server that I was 24 referring to earlier.
 - Q. That's what you were referring to?

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 Yes, yes. 2 Q. And the additional security domain, it says: 3 "Third line and Operational Support Units have, and 4 require, system admin access to all systems they manage. 5 In order to create a non-refutable audit of all actions 6 carried out against systems they manage it is necessary 7 to restrict their access to the system which is 8 gathering the audit." 9 So in essence is that saying support services 10 shouldn't be able to access the audit data captured 11 through this tool? 12 A. Yes. 13 Q. It goes on -- we don't need to read it all -- to refer 14 to a second security domain being required and changes 15 will be required to the existing security NT domain 16 hierarchy. In the box it says: 17 "Question for Mark Ascott: Could this be as simple 18 as moving the administration of the PWYDCS user domain 19 to a separate group?" 20 Could you please just elaborate on what that 21 question meant? 22 A. I think that question is exploring, you know, is there 23 a simple change to the NT domain structure, or, you 24 know, is there a more involved change. The person 25 asking that question, whoever wrote that design note, is 1 a deployable script in to enable the software deployment 2 tools to execute those scripts. So they would have been 3 involved in the testing for real, in terms of did those 4 scripts enable the PWYSAS domain to be added to the data 5 centre solution. 6 Q. But do you have any recollection of the results of the 7 testing related to this tool? 8 A. No, no. So in my own testing of my own scripts I would 9 have desk checked them. I wouldn't have had available 10 to me an equivalent test rig of all of the NT systems 11 and all of the NT domains, so I would have desk checked 12 and I think there was a technique that I used to use 13 where I could execute the scripts but using Echo to 14 print, if you like, the commands that were being 15 executed and I would have received those responses back 16 and I would have then been able to tell whether the 17 logic in the script was doing what I intended it to do. 18 Q. But that was all prior to going for formal testing? 19 A. That's right, so that was my own development testing 20 that I was doing to satisfy myself that the changes were 21 ready to be made available to the product integration 22 23 Q. And as part of your role in developing this tool and as

part of your role in audit, did you have any oversight

as to whether or not this tool was being used for the

139

24

25

clearly looking to me to provide some guidance as to how simple or quickly the change can be made, or, you know, is there more complexity required.

- Q. And do you recall when this change was made?
- A. I think this is part of the conversations and the work that I would have done with Geoffrey Vane in order to bring this in, this change in. As I say, for me my recollection is that I recommended that we introduced the PWYSAS domain and placed the secure access servers as member servers of that specific domain, that sub-domain.
 - Q. When this tool was developed, presumably it required testing?
- Yes, it would have done.
 - Q. Were you involved in that side of things?
 - A. I would have been involved in delivering the changes that introduced the PWYSAS domain and setting up the secure role users and the secure profiles, the access controllers. My scripts would have been passed to the PIT team, as it was known then, the product integration team, and the first real test for those scripts would have been when the SPTS team, the service provision and test services group -- they were a small team, they were located in Feltham, and they would have used those scripts after the PIT team had wrapped around

purpose of remotely accessing counters?

- A. So I'm providing the basis for the platform to be part of the overall domain structure. The application -- the SSH application that's sitting on top of that is a tool that I'm enabling the secure role and the users that are created from that secure role to execute. The configuration of the SSH tool itself, I was not delivering that configuration.
- Q. I want to ask a few points about something that was raised in evidence with Graham Allen yesterday. Did you listen to his evidence?
- A. I did see some of Graham's recording, yes.
- Q. He said that -- I'm paraphrasing, but that the team developing Horizon Online was not able to look at the code for Legacy Horizon for intellectual property reasons, is that right?
- A. Yes. I remember in 2008 when I rejoined Pathway in the test team that there was a lot of emphasis put on the counter team not reviewing or going anywhere near what was the Riposte solution for fear of claims that, you know, the new HNG-X counter that was being developed was a copy, or was, you know, a facsimile of the Riposte system and that was a message that was regularly mentioned, certainly in 2008. You know, although the counter development team was located in the Braro 1

| 1 | | Tower(?) and I was primarily working in the test team | 1 | A. | It was. |
|----|-----|--|----|-----|--|
| 2 | | lab area on the ground floor, the ripples of those types | 2 | Q. | a third party, and the question I ask is: in your |
| 3 | | of reinforcing that message would reach down into the | 3 | | roles, did you have something similar where you had to |
| 4 | | test teams. | 4 | | work with a third party outside of Pathway in respect of |
| 5 | Q. | Are you aware of whether that inability to look at the | 5 | | an application you oversaw within Legacy Horizon? |
| 6 | | Legacy Horizon code caused any difficulty, or any it | 6 | A. | Well, I would say no to that. I mean as part of |
| 7 | | held things up when developing Horizon Online? | 7 | | developing the secure role templates, those templates |
| 8 | A. | Again, I wasn't part of the counter development team, so | 8 | | needed to refer to applications and executable files |
| 9 | | I can't really say how they went about solving the | 9 | | from a range of applications, but, you know, what I was |
| 10 | | problems of delivering and developing the new HNG-X | 10 | | processing was, you know, "This is the tool, this is the |
| 11 | | counter. You know, we were very much aware that, | 11 | | executable this is where you can expect that to be |
| 12 | | you know, there was this it didn't feel like | 12 | | located on the NT server or the NT work station", so if |
| 13 | | a directive, you know, "You will not go and look at that | 13 | | I knew the location of the executable I could configure |
| 14 | | previous counter design or that previous counter code", | 14 | | that into the secure role template so |
| 15 | | but it wasn't far away from that. The direction was | 15 | Q. | So no equivalent then to working with Escher? |
| 16 | | relatively clear that, you know, we could well, | 16 | A. | I didn't have to have any dealings with any third party |
| 17 | | ICL/Fujitsu could be taken to task for copying Riposte, | 17 | | suppliers. In Horizon Online obviously, as part of the |
| 18 | | so | 18 | | volume and integrity test activity, we utilised the |
| 19 | Q. | In your role and when working with Legacy Horizon did | 19 | | Hewlett Packard LoadRunner tool set and in order to use |
| 20 | | you ever have to deal with third party software | 20 | | that, so tools and applications, we needed to have |
| 21 | | suppliers? | 21 | | access to their support desk, you know, when we |
| 22 | A. | Can you repeat the question again please? | 22 | | encountered issues with using that tool, but that was |
| 23 | Q. | Yes, of course. Let me put it another way. I know you | 23 | | solely for Horizon Online and the HNG-X solution. |
| 24 | | didn't work with Riposte, but that was an application | 24 | MR | STEVENS: Sir, I wonder if that might be an appropriate |
| 25 | | provided by Escher | 25 | | time to have a break? |
| | | 141 | | | 142 |
| | | | | | |
| 1 | SIF | R WYN WILLIAMS: Yes, it would. Sorry about the slight | 1 | | a teenage girl who had been glue sniffing |
| 2 | | delay but I was on mute. | 2 | Q. | Sorry, is this relevant to |
| 3 | MF | R STEVENS: Thank you, sir. | 3 | A. | Well, it sets my mindset in relation to articles |
| 4 | SIF | R WYN WILLIAMS: So what time shall we start? | 4 | | produced and written by journalists, so for me, |
| 5 | MF | R STEVENS: Quarter past, would that work? | 5 | | you know, my experience in that instance I take with |
| 6 | SIF | R WYN WILLIAMS: That's fine. | 6 | | a pinch of salt what journalists write. |
| 7 | MF | R STEVENS: Thank you. | 7 | Q. | But, as I say, knowing what you know now, what is your |
| 8 | (3. | 03 pm) | 8 | | view of the Computer Weekly article? |
| 9 | | (Short Break) | 9 | A. | Yes, knowing from the court cases and the judgments that |
| 10 | (3. | 14 pm) | 10 | | have been passed, now I know differently. |
| 11 | MF | R STEVENS: Good afternoon, sir, can you see and hear me? | 11 | MR | STEVENS: Sir, I have no further questions, but |
| 12 | SIF | R WYN WILLIAMS: Yes, I can. Thank you. | 12 | | I understand that there are I will just check if |
| 13 | MR | R STEVENS: Mr Ascott, I only have one question really. | 13 | | there are any questions in the room, sir. |
| 14 | | You said at the beginning of your evidence, towards the | 14 | | (Pause) |
| 15 | | start, that when I referred to the 2009 Computer Weekly | 15 | | No, it's a nil return, sir. |
| 16 | | article, you thought that publications or journalists | 16 | SIR | R WYN WILLIAMS: There we are, Mr Ascott. The questions |
| 17 | | were biased against ICL, yes? | 17 | | that have already been put to you are the ones that |
| 18 | A. | Yes. | 18 | | people want to put, so thank you very much for coming to |
| 19 | Q. | Do you still hold that view, or have you changed your | 19 | | give your evidence and for answering the questions and |
| 20 | | mind knowing what you know now about Legacy Horizon? | 20 | | thank you for making your written statement as well. |
| 21 | A. | What I know now from news media organisations like the | 21 | | So I take it that concludes this afternoon's |
| 22 | | BBC, ITV, Sky, I would say yes obviously I am aware that | 22 | | business, Mr Stevens? |
| 23 | | prosecutions were made that not necessarily should have | 23 | MR | STEVENS: That does, sir. We will be back at 10 o'clock |
| 24 | | been, but at that time I had had an experience whereby | 24 | | tomorrow if that suits you. |
| 25 | | a journalist wrate for our local newspaper that | 25 | CID | MVN WILLIAMS: Voc. of course. So 10 c'clock temorrow |

25

a journalist wrote for our local newspaper that

143

SIR WYN WILLIAMS: Yes, of course. So 10 o'clock tomorrow

144

| 1 | morning. | 1 | | |
|----|--|----|--------------------------|-----|
| 2 | MR STEVENS: Thank you, sir. | 2 | INDEX | |
| 3 | (3.17 pm) | 3 | | |
| 4 | (The Inquiry adjourned until 10.00 am on Thursday, | 4 | JOHN SIMPKINS (affirmed) | 1 |
| 5 | 10 November 2022) | 5 | Questioned by MR BEER | 1 |
| 6 | | 6 | Questioned by MS PAGE | 86 |
| 7 | | 7 | Questioned by MS PATRICK | 97 |
| 8 | | 8 | MARK ASCOTT (sworn) | 113 |
| 9 | | 9 | Questioned by MR STEVENS | 113 |
| 10 | | 10 | | |
| 11 | | 11 | | |
| 12 | | 12 | | |
| 13 | | 13 | | |
| 14 | | 14 | | |
| 15 | | 15 | | |
| 16 | | 16 | | |
| 17 | | 17 | | |
| 18 | | 18 | | |
| 19 | | 19 | | |
| 20 | | 20 | | |
| 21 | | 21 | | |
| 22 | | 22 | | |
| 23 | | 23 | | |
| 24 | | 24 | | |
| 25 | | 25 | | |
| | 145 | | 146 | |

| | 1 | 2 per cent [1] 21/5 | 108/4 108/13 | 89/7 89/17 90/2 95/7 |
|--|---|--|--|--|
| MR BEER: [19] 1/3 | 1 February 2011 [1] | 2.00 [1] 113/15 | 47 [2] 10/1 11/19 | 97/23 97/24 98/10 |
| 1/5 1/10 24/25 25/2 | 76/14 | 2.04 pm [1] 113/20 | 48 [2] 28/3 57/11 | 98/11 98/22 99/13 |
| 54/1 54/14 54/16 | 1 March 2000 [1] | 20 [1] 128/14 | 4th [2] 47/22 47/25 | 100/2 100/3 107/14 |
| 54/20 54/22 85/13 | 93/5 | 2000 [6] 6/18 7/2 | 4th October [1] | 107/25 108/3 109/2 |
| | | 86/22 93/4 93/5 116/8 | 103/1 | 109/20 110/12 110/18 |
| 85/22 86/1 86/3 86/6 | 1 per cent [2] 21/7 | 2001 [2] 88/18 91/6 | | 117/7 122/1 122/10 |
| 112/25 113/8 113/14 | 21/9 | 2001/2002 [2] 123/22 | 5 | 123/22 134/19 140/9 |
| 113/17 | 1,500 [1] 89/2 | 124/5 | 5 October 2009 [1] | 141/9 143/1 143/20 |
| MR STEVENS: [12] | 1.05 pm [1] 113/18 | 2002 [6] 68/7 123/22 | 51/11 | above [9] 7/19 42/24 |
| 113/21 113/23 114/1 | 1.1.1 [1] 62/7 | 124/5 133/16 133/17 | 5.6.2 [1] 41/17 | 43/19 60/4 70/20 75/7 |
| 142/24 143/3 143/5 | 10 [1] 90/25 | 134/19 | 51 [1] 31/6 | 77/2 105/13 108/7 |
| 143/7 143/11 143/13 | 10 November 2022 | 2005 [1] 116/18 | 58 [1] 33/12 | above-mentioned [1] |
| 144/11 144/23 145/2 | [1] 145/5 | 2006 [1] 104/25 | l | 42/24 |
| MS PAGE: [2] 86/10 | | 2008 [4] 15/8 116/20 | 8 | absolute [1] 52/18 |
| 97/14 | 144/25 | 140/17 140/24 | 83 [1] 59/16 | absolutely [3] 4/19 |
| MS PATRICK: [3] | 10.00 [1] 145/4 | 2009 [7] 7/7 39/22 | | 5/1 106/14 |
| 97/16 97/19 112/23 | 10.24 [1] 45/13 | 40/2 40/5 51/11 | 9 | accept [3] 87/9 87/11 |
| SIR WYN WILLIAMS: | | 116/24 143/15 | 9 August 2022 [1] | 109/23 |
| [23] 1/4 1/7 24/23 | 46/8 | 2009/2008 [1] 15/8 | 114/8 | acceptable [1] 66/12 |
| 25/1 54/3 54/12 54/15 | | 2010 [7] 5/23 6/21 | 9 November 2022 [1] | acceptance [1] 99/9 |
| 54/21 85/20 86/2 86/5 | | 7/5 7/9 53/23 80/7 | 1/1 | |
| 97/15 97/17 113/2 | 11.15 [1] 54/17 | 98/13 | 9.33 [1] 90/8 | access [66] 4/18 4/21 5/1 5/6 5/8 8/24 |
| | 11.30 [2] 54/14 54/19 | 2011 [4] 74/1 74/8 | 9.35 [1] 90/15 | 40/15 44/12 44/14 |
| 143/1 143/4 143/6 | 11.51 [3] 93/5 93/6 | 76/14 83/4 | 9.57 [1] 1/2 | 50/12 53/2 60/18 |
| 143/12 144/16 144/25 | 93/18 | | | 60/25 61/1 62/3 64/14 |
| • | 11th October [1] | 2014 [9] 40/20 41/2 | A | |
| | 103/3 | 45/1 55/12 56/21 | A1 [2] 14/23 14/25 | 64/16 64/23 65/1 65/2 |
| 'cost' [1] 74/23 | 12 November 2001 | 57/21 73/9 82/7 83/16 | ability [8] 41/25 | 65/3 66/13 67/8 67/24 |
| 'Horizon' [1] 55/16 | [1] 91/6 | 2015 [2] 80/4 80/7 | 43/22 46/20 48/17 | 68/10 68/12 68/15 |
| 'POL [1] 55/15 | 12.17 pm [1] 85/23 | 2017 [1] 60/8 | 53/2 62/22 71/15 | 68/24 68/25 69/9 70/3 |
| 'POLSAP' [1] 102/7 | 12.23 pm [1] 85/25 | 2022 [4] 1/1 1/16 | 115/17 | 70/24 71/11 72/2 |
| 'True' [1] 52/9 | 12.58 [1] 88/23 | 114/8 145/5 | able [20] 41/13 41/15 | 72/18 74/20 79/15 |
| 'we' [1] 44/17 | 13 [2] 66/24 94/11 | 21st October [1] | 43/22 44/9 46/20 | 79/22 80/8 82/4 82/5 |
| | 13 May 2014 [2] | 103/4 | 69/16 88/20 91/14 | 82/24 83/15 115/17 |
| <u>•</u> | 40/20 41/2 | 22 February 2006 [1] | 93/1 99/15 100/6 | 123/12 123/14 125/6 |
| [16] 41/20 42/13 | 14 April [1] 88/24 | 104/25 | 102/15 102/17 105/7 | 127/21 129/10 132/15 |
| 43/8 49/15 57/4 62/17 | 14 years [1] 5/25 | 23 May 2014 [1] | 105/10 127/8 132/15 | 132/23 133/1 133/7 |
| 63/24 64/10 66/8 | 15 [2] 28/2 70/1 | 55/12 | 137/10 139/16 140/14 | 133/9 134/24 135/12 |
| 70/23 78/25 89/1 | 15 May 2014 [2] 45/1 | 24 [1] 114/8 | about [117] 1/25 2/23 | 135/16 136/1 136/20 |
| 102/24 108/7 110/3 | 57/21 | 24-hour [1] 125/21 | 3/15 5/13 6/20 9/1 9/2 | 130/23 137/4 137/7 |
| 134/9 | 17 [1] 18/18 | 25 [4] 6/20 6/25 9/18 | 9/7 10/11 10/19 12/12 | 137/10 138/9 138/18 |
| and [1] 49/15 | 17 August 2011 [1] | 10/21 | 13/12 13/13 13/21 | 142/21 |
| describes [1] | 74/8 | 25 February 2000 [1] | 16/14 18/19 19/25 | accessed [2] 63/4 |
| 41/20 | 18 [1] 1/18 | 93/4 | 20/6 21/5 21/6 21/7 | 134/12 |
| extremely [1] 89/1 | 18 pages [1] 1/16 | 26 years [1] 5/19 | 21/17 23/25 24/14 | accessing [3] 115/21 |
| KELs [1] 110/3 | 18th April [1] 90/9 | 3 | 24/16 26/15 26/19 | 130/12 140/1 |
| mandates [2] | 19 [4] 1/19 1/20 | | 26/22 27/2 27/15 | accordance [1] |
| 62/17 134/9 | 18/17 135/10 | 3.03 pm [1] 143/8 | 30/24 31/17 31/18 | 123/9 |
| must [1] 42/13 | . 5, | ··· | | account [21] 29/19 |
| need [1] 78/25 | 1978 [1] 117/13 | 3.14 pm [1] 143/10 | | |
| present [1] 57/4 | 1978 [1] 117/13 | 3.17 pm [1] 145/3 | 31/19 32/3 33/3 35/23 | 29/20 30/3 30/10 53/7 |
| | 1990 [1] 129/6 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 |
| | 1990 [1] 129/6 1996 [4] 2/8 2/9 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 |
| relying [1] 63/24 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 |
| relying [1] 63/24 requiring [1] 70/23 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 accounting [2] 39/19 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 which [2] 43/8 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 115/14 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 4 4 August 2022 [1] | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 52/25 53/22 53/23 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 which [2] 43/8 102/24 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 115/14 1999 [1] 115/25 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 4 4 August 2022 [1] 1/16 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 52/25 53/22 53/23 54/4 54/9 54/10 59/14 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 accounting [2] 39/19 42/3 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 which [2] 43/8 102/24 will [1] 66/8 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 115/14 1999 [1] 115/25 1999/2000 [2] 6/18 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 4 4 August 2022 [1] 1/16 4 March [1] 109/1 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 52/25 53/22 53/23 54/4 54/9 54/10 59/14 68/15 71/3 71/4 72/13 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 accounting [2] 39/19 42/3 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 which [2] 43/8 102/24 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 115/14 1999 [1] 115/25 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 4 4 August 2022 [1] 1/16 4 March [1] 109/1 4.1 [1] 67/1 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 52/25 53/22 53/23 54/4 54/9 54/10 59/14 68/15 71/3 71/4 72/13 74/9 75/22 77/1 77/8 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 accounting [2] 39/19 42/3 accounts [12] 52/21 52/24 53/13 53/19 94/22 95/11 95/14 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 which [2] 43/8 102/24 will [1] 66/8 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 115/14 1999 [1] 115/25 1999/2000 [2] 6/18 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 4 4 August 2022 [1] 1/16 4 March [1] 109/1 4.1 [1] 67/1 4.1.2 [2] 66/25 67/13 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 52/25 53/22 53/23 54/4 54/9 54/10 59/14 68/15 71/3 71/4 72/13 74/9 75/22 77/1 77/8 77/9 78/9 78/12 78/21 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 accounting [2] 39/19 42/3 accounts [12] 52/21 52/24 53/13 53/19 94/22 95/11 95/14 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 which [2] 43/8 102/24 will [1] 66/8 0 012 [1] 128/1 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 115/14 1999 [1] 115/25 1999/2000 [2] 6/18 7/2 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 4 4 August 2022 [1] 1/16 4 March [1] 109/1 4.1 [1] 67/1 4.1.2 [2] 66/25 67/13 4.3.2 [1] 70/1 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 52/25 53/22 53/23 54/4 54/9 54/10 59/14 68/15 71/3 71/4 72/13 74/9 75/22 77/1 77/8 77/9 78/9 78/12 78/21 79/7 81/21 82/8 82/15 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 accounting [2] 39/19 42/3 accounts [12] 52/21 52/24 53/13 53/19 94/22 95/11 95/14 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 which [2] 43/8 102/24 will [1] 66/8 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 115/14 1999 [1] 115/25 1999/2000 [2] 6/18 7/2 2 2 August 2002 [1] | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 4 4 August 2022 [1] 1/16 4 March [1] 109/1 4.1 [1] 67/1 4.1.2 [2] 66/25 67/13 4.3.2 [1] 70/1 40 [1] 115/5 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 52/25 53/22 53/23 54/4 54/9 54/10 59/14 68/15 71/3 71/4 72/13 74/9 75/22 77/1 77/8 77/9 78/9 78/12 78/21 79/7 81/21 82/8 82/15 82/17 82/20 84/11 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 accounting [2] 39/19 42/3 accounts [12] 52/21 52/24 53/13 53/19 94/22 95/11 95/14 95/16 95/19 96/12 |
| relying [1] 63/24 requiring [1] 70/23 the [1] 108/7 to [1] 64/10 which [2] 43/8 102/24 will [1] 66/8 0 012 [1] 128/1 | 1990 [1] 129/6 1996 [4] 2/8 2/9 15/11 38/13 1997 [3] 15/11 15/11 15/24 1998 [2] 114/20 115/14 1999 [1] 115/25 1999/2000 [2] 6/18 7/2 | 3.17 pm [1] 145/3 30 [2] 6/25 6/25 31 [1] 121/7 34 [1] 117/20 38 [1] 56/23 4 4 August 2022 [1] 1/16 4 March [1] 109/1 4.1 [1] 67/1 4.1.2 [2] 66/25 67/13 4.3.2 [1] 70/1 | 31/19 32/3 33/3 35/23 36/1 36/3 36/6 36/12 36/14 36/18 36/21 37/8 37/23 38/3 38/15 39/6 40/3 40/5 40/13 44/21 46/16 46/23 47/2 51/18 52/3 52/4 52/25 53/22 53/23 54/4 54/9 54/10 59/14 68/15 71/3 71/4 72/13 74/9 75/22 77/1 77/8 77/9 78/9 78/12 78/21 79/7 81/21 82/8 82/15 | 29/20 30/3 30/10 53/7 53/16 85/7 85/11 87/5 94/10 96/18 96/23 97/2 100/15 100/25 102/4 102/4 102/7 116/17 117/8 123/7 accounting [2] 39/19 42/3 accounts [12] 52/21 52/24 53/13 53/19 94/22 95/11 95/14 95/16 95/19 96/12 96/15 97/6 |

(38) MR BEER: - accurate

36/2 36/3 36/14 76/14 appearing [2] 89/24 146/4 43/15 48/6 49/4 49/22 afforded [2] 67/24 50/16 50/18 53/8 63/3 107/9 107/12 109/5 108/4 accurate... [2] 70/7 69/10 69/15 70/3 70/11 109/8 111/2 111/21 appendix [1] 59/17 72/8 afraid [3] 7/20 45/10 71/12 75/25 85/20 111/23 application [19] 2/11 **accurately [2]** 57/13 65/21 87/12 88/16 91/9 another [15] 16/11 2/16 2/19 3/21 4/16 58/2 after [27] 3/21 5/17 91/23 95/16 97/4 97/5 34/24 52/4 59/4 64/2 50/6 115/22 120/4 accusations [1] 68/6 5/18 7/7 17/15 36/18 97/9 97/13 105/3 82/2 82/3 82/6 93/2 121/10 123/16 124/21 **ACMS [1]** 6/15 38/2 39/10 63/23 107/3 107/8 114/16 94/7 97/20 99/11 124/25 125/9 126/7 across [4] 77/13 78/3 65/20 66/4 66/18 123/3 124/20 126/14 103/13 110/21 141/23 130/7 140/3 140/4 116/14 125/10 66/21 66/22 80/3 80/4 130/25 131/3 131/21 141/24 142/5 answer [11] 9/1 Act [2] 71/18 73/4 91/24 91/24 104/7 134/11 137/4 137/5 21/20 47/3 48/16 49/9 applications [5] acted [1] 16/5 107/3 107/23 111/3 137/13 139/10 139/11 50/19 54/23 59/1 79/7 47/18 124/10 142/8 action [1] 42/15 111/25 116/6 119/25 139/18 83/18 113/13 142/9 142/20 actioned [1] 103/8 136/13 138/25 allegations [1] 55/15 answered [4] 52/17 applied [2] 25/16 actions [4] 67/9 afternoon [2] 113/21 alleged [1] 106/16 52/18 58/15 73/13 133/5 72/24 126/19 137/5 answering [5] 41/4 143/11 Allen [1] 140/10 apply [4] 72/10 73/19 **activities [3]** 55/25 allow [5] 43/13 68/5 52/25 73/11 113/5 afternoon's [1] 118/16 132/6 66/14 69/17 144/21 75/12 98/24 135/12 144/19 **applying [2]** 133/10 activity [1] 142/18 again [39] 3/23 11/24 allowed [1] 50/12 answers [9] 45/14 133/11 acts [2] 68/1 69/13 allows [2] 50/3 62/24 45/19 46/1 46/3 46/6 appointed [1] 56/11 20/17 20/20 22/12 actual [5] 11/8 11/10 almost [1] 108/17 52/20 54/5 54/6 58/19 approach [3] 11/15 22/14 22/25 31/16 23/20 52/3 75/2 32/3 32/5 32/25 33/3 along [2] 35/24 36/4 anticipated [1] 87/7 11/16 67/20 actually [11] 23/5 36/25 37/4 38/9 46/14 alongside [1] 34/22 any [65] 2/18 2/22 approachable [1] 25/14 31/13 35/19 58/7 59/5 68/7 76/6 already [7] 77/22 3/5 3/9 3/12 3/14 3/19 38/19 53/10 81/7 95/6 99/8 80/14 80/22 81/3 82/7 103/19 104/3 109/9 4/14 4/21 6/15 9/11 approaches [1] 56/6 104/7 125/2 131/14 90/18 92/12 92/24 9/19 11/8 22/1 25/10 110/11 121/15 144/17 appropriate [4] 39/16 add [4] 25/20 25/20 94/6 100/18 105/16 25/23 26/2 27/15 28/1 54/1 55/22 142/24 also [31] 8/3 8/11 89/23 90/9 106/19 106/20 108/2 32/13 33/13 33/23 8/16 8/22 9/15 13/9 appropriately [1] added [5] 30/3 30/6 108/10 111/1 112/1 15/19 15/20 15/24 33/25 36/18 39/6 56/12 30/7 58/22 139/4 39/15 42/8 42/9 44/19 appropriateness [4] 112/6 141/8 141/22 16/8 16/11 26/11 addition [1] 68/5 60/7 66/15 69/16 73/9 35/24 36/4 36/19 39/7 30/20 30/22 39/5 against [10] 39/18 additional [2] 50/9 48/15 51/19 68/6 42/20 59/5 60/2 66/12 79/21 81/12 82/15 approval [1] 57/18 137/2 75/15 81/12 117/15 68/16 73/16 87/4 87/5 85/9 87/25 89/5 90/6 approved [3] 102/6 address [1] 103/25 125/7 137/6 143/17 90/12 95/16 97/1 97/3 118/1 128/20 89/25 106/20 119/7 addressed [1] 119/8 125/11 126/21 agent [2] 69/20 100/1 103/15 105/21 approximately [1] 121/16 131/25 132/9 132/23 106/2 108/16 109/10 93/20 addresses [1] 115/20 agents [1] 6/12 alternative [1] 67/20 112/23 112/25 114/18 Apps [3] 130/6 adjourned [1] 145/4 **AGL [1]** 15/4 although [1] 140/24 120/9 120/9 128/9 132/18 132/22 adjournment [1] ago [1] 93/20 appsup [23] 49/15 always [1] 19/22 131/3 132/2 139/6 113/19 am [13] 1/2 2/5 9/24 139/24 141/6 141/6 49/22 49/23 50/1 50/2 agree [13] 17/21 **admin [2]** 67/23 18/11 64/12 69/8 33/13 54/17 54/19 142/16 142/16 144/13 50/3 50/5 50/8 50/12 137/4 69/11 72/21 73/1 73/6 58/18 91/4 91/11 **anybody [2]** 123/13 50/13 50/14 74/9 administer [5] 63/10 91/25 92/15 121/22 109/20 118/11 143/22 133/10 75/16 75/21 76/22 63/12 64/10 134/14 77/6 77/16 77/17 121/24 127/22 145/4 anyone [6] 27/22 134/16 agreed [3] 66/13 95/4 amend [1] 52/21 87/24 97/15 113/1 80/11 81/3 81/11 administration [4] 123/11 133/2 82/25 83/15 95/9 **amended [3]** 53/13 62/18 83/12 134/10 agreement [6] 86/17 **anything [9]** 31/3 **April [2]** 88/24 90/9 53/19 75/25 137/18 32/17 36/21 46/5 54/9 APS [5] 69/14 84/8 86/19 87/2 87/3 87/10 amending [3] 52/23 Administrator [1] 87/18 76/3 95/13 58/10 90/21 104/4 84/12 84/12 84/14 64/16 **AI [1]** 97/7 amendment [1] 104/8 architect [4] 46/11 adopt [1] 67/20 aiming [1] 102/25 41/20 **Anyway [1]** 62/16 58/14 82/18 129/5 adopted [1] 102/16 Alan [10] 116/2 116/4 ammunition [1] architects [4] 39/4 **anywhere [2]** 49/8 advice [2] 18/6 25/8 116/6 128/1 128/8 101/12 140/19 128/15 129/2 129/7 advise [2] 78/2 110/5 128/10 129/3 129/24 amongst [2] 61/4 **apart [1]** 104/4 architecture [1] advised [1] 90/11 130/1 132/16 62/22 **Apologies [1]** 104/2 38/16 advisory [1] 40/23 albeit [1] 102/7 amount [2] 3/20 apologise [1] 117/21 archive [31 23/17 affect [2] 29/23 68/2 alert [2] 47/6 85/21 **APOP [2]** 79/4 79/4 23/18 125/13 26/12 affected [8] 74/20 alerted [3] 87/12 analyse [1] 35/4 APOP-Host-Dev [1] archived [5] 22/19 79/15 86/15 88/12 87/19 88/3 analysed [1] 101/5 79/4 22/20 23/1 23/9 23/15 97/6 99/19 102/11 alerts [1] 94/23 analysis [3] 24/15 apparent [1] 88/2 archiving [5] 23/4 104/14 all [52] 4/12 6/14 26/11 26/25 apparently [1] 23/5 23/7 23/8 94/8 affecting [1] 124/21 **Andrew [1]** 114/4 26/13 30/5 30/7 31/15 107/16 are [86] 1/20 1/20 affects [1] 109/18 32/15 35/5 36/23 1/23 5/20 10/14 10/15 **Angela [1]** 97/19 appear [1] 95/24 **affirmed [2]** 1/8 41/10 42/17 42/18 **Anne [13]** 34/5 35/16 appeared [1] 72/16 12/16 12/20 12/22

are... [77] 14/25 22/8 30/6 37/19 39/15 39/21 41/2 42/1 44/17 45/13 45/14 50/18 51/16 51/20 51/22 53/4 54/6 55/18 56/7 57/13 57/23 58/2 59/4 61/9 67/3 67/11 70/20 72/9 72/17 75/11 75/19 76/4 76/7 78/16 78/17 78/24 82/25 84/13 84/14 84/16 85/13 88/20 89/3 89/24 92/6 93/7 94/25 95/6 97/14 99/15 100/5 101/10 102/15 102/22 102/25 104/13 105/7 107/16 108/24 112/9 112/25 114/11 119/2 119/18 120/8 123/11 126/22 129/25 130/13 131/6 131/7 140/5 141/5 144/12 144/13 144/16 144/17 area [11] 26/10 33/16 33/18 35/1 36/11 38/17 38/18 39/5 57/12 125/22 141/2 areas [11] 6/10 6/13 6/16 35/7 67/1 67/3 70/4 72/7 72/9 86/14 126/16 aren't [1] 75/10 arisen [2] 16/9 95/5 arising [4] 28/6 28/9 54/22 65/10 arose [1] 97/24 around [15] 6/25 6/25 24/1 56/4 57/22 105/18 108/13 109/18 115/5 118/18 121/2 123/21 123/25 124/5 138/25 **ARQ [1]** 127/7 arrangement [1] 34/20 article [8] 39/21 40/1 40/4 116/25 117/2 117/3 143/16 144/8 articles [4] 40/2 117/5 117/17 144/3 articulating [1] 57/22 as [148] **Ascott [8]** 113/23 113/24 114/1 114/4 137/17 143/13 144/16 146/8 ascribe [1] 92/21 ask [20] 1/11 1/25 5/13 15/25 19/10 20/12 20/16 54/4 79/23 79/23 84/22

85/14 86/13 97/20 97/23 99/11 114/2 114/3 140/9 142/2 asked [18] 35/9 35/16 38/1 43/18 45/3 45/7 45/11 46/2 58/17 73/12 82/9 82/11 83/17 83/19 99/3 99/23 113/10 124/23 asking [7] 4/9 10/24 23/25 82/8 114/15 114/16 137/25 asks [1] 89/6 aspect [1] 133/8 aspects [1] 2/18 **assertion [2]** 57/14 57/25 assessing [1] 122/23 assessment [1] 57/7 assessments [1] 122/14 assigned [2] 114/25 115/12 assignment [1] 115/4 assist [4] 18/25 41/15 130/15 136/22 assisting [1] 115/7 associated [4] 55/18 55/24 127/10 130/20 **assuming [1]** 62/16 assurance [7] 44/4 56/12 56/15 56/18 57/2 57/3 57/4 at [152] atomic [2] 42/15 42/17 atomically [1] 53/9 attacks [2] 115/18 115/19 attend [1] 124/18 attendee [1] 98/4 **attendees** [1] 124/18 attending [1] 124/6 attention [1] 103/7 attributable [1] 31/20 attribute [1] 28/13 attributed [1] 91/11 attributes [5] 28/12 28/14 28/17 28/20 128/4 audit [43] 23/12 23/13 40/23 42/21 49/8 50/18 50/21 51/4 57/14 58/3 58/5 65/7 67/23 68/5 68/18 68/20 71/8 72/1 72/18 away [9] 22/19 22/25 80/22 81/2 82/4 82/14 82/18 82/19 82/20 125/13 125/13 126/17 126/18 126/21 127/2 127/3 127/7 136/4 136/7 136/9 136/13 back [44] 9/13 10/6 136/16 137/5 137/8

137/10 139/24 Audit-Dev [1] 125/13 auditable [7] 63/3 69/1 69/6 69/7 80/19 80/21 134/11 audited [4] 42/13 43/16 67/8 135/12 auditing [3] 42/14 68/23 135/24 audits [1] 43/1 August [8] 1/16 74/8 83/4 114/8 114/20 115/3 116/18 133/16 August 1998 [1] 114/20 August 2005 [1] 116/18 authentication [5] 70/17 130/11 130/12 130/16 135/24 authored [3] 128/2 129/24 132/16 authorisation [2] 64/19 71/6 authorise [1] 48/10 authorised [2] 48/4 48/9 **authority [1]** 115/8 authors [2] 70/2 72/16 auto [2] 125/22 126/5 Auto Config [1] 126/5 automated [6] 27/1 50/12 88/14 94/16 94/19 96/21 automatic [1] 72/17 automatically [5] 51/4 78/14 82/14 94/21 95/20 available [7] 13/21 13/24 122/8 132/22 136/5 139/9 139/21 aware [38] 9/24 11/16 17/7 33/13 34/1 35/9 35/13 39/6 39/16 because [36] 10/25 39/20 39/21 39/23 56/20 69/14 74/3 74/25 83/11 84/25 85/5 85/8 85/12 104/9 104/10 104/13 117/2 117/4 118/11 119/5 123/11 123/13 123/18 73/11 74/3 79/7 80/9 123/20 123/21 133/4 136/14 141/5 141/11 143/22 23/1 34/20 107/10 107/12 109/2 124/23 141/15 **BA[1]** 102/3

24/11 24/13 27/21 27/23 29/6 33/9 36/22 36/24 40/25 41/20 42/18 44/2 44/22 52/6 65/10 74/10 83/16 85/21 86/4 86/6 90/4 94/11 94/12 94/13 94/23 94/25 95/1 97/8 105/20 106/3 106/19 106/23 108/15 111/20 113/9 122/25 124/15 139/15 144/23 backward [1] 73/8 **BAL [1]** 42/4 **balance [6]** 58/5 100/9 100/16 101/17 102/7 110/6 balancing [9] 22/9 26/23 41/16 41/23 41/25 42/7 57/19 110/4 120/10 balancing/correcting **[1]** 42/7 **Bank [1]** 115/4 banking [2] 68/3 69/15 **Barclays** [1] 115/4 Barry [1] 129/17 based [10] 9/5 13/12 35/7 43/4 83/1 87/17 basic [6] 3/25 4/2 4/13 4/15 4/16 14/14 basically [1] 77/11 basis [11] 10/9 10/17 10/24 11/24 34/17 37/17 67/19 91/3 92/9 96/2 140/2 batch [1] 121/8 **BBC** [1] 143/22 be [190] Bear [1] 131/12 became [6] 5/22 7/6 39/23 46/1 48/6 60/20 being [54] 2/21 2/24 11/12 19/12 19/22 21/3 23/11 23/14 23/25 25/12 25/15 32/1 32/6 33/16 33/17 33/18 36/10 40/10 46/2 47/18 53/15 82/19 88/2 89/4 89/8 89/9 95/5 98/18 100/22 101/18 110/22 124/14 131/19 become [3] 35/9 88/2 123/20 been [99] 9/21 10/18 10/23 20/15 22/19 23/1 23/6 23/9 29/2 29/18 30/19 33/14 38/12 38/25 42/3 66/16

10/15 10/25 11/22

44/11 45/7 45/11 45/16 46/24 51/10 51/16 51/24 52/1 52/4 53/13 53/19 56/11 60/23 61/19 64/16 64/19 64/24 66/4 67/15 75/3 75/14 75/15 76/15 77/10 79/14 80/17 82/11 86/20 88/23 89/25 90/14 91/8 92/4 92/8 93/25 95/20 96/8 96/19 97/5 104/13 109/17 110/10 110/12 111/7 111/12 113/10 115/7 117/3 117/8 117/10 117/16 117/17 118/6 118/10 118/19 121/21 123/6 123/7 123/8 123/9 123/21 124/2 124/2 124/3 126/10 126/14 126/17 127/1 129/14 129/16 132/1 133/14 133/25 135/1 138/16 138/19 138/22 139/2 139/16 143/24 144/1 144/10 144/17 **BEER [6]** 1/9 1/10 24/23 54/6 54/13 146/5 88/7 88/9 119/2 133/6 before [19] 5/22 25/6 25/7 25/19 35/19 35/22 45/7 45/12 75/22 77/13 79/21 89/15 90/12 92/23 109/12 110/6 110/18 113/8 121/6 began [2] 99/4 99/24 beginning [4] 15/11 38/11 74/10 143/14 begins [1] 93/4 behalf [2] 1/11 114/2 behind [1] 69/4 3/1 4/2 4/25 5/3 11/14 19/2 22/7 25/25 29/8 33/24 35/9 38/1 46/3 56/20 59/10 59/12 59/23 60/10 65/15 66/11 68/9 68/16 69/3 73/7 78/10 78/23 82/13 86/3 86/6 88/5 88/14 97/10 98/24 101/19 106/19 107/14 108/2 121/3 122/1 123/1 123/2 124/19 125/24 132/11 134/3 134/22 135/12 136/11 137/14 139/14 139/25 140/21 Belfast [5] 63/17 63/19 63/19 63/22

109/25 125/25 В 127/15 **box [4]** 57/12 64/15 built [6] 15/4 121/3 calls [16] 3/9 3/11 belief [8] 1/22 10/17 64/20 137/16 123/2 123/2 123/4 3/13 21/5 21/7 22/7 10/24 11/24 11/25 boxes [2] 63/4 125/24 26/22 43/8 67/15 114/12 114/13 116/6 134/11 bullet [1] 52/7 beliefs [1] 10/10 **bullets [1]** 101/6 **brackets [1]** 44/13 92/6 92/9 92/11 believe [41] 4/23 5/7 Bracknell [4] 9/7 bundle [1] 59/11 came [6] 21/5 33/20 5/16 8/21 9/4 10/6 15/13 15/15 116/13 **bundles** [1] 114/6 40/6 87/20 96/23 10/15 11/20 11/21 **Bramble [1]** 60/8 business [10] 9/14 129/13 19/4 19/10 29/20 33/17 56/4 56/7 71/18 can [157] branch [36] 41/12 30/20 31/4 36/15 42/1 42/12 43/7 43/12 79/14 114/20 122/12 can't [17] 12/10 28/1 36/17 36/23 36/24 43/14 46/23 47/5 122/23 144/22 32/5 33/8 33/10 34/6 37/12 37/14 44/9 47/13 47/22 48/13 but [124] 4/25 5/4 35/15 45/10 69/16 50/20 51/24 63/6 72/1 53/5 53/6 53/16 53/22 6/13 6/24 6/25 9/15 82/3 82/4 82/4 88/5 80/20 80/20 80/22 54/10 55/2 55/3 55/4 9/16 10/5 12/11 15/24 92/1 92/17 107/19 80/24 81/3 85/15 55/7 55/8 55/19 57/13 19/4 19/22 20/10 141/9 96/17 99/19 109/9 20/22 21/2 21/8 21/12 Canary [1] 115/6 58/2 100/19 100/20 117/11 126/20 127/9 101/1 102/6 103/16 23/7 23/12 25/6 29/13 Cancel [1] 100/12 133/24 134/6 135/9 103/20 104/6 106/10 30/22 31/23 32/11 candidates [1] 37/19 136/2 108/21 110/2 111/16 32/24 33/8 34/7 34/13 cannot [8] 10/4 36/17 believed [1] 117/14 35/15 36/17 36/22 133/3 52/16 90/16 92/15 **Belinda [5]** 129/4 branches [8] 31/10 40/9 40/12 41/3 45/6 92/16 105/21 108/16 129/5 129/6 129/17 55/17 99/19 101/8 46/4 50/6 50/12 51/1 canteen [1] 124/4 101/10 101/12 102/12 51/3 51/13 53/2 58/15 capitals [2] 89/10 **below [3]** 6/9 57/4 104/13 59/11 61/3 64/15 89/19 98/6 64/21 64/23 65/14 **Braro [1]** 140/25 capture [2] 33/25 **benefit [2]** 26/16 65/18 66/12 68/18 **Braro 1 [1]** 140/25 135/23 26/19 71/5 71/6 71/24 72/8 **BRDB [2]** 42/10 captured [4] 50/24 best [5] 1/21 21/20 42/11 73/19 77/24 78/9 136/7 136/11 137/10 107/22 114/11 114/13 breach [1] 65/16 80/10 80/14 80/22 card [3] 68/3 127/10 between [15] 4/15 break [8] 54/2 54/18 81/13 82/22 83/16 127/11 9/4 11/5 31/9 36/2 85/17 85/24 113/3 84/9 86/20 87/18 carefully [1] 24/16 80/6 105/15 106/14 87/23 88/7 91/13 113/8 142/25 143/9 carried [4] 14/10 108/8 110/17 115/13 67/10 126/22 137/6 Brian [2] 106/6 106/7 91/25 92/1 92/15 94/2 130/22 133/2 133/9 bring [4] 117/19 95/16 95/18 95/22 Carroll [2] 91/7 91/22 135/22 carry [4] 79/9 90/15 128/5 131/14 138/7 96/10 97/8 97/11 99/1 biased [2] 117/15 British [1] 2/5 99/20 100/18 101/17 100/13 106/15 143/17 103/15 103/21 107/10 carrying [1] 106/13 broke [1] 28/12 **Bill [1]** 84/13 109/15 109/23 111/9 case [9] 4/24 12/9 broken [4] 12/11 **BIMs [1]** 9/14 111/23 112/4 114/15 23/2 46/18 49/1 12/13 13/5 35/10 **Bird [2]** 7/18 7/18 brought [4] 15/5 116/2 116/13 117/5 37/14 81/23 88/16 Birmingham [1] 2/5 93/13 103/6 104/5 117/11 117/14 118/13 94/5 bit [23] 19/12 38/15 BSU [8] 10/7 11/22 118/14 120/23 122/13 cases [5] 67/9 87/7 52/7 56/25 60/13 67/1 12/5 12/8 21/10 21/12 122/22 124/20 127/11 91/9 101/9 144/9 73/25 73/25 78/1 30/23 95/10 128/13 131/15 131/24 cash [27] 29/19 89/10 89/16 90/8 132/12 133/18 134/21 29/19 30/3 30/10 **BSU/MSU [2]** 10/7 90/15 91/6 95/3 99/1 139/6 139/13 139/18 52/21 52/23 53/6 11/22 100/8 105/3 106/3 **BTS** [1] 53/7 140/13 141/15 141/24 53/13 53/16 53/19 106/25 107/21 107/25 bug [8] 42/4 78/7 142/9 142/22 143/2 85/7 85/11 87/5 94/9 108/3 99/6 99/13 100/3 143/24 144/7 144/11 94/22 95/11 95/13 blame [1] 101/12 100/5 112/13 112/15 **BZW [1]** 115/10 95/15 95/19 96/11 **BOC [4]** 63/14 63/15 bugs [4] 17/18 18/15 96/15 96/18 96/22 66/16 134/14 97/2 97/6 100/15 26/21 97/24 **bold [1]** 52/7 cable [1] 31/10 100/24 build [7] 122/24 **Bootle [1]** 131/8 call [20] 30/22 32/22 126/2 127/13 127/14 catered [1] 132/1 **both** [5] 43/1 73/14 74/17 79/3 84/1 87/8 129/14 129/24 130/3 cause [19] 3/23 76/23 77/24 78/3 89/11 89/18 89/21 26/25 28/21 28/22 **building [1]** 70/13 bottom [21] 22/11 90/23 91/4 91/12 **buildings** [2] 14/25 29/4 29/5 29/7 29/10 22/23 23/22 23/24 91/23 94/7 95/1 29/21 30/11 31/19 116/12 24/5 24/8 24/20 38/5 107/23 109/21 109/23 32/14 55/19 69/20 builds [9] 30/4 30/9 40/21 59/19 92/22 113/23 125/24 91/10 93/20 93/22 116/1 116/11 120/25 98/6 99/2 101/4 called [10] 5/10 6/14 125/4 127/15 127/17 96/2 101/7 101/22 104/21 104/23 6/16 8/17 17/13 28/15 caused [11] 29/13 128/23 105/3 105/5 106/24 114/20 121/17 124/13 30/15 31/4 32/25

Builds-Dev [1]

110/5 119/12 141/6 causes [1] 31/8 causing [1] 72/24 67/16 87/14 88/7 88/9 cent [3] 21/5 21/7 21/9 central [4] 17/14 18/14 53/5 121/21 centre [31] 5/10 5/11 5/13 5/15 5/17 5/18 16/2 16/17 16/24 18/5 55/9 62/18 63/17 63/19 63/20 66/16 66/18 66/19 66/20 70/15 87/8 88/15 114/21 114/25 115/13 120/21 130/18 132/6 132/7 134/10 139/5 centres [5] 17/15 63/23 131/7 132/13 133/12 certain [5] 6/13 57/5 75/13 82/4 135/23 certainly [4] 124/7 129/5 129/11 140/24 **certainty [1]** 112/8 cetera [1] 90/7 **chain [10]** 10/16 41/3 41/4 44/22 76/12 83/4 88/4 106/4 106/5 111/20 **Chairman [1]** 54/23 **Chambers [7]** 34/5 36/14 76/14 107/10 109/5 109/8 111/22 Chambers' [1] 76/25 **chance [2]** 107/2 124/9 change [14] 8/21 48/4 48/8 49/25 57/18 66/7 75/1 81/25 83/14 137/23 137/24 138/2 138/4 138/7 changed [8] 5/18 23/4 23/7 23/9 51/11 51/16 83/14 143/19 changes [14] 17/17 43/2 44/19 48/5 48/6 50/18 92/14 132/6 132/10 136/13 136/14 137/14 138/16 139/20 **Chartered** [1] 2/6 chat [1] 124/4 check [9] 15/25 19/11 35/5 50/9 106/15 109/22 111/2 111/8 144/12 checked [4] 94/21 107/24 139/9 139/11 checking [1] 64/11 checks [4] 70/6 70/11 96/21 126/1 chief [3] 39/3 39/4 129/8

83/17 87/5 87/6 94/8

C 94/11 94/12 100/10 21/4 22/14 22/23 23/2 Config [4] 126/1 contributed [1] 109/8 126/2 126/3 126/5 129/11 23/4 23/7 23/8 23/12 chit [1] 124/4 contribution [3] 74/5 comfort [2] 57/7 configuration [4] 24/2 24/23 25/20 chit-chat [1] 124/4 57/23 75/24 125/23 140/7 78/19 83/3 29/12 29/23 30/21 **chronology** [1] 86/22 coming [3] 68/21 140/8 control [14] 26/15 31/8 31/9 40/8 40/12 **Cipione [1]** 28/12 configure [1] 142/13 68/24 144/18 55/22 55/25 56/2 56/7 40/16 41/14 45/18 circumstances [1] 57/18 57/22 82/13 47/13 47/14 52/21 command [2] 62/25 configuring [1] 115/9 91/9 125/6 127/24 129/10 63/18 69/19 69/21 64/3 confining [1] 54/6 claims [1] 140/20 commands [3] 62/23 **confirm [2]** 13/23 132/23 133/1 133/7 72/22 73/19 77/13 **clarify [3]** 43/19 62/25 139/14 80/10 80/15 82/3 91/14 controllers [1] 58/14 93/1 commencing [2] confirmation [1] 138/19 82/22 82/24 88/1 92/5 clear [9] 15/20 54/4 44/10 92/22 93/2 99/17 103/1 103/2 controlling [1] 70/23 75/13 87/1 87/4 90/19 comment [8] 10/4 100/13 101/7 101/12 confused [1] 78/21 **controls** [5] 56/4 95/23 106/12 141/16 11/19 61/2 61/20 connect [7] 64/5 64/7 59/7 70/20 72/17 101/18 106/1 107/12 cleared [2] 102/8 91/24 92/1 92/16 64/8 64/19 65/19 133/11 110/21 114/3 114/23 104/7 92/17 84/10 126/3 **convenient [1]** 113/2 117/18 119/14 119/25 clearing [1] 77/10 connecting [1] 70/14 120/16 122/4 122/5 comments [2] 61/6 conversation [4] clearly [4] 92/4 36/1 36/2 36/17 40/13 122/6 122/7 122/11 107/13 connection [1] 105/22 123/3 138/1 commit [3] 62/24 conversations [5] 124/12 124/23 124/25 135/22 client [5] 11/5 64/2 3/19 36/6 126/8 127/7 128/5 128/19 68/1 69/12 connections [1] 135/19 135/20 135/22 130/4 130/15 132/21 committed [1] 55/20 50/16 126/10 138/5 close [5] 34/19 85/20 communicated [3] connects [2] 49/15 convicted [1] 97/21 133/13 134/1 134/23 91/19 92/9 95/9 9/21 9/25 10/23 49/20 convinced [1] 105/25 135/10 135/16 137/17 closed [3] 89/11 91/2 communicating [1] coordinated [1] 137/20 139/13 141/16 consequences [2] 92/11 110/16 67/11 67/23 121/11 141/17 142/13 closely [5] 34/14 consider [2] 56/12 copied [1] 8/22 couldn't [12] 12/21 communication [2] 34/15 38/14 88/23 14/14 20/2 21/2 21/8 57/21 102/6 109/5 copy [3] 1/24 4/23 118/12 communications [1] considerable [2] 140/22 33/18 65/21 78/14 closing [2] 91/4 9/23 63/8 134/12 copying [1] 141/17 82/1 82/19 99/21 91/11 console [9] 62/17 123/4 **community** [1] 81/10 **core [1]** 117/8 closure [2] 92/16 counter [31] 28/18 **complaint [1]** 89/23 62/23 62/24 63/9 **corporate** [1] 70/15 95/4 correct [47] 2/12 complete [4] 30/6 65/13 66/9 132/3 32/2 32/2 35/8 42/4 code [16] 3/9 3/11 68/5 70/22 128/19 132/4 134/9 5/11 5/21 7/11 7/15 71/12 89/25 107/3 4/18 4/22 4/23 85/6 **completed [2]** 103/3 constant [1] 22/8 11/7 14/12 15/22 16/3 110/20 110/22 111/16 85/6 85/10 98/24 16/21 17/2 20/19 120/11 120/18 120/20 115/3 construction [1] 102/22 103/12 103/14 complex [2] 122/16 58/11 35/21 44/18 50/13 124/3 125/25 126/2 136/14 140/15 141/6 126/5 127/21 131/20 122/19 consultant [1] 40/22 51/5 53/8 54/10 55/8 141/14 60/22 61/11 62/4 132/15 133/3 133/9 **complexity** [1] 138/3 **contact [8]** 14/5 coding [7] 2/20 2/23 32/10 34/16 38/20 63/23 64/9 69/2 71/9 135/13 140/19 140/21 component [1] 3/3 3/15 4/2 17/17 44/21 87/15 110/3 74/13 75/8 78/17 140/25 141/8 141/11 135/19 29/4 computer [11] 2/5 111/16 83/25 96/1 96/9 96/13 141/14 141/14 **collating [1]** 97/1 39/21 39/25 40/3 40/4 contacted [4] 32/22 98/13 101/23 103/9 Counter/BAL [1] colleagues [2] 93/7 62/24 63/1 116/25 32/22 33/19 50/8 103/10 103/21 104/12 42/4 93/13 104/15 110/15 112/18 counters [28] 31/9 117/4 143/15 144/8 contained [1] 127/7 collect [1] 126/25 **computers [3]** 70/14 112/21 114/22 116/21 34/10 34/25 35/1 35/2 contains [1] 61/6 **collected [2]** 121/13 122/14 136/5 60/19 64/5 64/7 64/8 132/15 133/3 contemporaneous 125/17 70/24 89/2 110/16 **corrected [3]** 95/11 Computing [3] 117/4 **[1]** 39/15 collecting [1] 125/14 117/13 117/13 content [3] 58/25 95/15 96/18 111/19 118/11 119/21 collection [1] 41/8 concentrated [1] 60/7 108/17 correcting [1] 42/7 119/22 120/14 125/24 Collectively [1] 56/5 126/23 131/5 131/6 132/12 contents [4] 1/21 **correction [7]** 42/14 column [3] 130/11 concern [2] 67/2 58/11 59/14 114/11 42/25 43/1 46/23 48/1 131/10 131/22 132/10 130/16 132/20 context [4] 54/24 77/14 77/15 132/11 133/5 136/1 67/3 columns [1] 129/25 concerned [4] 90/20 86/21 124/16 134/18 **corrections [1]** 44/17 140/1 combination [3] 105/22 110/1 130/24 couple [8] 15/9 15/12 continue [2] 22/12 **correctly [3]** 53/11 119/17 119/21 122/4 concerning [1] 107/23 78/10 78/17 34/20 41/12 45/4 46/2 come [23] 2/15 23/21 123/15 continued [1] 116/11 **correspond** [1] 44/13 55/13 85/17 23/23 24/11 24/13 concerns [1] 128/18 course [12] 1/7 24/25 **continues** [1] 63/2 correspondence [4] 32/8 32/9 40/16 47/1 concluded [1] 92/19 **continuing** [1] 110/6 63/9 131/24 131/25 39/12 65/2 83/3 99/5 47/13 47/14 69/5 concludes [1] 144/21 134/13 99/25 113/6 116/2 contractual [3] 65/9 77/13 85/21 88/3 conclusion [1] 92/2 corrupt [1] 31/21 127/24 141/23 144/25 65/16 66/12 105/20 106/18 108/15 court [6] 12/9 12/13 conduct [1] 13/13 contrary [2] 74/21 **corrupted** [1] 33/3 109/8 113/9 116/16 cost [1] 43/3 confidence [1] 101/8 79/16 35/10 89/8 115/6 121/6 122/25 could [84] 5/6 5/8 contravention [2] **confident [2]** 55/24 144/9 comes [6] 35/3 88/17 16/9 18/20 20/16 21/3 covered [1] 131/2 108/24 65/8 66/11

C **covers** [1] 56/13 **CP [1]** 66/5 **CPs [1]** 97/16 **create [3]** 119/23 120/17 137/5 created [9] 51/11 120/20 123/18 128/3 132/19 132/23 134/22 135/5 140/6 creating [1] 120/15 creation [6] 51/13 51/25 75/24 77/25 78/8 135/8 creation/configuratio n [1] 75/24 **credit [1]** 127/10 **criminal** [1] 39/18 **criticised [2]** 117/1 117/9 cryptographic [2] 71/18 72/13 cure [1] 108/23 current [5] 55/21 67/4 67/18 89/23 103/15 currently [5] 5/20 9/14 52/9 74/23 89/24 custom [1] 15/4 **customer [6]** 18/5 27/9 74/25 95/6 96/10 102/4 **customers** [1] 115/3 cut [1] 76/15 cycle [1] 125/21 Cygwin [1] 135/15 cynical [2] 109/23 112/9

D'Alvarez [6] 116/3 116/4 128/2 128/8 129/3 131/9 **Dai [7]** 2/20 2/22 3/2 3/12 3/14 3/19 3/22 daily [1] 34/16 damage [3] 69/19 110/10 111/11 data [52] 10/2 17/7 17/10 17/15 23/9 42/3 52/12 55/9 62/18 63/23 66/18 66/19 66/20 70/15 70/24 71/17 71/17 71/18 73/4 82/13 87/5 88/15 101/10 120/5 120/6 120/20 120/20 121/12 125/9 125/10 125/12 125/14 125/17 125/20 126/4 126/24 127/1 127/7 127/8 127/11 130/17 130/22 131/7 132/6 132/7 132/13

133/12 134/10 136/7 136/10 137/10 139/4 database [62] 6/15 18/9 18/10 30/21 41/12 41/20 42/1 42/8 defend [1] 68/6 42/9 42/12 42/17 43/7 43/11 43/12 43/14 44/12 44/15 44/20 46/10 46/10 47/22 48/13 49/14 49/18 49/19 50/4 50/11 50/22 51/18 51/20 52/13 53/5 53/6 53/17 53/22 54/10 55/2 55/3 55/4 55/8 58/14 69/20 74/13 74/21 75/8 75/19 76/9 78/1 78/13 79/5 79/8 79/16 84/12 definitions [4] 94/21 120/5 120/21 123/12 125/10 125/23 125/23 126/5 126/25 databases [2] 6/12 66/20 DataServer [1] 96/5 date [4] 7/2 8/16 35/15 98/18 dated [3] 1/16 114/7 133/15 **Dave [1]** 44/3 **Davidson [2]** 45/1 45/2 day [1] 78/9 **De [2]** 130/20 130/23 **De La Rue [2]** 130/20 130/23 deadline [2] 45/17 46/8 deal [3] 25/8 116/16 141/20 dealing [4] 27/22 60/20 75/9 96/24 dealings [2] 20/18 142/16 dealt [3] 34/10 37/13 96/16 debit [2] 68/3 127/10 **December [1]** 115/14 December 1998 [1] 115/14 decide [1] 26/9 decided [1] 96/14 decision [1] 92/20 decisions [1] 19/25 decode [1] 76/6

decoding [1] 130/15

dedicated [2] 27/9

deep [1] 96/5

default [4] 75/21

79/22 80/9 80/10

defect [2] 121/25

defective [1] 55/17

defects [13] 8/3 9/19

119/7

123/9

10/21 11/16 17/18 designed [4] 53/9 18/15 25/14 26/21 97/25 119/11 121/15 121/20 122/25 deferred [1] 128/16 deficiencies [1] 28/5 defined [2] 50/14 71/17 defining [2] 125/4 125/6 definitely [10] 20/14 22/10 23/4 23/18 38/25 59/2 81/14 88/8 detailing [2] 51/23 94/3 95/13 **definition [3]** 119/17 120/7 132/17 125/17 128/11 129/23 detected [1] 97/10 130/2 delay [3] 99/12 100/2 detection [2] 94/16 143/2 delete [1] 42/9 deliver [4] 55/25 56/8 76/20 102/25 delivered [3] 42/25 75/12 75/14 delivering [4] 132/12 138/16 140/8 141/10 **Deloitte [14]** 40/23 45/22 45/24 55/11 56/11 57/2 58/25 59/5 27/16 27/24 139/23 59/6 59/13 59/18 59/22 59/23 60/8 demonstrate [1] 52/8 development [27] demonstrating [1] 55/20 **depending [1]** 16/23 depends [1] 47/12 deployable [1] 139/1 deployed [1] 67/21 deployment [1] 139/1 depth [1] 114/18 describe [1] 48/8 described [8] 11/14 52/22 73/7 124/19 125/8 131/18 132/25 135/17 describes [1] 41/20 describing [4] 48/7 48/17 72/12 135/14 description [5] 16/4 57/16 58/4 94/4 120/23 design [23] 11/15 41/11 41/21 56/6 57/22 60/17 65/22 66/1 66/10 115/8 118/16 118/18 123/25 128/17 128/21 129/20 129/21 129/22 131/23 132/1 133/15 137/25 141/14

56/1 56/8 135/4 designers [3] 122/8 122/17 124/2 **designing [1]** 129/13 designs [3] 128/18 128/20 128/20 desk [4] 14/11 139/9 139/11 142/21 desks [2] 34/20 34/21 detail [5] 47/1 75/9 118/22 134/20 136/10 details [6] 45/7 45/12 53/6 53/7 53/7 61/9 detect [1] 111/11 detecting [1] 58/18 94/19 **Dev [7]** 79/4 93/15 93/16 125/13 125/18 127/15 127/17 develop [1] 2/18 **developed [4]** 67/18 128/22 138/12 140/21 **developer** [5] 2/11 2/17 2/20 3/22 119/11 developing [8] 26/24 140/14 141/7 141/10 142/7 4/1 4/19 8/1 11/16 17/16 26/13 38/16 47/23 47/25 75/12 76/18 77/25 78/8 79/1 difficulty [3] 22/22 79/5 98/15 99/7 116/1 23/19 141/6 116/9 116/12 118/16 139/19 140/25 141/8 device [1] 132/5 devices [1] 115/20 devise [1] 53/11 diagnose [1] 119/11 **diagnostic** [1] 71/15 diagnosticians [1] 67/19 diagram [2] 135/11 135/14 **Diane [1]** 94/13 did [90] 2/18 3/2 3/22 4/5 4/9 7/12 8/8 8/10 8/12 8/24 9/8 11/8 19/9 19/24 20/1 22/22 99/6 103/6 23/15 25/19 27/21 27/21 27/22 32/1 34/14 34/19 35/9 36/16 37/4 37/9 37/11 38/8 38/14 38/24 45/4 45/6 45/13 45/19

46/22 51/1 55/2 58/7 64/4 64/6 64/24 65/19 68/7 68/9 68/20 69/10 72/6 83/8 84/3 84/10 87/24 88/7 88/8 88/9 91/21 91/22 96/25 107/2 110/19 110/20 111/23 113/14 113/17 116/10 116/19 116/23 118/11 118/24 120/8 120/13 123/20 124/17 128/8 128/17 129/22 131/1 132/3 134/4 139/3 139/24 140/10 140/12 141/19 142/3 didn't [31] 19/4 33/17 36/23 40/10 55/5 58/24 63/6 68/22 69/3 69/12 71/6 71/23 71/23 71/25 72/1 72/2 72/7 73/9 80/22 81/12 96/24 100/17 100/18 100/25 118/13 118/14 118/19 136/10 141/12 141/24 142/16 different [15] 22/3 28/14 31/21 33/16 33/18 33/22 34/4 75/19 76/7 79/3 83/9 84/11 84/14 84/16 86/14 differently [3] 46/5 58/10 144/10 difficult [7] 23/14 53/3 53/16 63/10 63/12 71/1 134/14 difficulties [3] 28/6 28/9 29/4 digitally [1] 69/15 121/17 123/25 136/12 dimensions [2] 61/5 61/23 direct [9] 6/3 8/24 41/14 44/12 44/14 44/19 53/2 118/13 118/14 direction [1] 141/15 directive [1] 141/13 directly [1] 56/2 disagree [2] 131/10 131/11 disappearing [3] 89/24 102/24 108/4 disconnected [1] 107/20 12/4 14/17 15/15 17/9 discovered [3] 98/13 discrepancies [2] 96/23 101/13 discrepancy [11] 29/14 29/22 29/23 30/15 30/25 31/18 100/10 100/14 102/3

62/1 62/6 65/23 65/24 37/12 37/16 37/18 124/14 136/4 D 66/4 66/10 70/1 84/19 37/21 37/25 40/7 40/8 easier [1] 122/22 enough [1] 69/7 discrepancy... [2] 84/22 88/17 97/11 40/10 40/12 42/18 easily [1] 122/15 ensure [4] 4/1 42/14 102/8 102/24 42/20 111/8 97/13 97/25 98/19 44/6 45/3 46/3 49/21 **Echo [1]** 139/13 discuss [5] 3/2 45/6 104/16 127/15 128/1 59/11 59/23 60/10 EDSC [3] 15/6 74/18 ensured [1] 37/4 58/24 116/2 128/18 128/2 128/6 129/1 61/4 61/5 62/11 62/15 94/13 **ensuring [1]** 55/20 discussed [3] 40/5 129/12 129/15 129/23 65/13 65/14 65/18 effect [2] 37/3 135/5 entail [1] 116/10 108/18 118/25 129/24 129/25 131/1 68/18 69/11 72/22 **effective [1]** 67/16 entailed [1] 135/16 discussing [1] 131/15 132/16 133/13 73/19 79/21 82/19 efficient [1] 26/16 entered [3] 10/12 101/16 133/16 133/18 133/23 84/7 87/18 89/14 10/13 89/14 effort [1] 26/12 discussion [11] 2/23 eg [4] 42/2 43/22 133/25 134/4 134/19 91/21 91/24 92/11 entirely [1] 7/17 3/14 22/1 22/5 35/22 134/21 136/3 136/17 92/19 92/24 93/6 94/2 46/20 55/19 entirety [1] 53/20 36/18 39/6 39/15 63/8 99/10 99/14 100/4 documented [1] eg POL [1] 43/22 entry [2] 74/7 91/18 117/10 134/13 104/4 104/7 109/10 106/12 **eg that [1]** 55/19 environment [4] 56/1 discussions [5] 85/9 documenting [1] 112/23 112/25 117/3 either [12] 9/21 39/3 56/8 56/14 71/16 126/6 128/10 134/18 39/17 47/5 48/18 72/2 Environmental [1] 24/1 127/6 127/11 128/13 134/20 75/24 76/8 77/24 134/20 137/13 90/10 documents [10] disputing [1] 101/10 12/25 13/6 61/3 61/3 done [22] 31/3 32/17 87/15 90/1 106/15 **EPOSS [12]** 83/20 disruption [1] 17/24 97/4 118/1 118/15 38/2 38/3 44/11 46/5 **elaborate [1]** 137/20 84/8 84/10 84/14 **distribute** [2] 61/21 elements [1] 114/17 118/16 118/18 129/16 58/10 65/2 80/13 84/25 85/2 85/10 71/15 does [37] 7/24 24/16 93/15 93/16 115/22 80/19 83/1 90/14 else [6] 49/8 81/17 distributed [1] 48/10 26/5 40/4 43/21 44/13 90/21 103/25 104/2 97/15 103/24 104/2 123/16 126/7 distribution [2] 61/2 46/19 47/8 49/8 49/12 109/19 110/10 111/12 105/10 **EPS** [1] 84/8 134/1 49/17 49/18 49/20 121/21 124/23 138/6 else's [1] 32/6 equipment [1] 8/3 division [2] 17/12 49/22 50/5 52/10 138/14 email [27] 6/4 40/20 equivalent [2] 139/10 40/23 41/1 44/22 44/25 52/15 64/14 64/17 **Donna [1]** 89/21 142/15 **DLs [1]** 4/15 67/5 72/9 75/22 76/8 45/13 45/25 53/12 **erroneous** [1] 42/2 doubly [1] 82/1 do [99] 2/1 2/2 7/16 77/7 78/1 80/6 82/20 54/24 57/20 58/8 down [42] 12/11 error [10] 32/15 8/8 12/6 12/7 18/23 93/12 94/18 95/22 24/24 28/12 29/6 58/15 58/25 73/9 32/15 33/5 91/9 91/10 19/9 19/9 21/17 22/17 95/25 96/8 103/24 46/18 49/2 56/10 76/12 76/14 76/25 91/20 92/10 92/11 27/9 27/21 30/14 118/16 131/24 133/7 57/13 59/3 60/11 61/8 82/7 83/16 104/24 92/21 98/24 35/15 36/23 37/11 144/23 66/25 69/20 73/25 105/6 106/4 106/5 **errors [10]** 17/5 17/9 37/13 37/17 37/18 doesn't [13] 49/13 74/7 74/19 75/5 76/11 106/10 106/24 108/17 17/18 18/15 26/21 38/8 40/12 41/4 41/6 64/21 65/1 65/2 70/22 76/13 78/20 89/10 111/20 64/11 72/23 87/5 92/5 41/18 42/2 42/16 92/1 95/23 95/24 89/17 89/20 90/8 emails [3] 38/22 97/25 42/22 48/22 50/16 100/14 105/24 109/7 90/15 90/24 91/3 38/23 104/18 escalate [2] 99/4 50/19 51/15 52/20 91/19 92/9 92/11 93/4 embedded [1] 109/12 131/20 99/24 53/11 56/19 57/8 doing [11] 36/19 94/11 95/3 95/9 105/5 120/18 **escalated** [1] 18/22 59/13 60/14 60/16 37/19 53/4 71/7 81/17 emerge [2] 22/6 106/25 107/8 115/6 Escher [14] 3/3 3/15 63/11 65/10 65/12 118/10 135/10 136/17 39/12 81/22 94/9 100/9 4/18 4/22 29/3 109/19 65/15 65/18 68/14 120/14 139/17 139/20 141/3 **emerging [1]** 22/8 111/23 112/6 112/11 69/16 72/22 74/13 **domain [27]** 116/5 draft [3] 55/11 59/5 **emphasis** [1] 140/18 112/17 112/18 112/20 75/8 77/12 77/14 125/4 128/20 129/20 117/25 **employed [1]** 126/13 141/25 142/15 77/15 77/16 77/19 employees [1] 129/21 129/22 130/1 drafted [1] 128/8 Escher's [2] 4/3 4/5 78/15 79/25 80/11 130/1 130/11 130/16 127/19 essence [2] 120/22 **Dreweatt [2]** 116/15 81/24 82/1 82/4 82/12 130/17 131/4 131/23 **employer [1]** 60/5 136/15 137/9 85/9 89/13 91/22 92/8 134/22 134/25 136/9 essentially [3] 14/7 driven [1] 120/16 **enable [4]** 129/19 92/17 93/22 97/7 137/2 137/14 137/15 driving [1] 125/19 132/19 139/1 139/4 135/5 136/1 99/12 100/1 100/19 137/18 137/23 138/9 drop [1] 83/8 enabled [4] 121/12 estate [8] 6/8 47/6 104/4 104/8 106/7 138/10 138/11 138/17 132/24 135/21 135/22 48/15 64/10 109/22 due [6] 89/3 99/5 107/2 109/23 110/21 139/4 140/3 99/25 108/25 116/2 enabling [1] 140/5 111/3 111/15 134/17 117/22 120/9 121/6 domains [8] 115/8 128/21 et [1] 90/7 encountered [2] 121/22 122/2 124/17 130/9 130/12 130/13 **DUNSDLR [1]** 130/19 124/1 142/22 et cetera [1] 90/7 126/1 132/2 133/1 130/20 130/22 135/5 during [8] 2/19 28/5 end [11] 19/1 19/18 **Europa [2]** 126/1 133/16 133/18 133/19 139/11 33/15 33/22 113/5 38/5 38/6 41/4 41/20 126/1 134/2 134/5 134/18 don't [85] 3/12 3/17 120/12 120/14 125/20 90/12 90/13 96/10 even [3] 26/22 64/24 134/21 136/7 136/11 3/18 3/19 4/14 4/25 106/17 115/3 120/13 138/4 139/6 139/17 5/3 9/16 15/13 16/18 engineer [3] 2/7 event [9] 30/19 32/21 143/19 each [4] 7/12 30/3 91/17 91/18 18/1 20/6 20/8 20/9 39/10 60/7 64/18 document [51] 12/24 110/17 128/4 20/10 21/17 21/19 64/20 110/4 111/15 engineering [3] 2/4 13/3 13/14 13/15 earlier [4] 58/13 21/20 28/22 29/5 16/14 16/15 111/16 13/16 41/11 41/22 118/25 130/9 136/24 eventing [2] 25/5 30/13 31/2 31/3 31/5 **engineers** [1] 16/13 56/24 56/25 59/17 earliest [1] 103/5 32/11 32/12 32/13 **enhanced** [5] 68/18 62/22 60/17 61/13 61/19 early [2] 86/23 events [5] 16/8 64/15 32/24 36/1 36/21 37/6 68/20 68/23 70/10

fault [10] 32/12 84/21 39/25 40/19 41/7 47/9 29/9 38/15 53/10 72/5 Ε experiencing [3] 92/6 105/17 108/11 84/25 88/10 88/10 48/19 49/4 55/13 67/1 86/20 93/9 93/11 events... [3] 107/16 expert [4] 36/12 37/9 90/21 91/5 91/12 69/11 75/17 76/24 93/12 93/14 93/25 111/4 111/14 119/15 125/1 91/20 92/21 86/8 97/25 104/23 fragments [1] 21/23 **eventually [2]** 17/8 **expertise** [5] 18/5 faults [11] 31/10 105/24 107/9 134/3 **framework [2]** 11/13 116/13 31/10 31/11 31/12 18/7 26/10 35/1 35/7 135/4 138/21 129/19 ever [16] 3/2 4/24 experts [1] 128/16 31/13 83/20 87/6 88/1 firstly [2] 76/24 122/2 framework' [1] 55/23 4/25 5/3 16/20 22/5 fit [2] 130/2 133/4 explain [13] 8/19 88/6 88/7 88/9 fraud [3] 68/6 72/20 23/15 23/16 28/24 30/2 35/2 43/9 49/4 faulty [1] 106/16 fix [20] 26/12 47/5 72/22 29/6 44/11 60/10 77/22 77/25 78/2 78/9 fraudulent [3] 68/1 62/19 75/17 76/24 fear [1] 140/20 87/12 93/23 93/24 102/22 103/12 103/14 69/13 69/16 94/12 94/18 120/3 feature [2] 57/8 141/20 103/15 103/21 103/24 frequency [1] 20/25 134/23 135/16 57/16 every [2] 1/25 68/17 explained [1] 102/21 features [5] 23/5 104/2 108/24 111/13 **frequent [3]** 34/16 **Everybody [1]** 112/2 **explaining [4]** 95/18 56/2 56/16 57/6 136/4 111/17 112/13 112/17 38/20 70/5 **everyone** [1] 6/1 95/19 95/21 135/11 February [5] 74/1 122/11 122/16 **frequently [2]** 80/13 evidence [45] 8/2 8/4 explains [2] 107/21 76/14 93/4 104/25 fixed [11] 30/12 97/5 80/14 11/11 12/17 12/20 103/23 107/16 109/21 **front [3]** 1/12 104/18 110/1 109/1 12/20 12/21 13/3 13/7 explanation [4] 98/22 February 2011 [1] 109/24 111/8 111/24 114/6 13/16 13/20 21/23 112/6 112/22 123/9 99/1 100/6 100/7 froze [1] 90/3 74/1 22/15 22/17 22/19 fixes [3] 34/1 73/8 **explicitly [2]** 76/19 fed [3] 10/15 36/22 **FTMS [9]** 119/25 35/9 35/19 35/23 120/1 120/1 120/3 38/5 122/19 35/25 36/18 37/7 38/2 explore [1] 12/22 feed [1] 13/9 fixing [1] 112/19 120/4 125/7 125/11 39/8 39/17 43/19 47/7 **explored [1]** 103/4 feedback [7] 32/17 flick [1] 97/8 126/25 130/21 47/21 47/23 52/8 58/7 **exploring [1]** 137/22 33/14 61/3 99/5 99/15 **floor [3]** 4/24 70/12 FUJ [1] 69/24 81/7 81/8 106/12 99/25 100/1 FUJ00036863 [1] **exposes [1]** 72/18 141/2 109/15 114/5 114/14 express [1] 89/11 feeding [1] 33/9 **Flora [1]** 86/10 83/21 122/1 123/15 127/19 **expresses** [1] 111/9 feel [2] 37/10 141/12 flowing [1] 125/20 FUJ00042388 [1] 131/9 131/19 140/10 expressing [1] 38/2 feels [2] 89/7 90/16 focus [3] 16/25 17/9 93/3 140/11 143/14 144/19 extent [4] 9/19 12/7 Feltham [12] 14/18 132/12 FUJ00058190 [2] exact [1] 35/15 68/10 82/12 14/23 14/25 15/1 folders [1] 132/24 84/18 84/20 exactly [6] 20/21 **extract** [1] 56/15 16/16 16/19 38/12 follow [6] 19/5 19/10 | FUJ00081584 [1] 71/1 73/21 83/19 **extremely [3]** 53/2 116/14 118/10 119/5 24/16 40/4 80/6 83/15 98/1 91/18 119/15 123/24 138/24 89/1 92/14 followed [1] 13/9 FUJ00083770 [1] examine [1] 22/15 female [1] 108/2 **following [8]** 13/5 eyes [2] 81/21 81/24 104/17 example [6] 22/7 few [6] 86/14 98/6 13/8 41/11 43/13 FUJ00087994 [1] 23/6 26/23 84/15 109/2 109/17 133/14 44/18 67/12 72/19 128/5 125/10 126/24 face [6] 38/22 38/22 140/9 89/22 FUJ00088036 [2] **examples** [1] 28/1 89/6 89/6 90/19 90/19 fields [1] 51/20 60/12 133/13 follows [1] 47/3 **exception** [1] 43/15 facility [4] 5/4 5/5 figurehead [1] 61/12 foot [6] 7/22 28/3 FUJ00089756 [1] **excluded [2]** 131/6 62/25 69/12 file [2] 120/4 125/8 40/19 44/23 44/25 73/15 131/22 facsimile [1] 140/22 files [3] 121/2 126/25 52/6 Fujitsu [38] 8/15 8/16 **executable [3]** 142/8 fact [6] 2/18 15/2 142/8 **footprint [1]** 51/3 9/6 11/5 12/18 13/17 142/11 142/13 31/6 64/23 91/13 filter [1] 16/6 13/23 14/25 25/25 forgotten [1] 40/9 **execute** [5] 62/25 91/16 26/16 26/17 26/21 filtered [1] 67/15 form [1] 39/17 132/24 139/2 139/13 factor [1] 70/17 filtering [2] 26/6 26/9 formal [1] 139/18 43/23 44/10 44/21 140/6 46/21 48/19 55/6 60/6 fail [1] 65/6 final [3] 29/19 61/21 Formalised [1] 57/18 **executed [2]** 53/11 failed [3] 75/13 77/2 **forum [1]** 97/1 63/22 72/19 74/16 61/25 139/15 77/10 85/9 87/3 87/24 98/24 finally [2] 101/11 forward [7] 74/6 exert [1] 56/2 failures [2] 31/9 65/7 109/19 78/19 96/16 100/13 99/3 99/22 99/23 exist [1] 55/5 fair [18] 14/13 48/24 102/22 112/11 113/11 Finance [1] 11/12 103/4 104/5 128/22 existed [1] 16/20 48/25 53/15 53/18 financial [2] 72/20 forwards [4] 56/23 114/20 126/13 126/15 **existence** [1] 55/5 72/12 96/22 98/16 72/22 57/11 59/16 61/8 127/19 128/21 141/17 **existing [1]** 137/15 98/17 98/20 101/20 find [12] 8/2 29/10 found [6] 25/14 84/7 Fujitsu's [1] 14/7 **expand** [1] 31/12 101/21 106/21 106/22 36/23 51/6 52/14 93/21 93/23 96/19 full [1] 114/3 **expanded** [1] 60/13 109/2 112/3 112/4 65/21 80/15 87/16 99/17 fully [1] 67/8 expect [1] 142/11 112/5 102/18 105/21 108/16 **four [7]** 14/1 20/5 function [10] 23/2 **expected [2]** 35/5 fairly [2] 58/16 70/18 27/11 82/23 82/24 27/8 27/9 34/9 34/22 119/13 75/4 **Fairthorne [1]** 129/4 fine [3] 54/12 54/15 93/20 130/21 39/2 48/17 62/9 62/13 **experience** [3] 31/13 falls [2] 57/1 131/20 143/6 four months [1] 67/6 143/24 144/5 false [2] 39/19 71/22 first [33] 7/2 9/1 93/20 functional [3] 131/15 experienced [2] far [7] 60/7 69/14 10/11 13/20 14/4 four years [2] 82/23 134/6 134/8 33/24 75/3 85/6 85/10 89/16 functionality [1] 15/20 16/24 18/20 82/24 experiences [1] 90/19 141/15 18/25 19/7 19/15 fourth [15] 17/16 10/12 119/2 fashion [1] 87/25 25/15 26/8 26/10 29/2 functions [3] 17/22 19/24 20/2 39/23

| F | 135/5 144/19 | Graham Allen [1] | handled [1] 96/16 | 93/16 93/18 94/8 |
|--|--|--|---|---|
| functions [2] 62/13 | given [11] 35/19 | 140/10 | Handling [1] 67/16 | 105/16 105/24 105/25 |
| 135/23 | 43/17 44/1 45/16 | Graham's [1] 140/12 | happen [4] 11/3 11/9 | 107/9 107/13 107/14 |
| fundamental [2] 59/8 | 61/10 61/14 67/21 93/24 100/1 120/7 | grant [2] 75/19 79/24 granted [6] 4/18 5/1 | 33/17 40/11 happened [14] 31/14 | 107/21 107/21 108/3 108/5 108/10 108/14 |
| 64/11 | 133/6 | 64/19 75/16 78/7 | 31/15 36/25 37/4 40/9 | |
| further [23] 3/19 13/1 | giving [6] 13/20 37/7 | 80/12 | 40/12 64/21 83/11 | 108/25 109/1 109/4 |
| 19/12 56/10 76/13 89/5 89/10 89/16 90/8 | 45/19 57/14 57/25 | grants [1] 78/3 | 93/22 102/15 104/3 | 140/13 |
| 91/13 91/15 95/3 | 114/5 | grateful [2] 106/1 | 104/9 104/11 110/19 | head [1] 85/15 |
| 99/20 105/5 106/4 | glad [1] 97/22 | 113/6 | happening [4] 28/18 | heading [1] 118/22 |
| 106/5 106/10 106/25 | GLO [10] 12/14 12/15 | | 94/9 103/22 110/18 | hear [8] 1/3 54/20 |
| 111/5 112/23 113/9 | 12/17 12/25 13/4 13/5 | | happens [3] 22/14 | 68/22 86/1 98/11 |
| 136/17 144/11 | 13/8 13/13 39/9 81/4 glue [1] 144/1 | group [10] 39/13 123/6 128/11 129/7 | 107/22 111/25 happy [1] 58/16 | 113/21 124/12 143/11 heard [7] 11/11 86/18 |
| future [5] 46/7 | go [46] 9/1 26/8 | 129/23 130/2 130/5 | hard [2] 88/19 131/14 | |
| 101/13 102/25 103/15 | 26/10 28/17 40/25 | 132/18 137/19 138/23 | | 123/15 127/19 |
| 103/22 | 44/2 44/22 44/23 46/4 | | 16/12 16/15 31/10 | heart [1] 18/11 |
| G | 46/6 48/9 49/8 52/6 | groups [1] 57/6 | 32/12 32/24 | heavily [3] 63/24 |
| gain [2] 29/14 128/19 | 59/5 61/8 62/5 66/24 | guess [1] 124/15 | harness [1] 119/23 | 92/14 134/15 |
| Gareth [5] 38/10 | 74/6 74/10 75/5 76/22 | 10 | harvested [2] 28/16 | held [3] 110/5 118/8 |
| 38/11 46/13 46/15 | 77/6 77/14 78/19 79/9 | | 121/13 | 141/7 |
| 98/7 | 80/15 84/12 84/17 | guide [1] 122/18 | harvesting [1] 30/20 | hello [1] 86/10 |
| Garreth [2] 90/10 | 86/8 89/16 89/16 90/24 93/4 94/11 | Н | has [58] 20/15 28/13 43/21 44/11 46/19 | help [20] 19/5 26/2 26/17 32/3 33/8 37/22 |
| 90/11 | 98/21 105/4 106/23 | had [111] 4/23 6/1 | 46/24 48/17 51/10 | 41/13 43/5 63/15 66/6 |
| gatekeeper [1] 16/6 | 107/8 111/20 122/10 | 6/3 6/10 7/7 7/25 | 51/16 52/1 52/4 56/11 | 66/15 76/24 99/15 |
| gateway [3] 14/7 120/1 120/2 | 129/17 131/12 133/13 | 11/14 12/11 15/6 15/6 | | 100/6 102/15 102/17 |
| gathering [2] 8/4 | 134/3 136/17 141/13 | 15/6 15/7 16/9 16/25 | 64/19 65/3 69/5 71/10 | l l |
| 137/8 | goes [11] 48/10 | 19/4 19/10 20/18 | 76/9 77/4 79/14 81/3 | 113/9 |
| gave [4] 35/23 36/18 | 103/11 107/13 107/21 | 22/19 23/1 23/6 23/9 | 86/7 89/2 89/3 89/9 | helpdesk [6] 14/10 |
| 54/23 58/19 | 107/25 108/2 108/19 110/2 111/3 124/15 | 23/15 25/6 25/12 25/19 27/8 29/8 29/17 | 89/25 90/14 90/21 94/13 98/11 99/3 | 14/17 27/19 47/9 88/3 89/15 |
| general [5] 10/4 11/2 | 137/13 | 30/17 35/3 35/5 35/19 | | helpline [1] 13/19 |
| 11/20 62/7 70/13 | going [50] 1/25 9/7 | 37/13 38/2 38/17 | 105/16 105/18 105/19 | |
| generally [6] 18/6 25/6 61/2 66/21 | 13/1 19/12 24/1 24/10 | 41/12 44/14 47/1 | 106/18 106/18 106/19 | |
| 118/20 122/17 | 35/24 36/4 44/23 | 53/19 53/21 57/24 | 107/9 108/10 108/13 | 34/23 35/1 35/9 35/23 |
| generate [1] 47/25 | 44/24 45/20 45/21 | 58/12 58/13 58/21 | 108/14 109/9 109/11 | 36/4 36/19 36/19 |
| generated [3] 48/18 | 46/4 46/6 46/7 48/8 | 60/25 61/1 61/20 | 109/12 109/17 110/11 | |
| 82/14 98/24 | 48/8 48/9 51/12 51/14 | 62/22 66/16 67/20 70/11 70/12 70/14 | 111/7 111/8 111/11 | 38/2 105/10 |
| generating [1] 121/1 | 56/19 57/1 58/8 58/12 58/21 68/16 77/19 | 70/11 70/12 70/14 | | here [20] 26/24 27/24 32/18 59/19 60/20 |
| generic [2] 64/24 | 79/9 80/11 81/10 | 80/19 80/19 80/23 | hasn't [2] 19/19 | 69/8 75/10 86/19 91/2 |
| 65/4 | 81/13 81/16 82/23 | 81/21 82/11 82/24 | 51/24 | 92/3 93/6 97/3 97/16 |
| Geoffrey [7] 133/19 133/19 133/21 133/22 | 00/40 00/40 00/45 | 86/19 89/2 90/2 92/3 | have [255] | 101/23 103/13 112/11 |
| 133/24 134/2 138/6 | 96/16 99/16 101/5 | 92/4 92/19 94/2 94/3 | haven't [6] 11/8 31/3 | 120/22 130/11 132/17 |
| get [14] 19/18 22/23 | 104/22 105/2 105/2 | 96/19 97/4 97/4 97/5 | 32/17 32/18 77/21 | 135/6 |
| 24/5 27/15 30/9 30/22 | 112/2 119/18 120/6 | 97/8 100/9 100/22 | 109/15 | Here's [1] 97/2 |
| 31/17 44/10 49/24 | 121/4 122/15 130/13 139/18 140/19 | 104/3 105/14 106/18 108/7 109/16 110/2 | having [11] 19/15 38/3 42/2 78/3 78/12 | Hewlett [1] 142/19 |
| 64/3 82/20 83/15 | gone [2] 19/15 23/11 | 110/19 110/23 110/24 | | hierarchy [2] 20/7 137/16 |
| 100/21 107/2 | good [11] 1/3 1/10 | 112/19 114/24 115/3 | 117/23 123/14 134/18 | |
| gets [2] 82/21 89/15 getting [7] 12/22 24/7 | 7/25 25/12 25/18 | 115/5 115/7 117/8 | Haywood [3] 79/10 | 120/22 |
| 24/20 32/16 78/21 | 54/20 89/5 92/12 | 119/12 123/6 123/6 | 79/12 81/12 | higher [5] 91/1 91/6 |
| 85/3 92/3 | 97/19 113/21 143/11 | 123/7 123/11 123/24 | he [61] 7/9 7/14 7/16 | 122/20 122/21 124/9 |
| Gibson [1] 77/23 | got [27] 5/17 10/25 | 124/7 126/17 128/10 | 8/12 8/16 8/17 8/18 | highly [1] 123/5 |
| girl [1] 144/1 | 11/8 11/10 19/6 20/22 | 129/17 133/9 136/3 138/25 139/9 142/3 | 38/15 38/16 38/18 | Hill [1] 115/6 |
| GiroBank [3] 15/7 | 21/3 22/11 22/16 23/12 23/22 23/24 | 143/24 143/24 144/1 | 39/3 39/3 39/5 40/22 41/22 44/3 44/8 61/12 | him [24] 3/20 3/23 7/12 7/13 7/19 8/21 |
| 125/12 125/12 | 26/24 30/25 54/12 | hadn't [2] 45/15 | 76/11 78/11 78/16 | 38/12 38/18 38/20 |
| give [18] 10/10 28/1 35/9 35/25 38/1 39/8 | 60/2 61/11 61/12 66/3 | ⁻ | 86/7 89/2 89/2 89/3 | 38/24 38/25 39/1 39/7 |
| 39/17 50/8 61/3 69/10 | 70/00 77/04 00/45 | half [1] 21/6 | 89/4 89/6 89/7 89/7 | 39/7 61/15 61/17 |
| 69/12 71/5 78/25 | 92/22 103/19 109/25 | halfway [1] 89/17 | 89/9 90/11 90/18 | 79/18 89/4 90/11 |
| 86/21 106/2 118/22 | 110/22 112/1 | Hall [2] 89/12 89/13 | 90/18 90/20 90/21 | 93/13 105/21 106/2 |
| | Graham [1] 140/10 | hand [1] 135/18 | 91/22 93/6 93/9 93/10 | 108/16 113/12 |
| | 1 | 1 | | 1 |

Н hinting [2] 45/15 45/16 hiring [1] 6/23 **his [11]** 8/10 8/13 39/2 60/5 81/21 85/15 86/7 89/1 90/21 105/25 140/11 hit [3] 100/12 100/13 109/16 **hm [2]** 115/15 119/5 HNG [8] 39/5 53/17 53/23 54/11 98/14 140/21 141/10 142/23 HNG-X [8] 39/5 53/17 53/23 54/11 98/14 140/21 141/10 142/23 Hodgkinson [2] 40/21 43/18 hold [2] 29/9 143/19 hope [1] 92/24 hopefully [1] 87/16 hoping [1] 41/13 Horizon [79] 2/19 6/18 6/21 14/10 14/11 14/17 17/10 17/17 18/12 33/15 54/7 54/8 54/9 54/25 55/4 55/5 55/21 55/24 56/2 56/3 56/5 56/8 56/16 57/6 57/8 59/7 60/20 60/23 65/11 67/21 70/3 73/19 73/20 75/10 80/6 89/14 98/15 99/7 99/9 101/8 101/10 101/13 102/25 105/14 105/20 106/1 107/6 108/8 108/15 108/21 114/17 116/22 117/1 118/4 118/4 118/6 118/7 118/24 119/3 119/4 119/4 119/20 119/20 120/12 120/13 120/14 120/24 121/9 I can [12] 51/6 54/21 121/10 127/4 140/14 140/15 141/6 141/7 141/19 142/5 142/17 142/23 143/20 I can't [11] 12/10 host [4] 79/4 79/4 94/16 94/19 hosting [1] 135/2 hour [3] 54/13 121/12 125/21 **hours [2]** 110/9 111/10 how [52] 3/1 6/18 6/21 7/1 9/24 10/4 13/8 15/8 15/13 18/25 19/7 19/15 23/25 25/8 27/15 29/14 29/21 34/4 34/7 34/14 34/19 38/8 38/10 38/14 38/20 43/21 46/19

56/19 69/16 72/22 76/4 80/13 80/21 84/6 84/7 84/10 86/14 92/11 94/12 96/15 97/9 108/24 120/10 122/10 122/11 132/14 138/1 141/9 however [3] 19/9 64/14 75/14 **HSH [7]** 15/6 19/4 21/14 32/8 32/10 87/15 87/15 **hub [1]** 31/10 Hudgells [1] 97/22 Hudgells' [1] 97/16 Hulme [1] 60/2 l agree [4] 69/11 91/25 92/15 121/24

l also [1] 68/16 I am [6] 2/5 91/4 91/11 109/20 118/11 143/22 I answered [2] 52/18 73/13 I apologise [1] 117/21 l ask [5] 1/11 85/14 97/20 114/2 142/2 l aware [1] 9/24 I believe [35] 4/23 5/7 5/16 8/21 9/4 10/6 10/15 11/20 19/4 29/20 30/20 36/15 36/17 36/24 37/12 37/14 44/9 50/20 51/24 63/6 72/1 80/20|I found [1] 84/7 80/20 80/22 81/3 85/15 96/17 99/19 109/9 126/20 127/9 133/24 134/6 135/9 136/2

28/1 32/5 33/10 34/6 35/15 45/10 69/16 88/5 92/1 141/9 I cannot [5] 10/4 36/17 52/16 92/15 92/16 I continued [1] 116/11 I could [6] 21/4 69/21 82/24 128/19 139/13 142/13

59/20 69/5 87/11

88/21 96/5 97/7 98/8

101/15 113/22 143/12

I couldn't [8] 12/21 20/2 21/2 21/8 33/18 65/21 82/19 99/21 I created [1] 132/19

47/1 49/7 52/16 53/15 | I detecting [1] 58/18 I developed [1] 128/22 I did [10] 19/9 45/4 68/20 91/21 116/19 116/23 120/13 128/17 I mean [5] 6/24 27/3 129/22 140/12 I didn't [7] 19/4 63/6 68/22 80/22 118/14 136/10 142/16 I disagree [1] 131/11 **I do [14]** 2/2 19/9 35/15 36/23 40/12 41/6 65/12 65/18 68/14 109/23 121/6 133/18 133/19 134/21 97/23 143/13 I don't [64] 3/12 3/17 | I presume [6] 19/18 3/19 4/14 4/25 5/3 9/16 15/13 16/18 20/6 107/11 20/9 20/10 21/19 28/22 29/5 30/13 31/2 45/18 31/5 32/24 36/1 36/21 I raise [1] 98/18 37/6 37/12 37/16 37/18 37/21 37/25 40/7 40/10 40/12 44/6 I recall [1] 38/11 45/3 46/3 59/11 59/23 I recommended [1] 60/10 61/4 61/5 62/11 138/8 62/15 65/13 65/14 65/18 68/18 69/11 72/22 84/7 87/18 89/14 91/21 91/24 92/11 92/19 92/24 94/2 99/10 99/14 100/4 112/23 112/25 117/3 127/6 127/11 134/20 I eventually [1] 116/13 **I go [1]** 133/13 I guess [1] 124/15 I had [9] 41/12 97/4 115/3 115/7 123/6 123/24 124/7 129/17 143/24 I have [22] 10/18

> 45/16 45/17 56/23 59/11 92/23 94/14 100/8 107/12 107/19 112/23 113/10 117/21 I tend [1] 117/11 124/21 125/8 132/11 133/10 144/11 I imagine [1] 69/19 I intended [1] 139/17 I just [4] 41/7 54/4 117/14 119/14 I knew [4] 68/17 68/24 125/15 142/13 I know [14] 4/9 8/8 20/9 27/1 27/6 36/22 46/24 91/22 105/19 108/14 109/15 141/23

143/21 144/10

I left [1] 109/21 I listed [1] 124/8 I literally [1] 82/9 I may [4] 86/16 86/19 113/23 134/4 46/3 91/13 142/6 I mentioned [2] 7/2 79/21 I met [1] 119/9 I move [1] 13/19 I need [1] 20/23 I needed [1] 136/11 I never [1] 109/25 I only [4] 2/17 3/20 21/16 50/6 88/24 97/7 | I took [1] 132/18 I probably [2] 45/16 I read [1] 117/13 I really [1] 79/7 I referred [1] 143/15 I regarded [1] 128/15 | I want [6] 99/1 114/6 I rejoined [1] 140/17 I remember [5] 9/14 64/4 68/15 134/25 140/17 I replied [1] 58/16 I represent [1] 86/10 I rooted [1] 83/9 I said [3] 3/5 27/13 58/13 I saw [2] 81/4 81/8 **I say [5]** 19/9 35/8 62/16 138/7 144/7 I see [5] 89/16 93/12 94/24 95/3 96/22 **I should [1]** 67/1 I speak [1] 20/20 I started [1] 117/12 38/25 40/2 45/6 45/11|I studied [1] 2/4 I suspect [1] 77/24 I take [3] 58/24 144/5 | I will [6] 84/22 85/20 144/21 I then [1] 127/13 I think [87] 4/23 5/12 5/17 5/19 5/22 6/1 6/13 6/16 6/20 6/23 6/24 7/7 9/6 13/25 15/2 16/22 17/12 20/11 31/15 34/25 36/10 38/11 38/25 39/24 41/8 51/12

53/15 53/15 58/13

66/24 74/3 74/4 74/5

74/7 76/2 76/12 76/13

60/23 61/15 62/9

76/19 77/1 78/12 79/7 79/22 80/1 81/4 81/8 83/9 83/21 84/20 86/19 86/20 88/12 88/21 91/1 92/23 94/7 94/15 98/3 98/12 99/22 101/21 101/23 102/9 102/23 103/7 103/13 104/16 105/10 106/5 107/22 112/9 113/16 116/20 117/10 123/21 127/14 128/1 128/10 131/12 131/14 135/14 136/18 137/22 138/5 139/12 I thought [2] 78/6 78/9 I translated [1] 132/16 I turn [3] 28/2 34/4 40/14 I understand [2] 66/24 144/12 lused [2] 129/16 139/12 I viewed [1] 12/24 I visited [1] 106/10 117/18 118/21 127/13 140/9 I was [42] 2/16 2/25 2/25 4/9 5/13 9/7 9/23 13/5 17/8 23/21 41/13 45/3 45/22 45/24 46/2 46/24 46/25 51/14 52/11 52/25 58/15 58/17 68/8 82/9 114/25 115/17 116/12 119/5 119/24 120/25 121/1 122/24 125/14 125/22 129/6 133/11 136/23 139/20 140/7 141/1 142/9 143/2 I wasn't [8] 16/13 85/8 85/12 117/5 118/9 120/11 123/19 141/8 85/21 114/15 117/22 144/12 I won't [2] 107/8 114/16 I wonder [2] 85/17 142/24 I worked [3] 2/20 116/13 128/15 I would [39] 13/22 15/25 24/13 27/19 37/23 46/8 46/10 53/1 58/13 59/25 64/20 82/1 82/18 83/13 85/3

92/24 97/25 104/17

120/1 120/11 120/15 le his [1] 60/5 incorrectly [2] 123/7 57/15 57/17 58/1 ie something [1] 123/8 101/10 142/18 120/19 124/2 124/2 I would... [18] 118/19 26/20 indeed [6] 86/11 87/3 intellectual [2] 4/21 125/22 126/8 126/10 123/21 124/1 124/18 ie that [1] 63/11 90/24 96/4 106/20 140/15 133/7 133/25 135/8 124/18 124/22 127/23 ie the [2] 45/20 73/7 112/11 intended [2] 17/22 137/24 138/15 138/16 128/10 128/18 132/22 le this [1] 65/24 **INDEX [1]** 146/2 139/17 139/3 138/6 138/16 139/8 indicate [2] 16/9 97/9 interact [1] 3/1 involvement [4] ie those [1] 61/9 139/11 139/15 139/16 if [156] indicates [2] 51/10 interacted [1] 8/3 118/14 120/8 120/9 142/6 143/22 imagine [2] 64/20 interaction [3] 4/13 120/14 51/15 I wouldn't [3] 126/10 involves [1] 119/24 69/19 individual [5] 10/5 4/15 8/1 127/8 139/9 imbalance [3] 100/24 11/21 64/14 81/19 interactions [1] **involving [2]** 96/4 l'd [1] 78/2 101/1 104/5 122/1 71/24 96/4 I'II [1] 107/23 impact [12] 74/19 **individuals [2]** 59/18 interchangeably [1] **IP [1]** 115/20 I'm [64] 1/25 3/8 7/17 70/4 74/24 75/2 79/14 5/14 is [351] 7/18 7/19 7/19 8/16 79/18 101/4 101/6 infer [2] 69/5 133/8 interested [1] 109/20 ISD [4] 78/22 78/23 10/19 10/24 12/9 interface [4] 4/5 4/10 101/9 101/16 101/18 information [16] 10/6 79/24 80/11 12/22 13/1 14/24 11/20 11/22 13/10 122/9 122/13 9/3 64/3 isn't [3] 96/22 111/5 15/24 19/12 21/2 impact/incidents [1] 23/12 35/5 45/18 **interfaced [4]** 4/3 4/8 132/9 24/10 24/12 24/25 isn't it [2] 96/22 75/2 46/25 65/6 71/15 37/24 38/15 26/19 28/25 30/24 71/16 71/19 72/14 implement [1] interfered [1] 23/3 132/9 34/3 39/20 45/10 128/23 89/22 94/25 132/18 internally [3] 49/15 issue [56] 6/7 12/1 45/23 49/7 51/23 implementation [1] informed [4] 29/17 49/20 49/22 12/1 16/23 18/20 19/1 52/11 54/4 60/3 62/12 116/7 89/3 93/23 93/24 interpretation [1] 19/6 19/16 19/19 65/21 66/16 69/14 implemented [4] informing [2] 99/12 87/10 19/25 22/24 23/8 69/14 69/25 72/13 56/4 66/5 125/7 130/6 23/17 25/5 26/22 100/3 intervening [1] 79/9 86/10 86/13 27/24 29/15 32/10 implementing [2] infrastructure [2] 113/12 86/16 86/20 88/12 32/12 33/22 34/4 37/7 115/2 115/8 116/9 124/8 interviewed [5] 59/18 92/3 97/21 100/15 39/12 40/14 40/14 implied [1] 127/18 Infringements [1] 59/22 59/23 60/9 101/5 101/23 102/17 **important** [1] 123/4 73/4 60/10 44/21 47/12 65/10 102/17 104/21 105/2 into [34] 5/9 10/12 65/15 68/7 68/8 74/23 **impossible [2]** 23/10 inherent [1] 56/6 105/2 113/6 118/9 12/2 15/12 17/8 22/3 75/3 77/9 77/21 78/6 23/11 initial [4] 3/21 14/4 119/1 123/13 129/4 improvements [1] 56/15 56/24 23/2 28/16 30/3 30/9 85/1 85/18 87/16 133/4 133/18 140/2 35/3 37/12 37/19 56/17 93/19 94/8 98/10 initially [10] 2/16 140/5 140/13 inability [2] 101/17 5/11 13/25 14/17 41/25 56/2 56/4 68/10 98/12 99/4 99/24 I've [6] 10/25 11/10 141/5 16/16 108/2 116/11 76/15 80/2 81/9 84/12 103/14 105/4 106/18 19/6 20/22 54/12 66/3 inadequate [1] 55/18 122/13 122/23 122/24 86/4 86/6 98/14 98/15 106/20 107/15 108/22 lan [2] 116/15 136/16 inadvertently [2] Initiative [1] 11/13 102/4 103/1 103/5 108/23 111/10 112/6 Ian Morrison [1] input [3] 33/14 45/4 68/2 69/18 116/15 125/24 128/9 123/3 124/20 136/16 129/8 141/3 142/14 issues [22] 9/4 9/25 incandescent [1] 128/9 ICL [12] 2/8 8/15 9/22 intractable [1] 95/24 10/4 11/20 12/4 12/12 38/5 Inquiry [10] 1/11 13/23 115/12 117/13 incident [10] 9/15 11/11 13/21 98/11 introduced [7] 7/4 20/25 21/10 25/13 117/15 123/11 126/13 12/6 12/11 47/5 47/7 113/10 114/2 114/5 7/9 8/17 8/20 69/3 28/8 31/11 38/18 126/14 141/17 143/17 47/8 47/11 74/11 114/15 123/15 145/4 138/8 138/17 67/11 87/1 88/13 97/4 ICL Pathway [4] 2/8 97/24 123/20 123/21 78/21 95/4 Inquiry's [1] 1/24 introducing [1] 60/18 115/12 123/11 126/13 incidents [9] 9/11 ins [3] 63/3 110/23 introduction [3] 62/6 124/19 134/19 142/22 ICL's [2] 129/5 129/8 9/12 10/6 11/21 17/14 134/11 69/9 102/20 it [459] ICL/Fujitsu [1] it's [55] 1/20 11/2 25/13 26/7 27/14 75/2 insert [2] 41/25 44/17 investigate [10] 6/4 141/17 include [9] 31/9 inserting [3] 41/22 22/10 23/17 47/21 12/5 17/22 21/20 30/4 idea [4] 20/24 42/23 71/17 73/9 118/20 42/6 42/13 87/17 90/12 106/2 31/3 31/4 31/25 31/25 82/2 96/14 127/9 129/25 131/5 inserts [2] 43/13 111/5 121/22 124/23 32/12 32/18 43/6 identical [1] 93/19 131/10 131/24 43/15 investigated [6] 46/23 48/4 48/6 48/8 identified [5] 17/18 included [11] 12/18 inside [2] 26/10 84/5 28/24 29/9 30/19 48/8 48/9 48/20 48/21 47/13 57/5 88/10 13/3 28/7 41/3 41/21 77/11 92/14 106/19 52/7 52/13 60/17 instability [2] 85/1 121/20 60/17 62/1 71/1 71/3 76/12 81/24 117/24 85/4 investigation [3] identifies [1] 128/2 126/18 129/25 134/21 instance [3] 105/24 16/25 18/15 68/9 72/8 74/1 77/9 82/2 identify [7] 28/19 includes [1] 76/12 107/9 144/5 84/21 88/18 94/1 96/4 investigations [1] 30/21 47/4 88/7 88/9 96/4 96/5 97/23 103/6 including [3] 65/6 instances [2] 67/14 92/19 88/11 122/8 71/12 79/18 96/18 **Investment [1]** 115/4 104/17 104/18 105/6 identifying [3] 16/8 105/6 106/5 106/6 incomplete [1] instructed [1] 97/22 involve [1] 124/20 25/18 88/14 123/17 integrating [1] 115/2 involved [30] 9/23 106/18 110/11 110/17 **IDs [1]** 70/18 10/18 12/3 16/8 16/13 112/21 117/19 132/9 incorporate [1] 33/25 integration [2] ie [8] 26/20 29/14 138/20 139/21 17/16 70/4 95/13 133/14 136/18 144/15 Incorporated [1] 2/6 45/20 60/5 61/9 63/11 95/15 107/13 115/1 incorrect [3] 60/1 integrity [9] 10/2 iteration [1] 61/21 65/24 73/7 60/4 95/20 55/22 56/9 56/13 115/7 118/19 118/23 its [14] 11/5 16/25

135/16 136/22 137/20 143/21 144/5 144/7 134/3 little [20] 7/8 13/1 144/12 144/10 level [9] 6/9 27/11 19/12 52/7 60/13 67/1 its... [12] 55/24 56/19 knowing [3] 143/20 38/1 42/20 57/7 57/23 72/3 73/25 76/13 58/11 61/21 64/10 Κ 144/7 144/9 66/13 117/24 120/22 86/21 91/1 100/8 65/16 66/11 69/9 keep [3] 44/23 44/24 knowledge [25] 1/21 levels [4] 7/19 13/23 105/3 105/5 106/3 70/12 71/24 87/16 107/23 11/8 11/10 12/7 12/15 14/1 26/2 106/25 107/21 107/25 127/24 **KEL [10]** 18/9 18/10 12/23 20/4 21/1 25/23 liaise [1] 47/22 108/3 135/11 itself [5] 16/5 29/16 22/13 22/24 25/3 25/4 26/3 30/11 31/16 37/5 liaising [2] 95/7 live [16] 6/4 6/8 43/14 105/19 108/14 140/7 25/11 25/12 25/18 39/2 44/5 53/19 63/5 96/11 48/13 48/15 64/10 **ITV [1]** 143/22 25/21 like [34] 6/11 13/22 80/14 99/18 114/12 67/8 76/4 103/1 103/5 **KELs [4]** 24/10 24/13 114/13 120/9 120/23 26/4 26/15 26/25 103/8 109/22 111/3 94/3 110/3 128/16 133/10 27/14 28/13 30/4 119/19 121/5 134/17 James [2] 45/1 45/2 kept [1] 125/20 known [20] 3/3 3/25 75/13 77/2 77/8 82/3 load [1] 120/17 January [2] 86/22 key [13] 4/1 56/13 9/19 10/21 14/11 34/5 84/13 84/15 89/23 LoadRunner [2] 115/25 57/25 68/17 71/18 38/10 39/25 58/12 90/9 91/23 94/22 120/17 142/19 Jason [1] 1/10 71/24 71/25 72/3 72/6 58/21 60/21 77/9 95/22 97/25 98/3 local [3] 100/11 Jenkins [3] 38/10 72/13 84/9 127/3 81/10 83/13 92/3 104/17 110/17 111/24 120/1 143/25 38/14 98/7 129/7 101/7 110/12 116/9 124/3 126/3 128/4 located [6] 130/21 job [1] 5/23 kind [1] 34/1 127/17 138/20 128/11 128/12 132/5 131/7 133/12 138/24 jobs [1] 121/11 King's [1] 44/3 136/15 139/14 141/12 140/25 142/12 John [9] 1/5 1/8 kit [2] 106/1 108/21 143/21 location [2] 115/11 20/20 20/23 59/21 La [2] 130/20 130/23 **KMA [3]** 71/23 72/5 likelihood [1] 124/22 142/13 107/2 109/9 111/23 lab [1] 141/2 82/5 likely [3] 40/10 **locations [1]** 115/5 146/4 knew [13] 20/8 20/9 language [5] 2/21 122/21 124/1 lock [4] 109/16 110/5 joined [3] 2/8 17/8 20/11 46/6 68/17 2/23 3/25 43/10 43/11 limited [6] 2/8 11/15 111/15 111/15 34/6 68/24 68/25 81/13 large [1] 31/10 15/12 55/14 67/23 locked [1] 72/4 **Jon [1]** 60/2 87/4 88/12 125/15 largely [1] 72/15 126/12 locking [4] 110/13 Jones [7] 2/20 2/22 135/15 142/13 last [8] 1/15 54/5 line [57] 14/4 14/15 110/16 111/17 112/14 3/2 3/12 3/14 3/19 know [120] 3/12 4/9 54/23 68/22 79/10 15/17 15/19 15/20 **log [7]** 50/21 50/21 3/22 7/16 8/8 9/16 12/7 101/5 106/11 111/20 16/1 16/6 16/11 16/22 51/4 63/3 121/20 journal [5] 39/22 15/13 19/1 19/8 19/16 **lastly [1]** 83/20 17/16 17/21 18/20 134/11 135/24 43/15 49/6 102/3 20/6 20/8 20/9 20/9 later [7] 10/1 14/11 18/22 18/25 19/8 log-ins [2] 63/3 117/9 20/11 20/22 21/18 39/5 91/18 94/7 19/15 19/17 19/20 134/11 journalist [1] 143/25 21/19 21/20 22/14 113/10 126/13 19/24 20/2 20/16 21/1 logged [4] 42/3 89/22 journalists [4] 22/25 25/7 27/1 27/6 lay [1] 119/15 22/5 25/15 26/8 26/10 90/4 135/19 117/12 143/16 144/4 27/15 28/22 29/5 leader [3] 5/20 5/22 27/22 29/2 29/6 29/9 Logger [1] 74/17 144/6 30/13 30/14 31/2 31/5 59/21 38/16 47/9 47/22 logic [1] 139/17 judgment [1] 12/16 32/11 32/12 32/13 leaders [5] 7/1 7/3 47/25 48/19 48/20 logs [1] 50/18 judgments [1] 144/9 32/15 32/24 33/5 36/1 7/4 7/9 7/12 53/10 62/25 64/3 67/5 long [12] 23/6 34/5 Julian [2] 89/12 36/21 36/22 37/6 learn [1] 2/20 34/6 34/7 34/13 38/10 67/7 67/14 67/16 89/13 37/11 37/12 37/16 learned [1] 122/12 67/17 67/19 67/24 99/3 99/23 100/2 July [2] 2/9 116/20 37/21 37/25 41/18 least [3] 85/6 96/11 68/10 71/10 72/6 93/9 104/8 104/10 108/20 July 1996 [1] 2/9 44/6 45/3 45/19 46/24 114/18 93/11 93/12 93/14 long-windedness [1] July 2008 [1] 116/20 58/7 61/4 61/6 62/11 led [2] 63/14 134/14 93/25 112/9 127/20 108/20 June [1] 80/4 62/15 65/18 68/7 68/9 **Ledger [2]** 57/13 137/3 longer [2] 76/8 77/4 June 2015 [1] 80/4 68/20 69/3 69/11 58/2 lines [3] 18/19 20/5 look [53] 2/13 7/21 just [66] 2/1 2/14 left [8] 5/17 7/7 7/18 81/12 81/24 84/7 18/17 22/10 22/25 87/22 8/12 9/5 10/25 12/22 84/10 86/12 87/18 7/19 109/21 116/17 **Linux [2]** 43/4 43/5 23/10 24/10 24/13 13/1 13/22 15/9 15/10 87/23 87/25 88/1 130/6 132/20 list [9] 48/10 59/17 26/23 28/18 30/25 15/20 35/2 37/9 40/21 89/13 91/22 91/24 **Legacy [22]** 54/8 61/2 81/4 81/8 99/18 32/17 40/16 40/19 40/25 41/7 45/6 45/11 92/11 92/19 93/22 54/9 55/5 60/20 65/11 99/19 101/24 134/2 40/21 46/16 55/10 46/2 51/6 52/6 52/17 94/2 97/23 99/10 73/17 73/18 107/6 listed [6] 97/5 124/8 55/13 56/23 57/1 59/3 52/23 53/5 54/4 54/22 99/12 99/14 100/1 117/1 118/4 118/7 124/21 128/3 132/20 59/16 60/12 62/5 55/13 56/23 58/14 105/19 106/7 108/14 119/4 119/20 120/13 69/23 73/8 73/15 133/18 59/16 60/13 61/12 109/10 109/15 110/11 120/24 121/9 121/10 listen [2] 124/18 73/22 82/11 83/21 62/5 66/25 73/25 74/6 114/1 117/15 122/15 140/15 141/6 141/19 140/11 84/18 84/18 88/16 74/6 74/10 77/8 85/21 124/9 124/16 125/16 142/5 143/20 88/23 91/13 93/2 93/5 listener [2] 126/9 86/3 86/6 86/21 91/19 127/6 127/12 133/1 legal [2] 101/9 126/11 93/14 95/21 98/1 99/2 94/18 105/23 108/18 134/5 136/7 136/10 113/11 101/5 101/22 102/1 lists [3] 125/6 130/12 109/23 111/23 116/24 137/22 137/24 138/2 **Leighton [3]** 45/7 132/23 104/17 105/2 107/2 117/14 119/14 119/15 140/21 140/22 140/24 45/9 45/12 128/12 130/4 132/14 **literally [3]** 73/13 119/24 119/25 120/3 141/11 141/12 141/13 length [1] 1/16 82/9 82/9 140/14 141/5 141/13 122/8 124/12 124/12 141/16 141/23 142/9 let [2] 87/25 141/23 **litigation [2]** 39/13 looked [11] 17/15 124/25 134/1 134/23 142/10 142/21 143/20|let's [3] 92/7 130/4 55/15 57/22 63/23 66/18

manage [4] 26/6 63/6 86/20 88/6 91/14 92/7 92/23 99/16 104/22 137/4 137/6 99/4 99/24 103/6 121/15 126/16 140/24 looked... [7] 66/21 managed [4] 10/14 104/13 105/13 110/10 message [28] 28/11 66/22 69/25 94/4 113/23 116/24 119/23 28/12 28/13 28/19 17/4 48/4 120/4 96/15 107/19 109/15 management [37] 123/2 124/19 132/15 29/17 29/21 30/16 looking [11] 31/24 6/6 8/10 8/11 8/13 132/15 134/4 30/17 31/1 31/4 31/17 monitors [1] 47/6 52/11 80/18 82/12 8/18 8/22 9/2 9/3 9/8 31/22 32/15 43/15 May 2009 [1] 40/5 91/14 110/14 111/4 80/23 80/24 81/1 81/2 90/13 9/15 9/22 10/8 10/16 May 2014 [3] 73/9 116/6 119/25 136/12 11/23 12/3 12/10 82/7 83/16 90/2 93/24 100/10 138/1 maybe [5] 6/25 21/23 12/19 13/7 13/17 16/2 100/12 100/22 111/21 looks [2] 28/13 98/3 16/17 17/3 17/3 27/10 37/23 38/21 63/17 131/18 131/19 140/23 loss [4] 29/14 72/24 27/20 56/3 56/7 62/21 |**MBOSAS01 [1]** 135/1| 141/3 101/7 105/18 71/24 72/7 87/24 **MBSC [1]** 87/15 messages [7] 28/7 losses [3] 55/20 89/3 94/14 94/15 96/17 28/11 28/15 28/21 McKay [2] 105/7 89/5 97/24 121/25 130/7 105/11 29/11 110/22 123/17 lost [1] 100/14 me [27] 1/3 33/19 met [1] 119/9 manager [11] 7/3 lot [7] 25/13 91/22 7/14 12/3 36/22 36/24 41/14 46/4 54/20 method [3] 68/11 96/23 97/2 112/10 37/1 37/3 44/4 79/13 85/18 85/21 86/1 87/9 68/23 68/25 118/22 140/18 81/15 125/8 94/14 107/24 109/10 mid [2] 80/7 98/13 low [1] 43/3 109/22 109/23 113/21 mid-2010 [1] 98/13 managerial [1] 70/23 low-cost [1] 43/3 117/12 117/16 123/25 mid-2015 [1] 80/7 managing [1] 124/8 lower [4] 87/22 mandates [2] 62/17 124/20 129/19 131/12 middle [2] 38/7 122/20 122/22 123/8 134/9 138/1 138/7 139/10 115/19 lunch [1] 113/3 mandatory [1] 61/11 141/23 143/11 144/4 might [9] 6/14 23/24 **luncheon [1]** 113/19 mean [30] 6/24 18/1 58/22 85/17 86/14 manifest [1] 29/15 18/2 22/17 27/3 40/8 88/3 92/25 105/10 manner [1] 121/4 42/16 42/22 46/3 142/24 manoeuvred [3] made [14] 6/11 23/18 46/22 47/8 49/12 37/12 37/15 37/17 migrated [1] 115/5 46/7 74/5 89/19 92/15 49/17 49/20 50/19 Mik [12] 5/17 6/23 manoeuvring [1] 104/8 123/6 131/17 51/15 52/10 52/15 7/7 8/8 8/9 8/10 8/12 37/19 132/21 138/2 138/4 manual [4] 51/2 52/20 55/3 77/7 77/20 8/20 37/2 37/4 61/12 139/21 143/23 70/20 71/5 72/23 86/17 91/13 92/18 81/20 Maestro [1] 125/18 94/18 103/17 103/24 manually [3] 49/21 Mik Peach [3] 8/10 Maestro-Dev [1] 77/15 89/22 131/20 142/6 37/2 37/4 125/18 many [12] 3/11 6/11 meaning [2] 49/7 Mike [4] 104/24 Maestro24x7 [1] 6/19 6/22 7/1 15/8 88/24 106/24 107/1 111/21 121/8 15/13 19/23 31/8 34/7 means [7] 35/2 49/5 mildly [1] 38/5 magical [1] 108/4 53/4 92/11 49/21 62/12 71/2 mind [2] 46/3 143/20 main [1] 25/2 75/17 85/20 mindset [1] 144/3 mapping [2] 30/6 mainly [2] 25/9 119/2 30/8 meant [4] 22/23 minimum [2] 17/24 maintain [2] 18/9 mappings [3] 29/23 65/21 76/2 137/21 17/24 121/21 30/1 30/4 mechanism [6] 25/2 Mint [1] 115/6 maintained [1] 55/6 March [2] 93/5 109/1 25/10 33/25 42/13 minutes [1] 85/18 major [4] 27/13 67/3 Mark [6] 74/17 77/1 42/21 82/14 mismatch [16] 29/13 105/14 108/7 113/24 114/4 137/17 29/15 29/18 30/18 mechanisms [1] 56/1 make [17] 15/20 146/8 media [1] 143/21 31/18 31/19 33/1 17/17 19/24 27/25 **Martin's [1]** 94/13 98/10 98/23 100/5 meet [1] 30/5 44/19 48/1 49/25 50/9 100/23 103/15 103/19 match [2] 76/3 meeting [6] 39/1 45/8 70/22 75/25 82/1 89/4 100/17 45/12 89/6 98/3 104/3 110/25 111/1 92/20 95/23 129/13 material [3] 23/15 124/14 missed [1] 46/8 132/9 136/12 23/16 71/25 meetings [7] 38/24 missing [6] 28/11 makes [1] 66/22 matins [1] 124/16 38/25 124/6 124/17 28/17 28/20 30/8 32/1 making [8] 51/24 matter [6] 33/4 63/8 102/23 125/3 126/12 129/17 56/5 78/2 83/3 92/6 121/9 128/16 133/2 misuse [1] 68/6 member [7] 2/5 35/6 122/13 136/13 144/20 134/12 35/24 114/25 123/13 mix [1] 78/3 male [1] 108/5 matters [1] 118/25 129/7 138/10 **Mm [2]** 115/15 119/5 malformed [10] 28/7 may [45] 1/5 23/22 members [5] 36/3 **Mm-hm [2]** 115/15 28/11 28/21 29/11 23/25 26/12 33/4 61/22 62/3 131/3 119/5 29/21 30/8 30/16 31/4 33/14 39/22 40/5 40/9 135/25 model [1] 103/2 31/22 123/17 40/9 40/20 41/2 41/13 memory [2] 80/2 modes [1] 84/7 maliciously [4] 68/2 41/15 42/3 45/1 55/12 95/22 moment [6] 2/14 69/18 69/19 69/22 55/19 57/21 61/23 mentioned [13] 7/2 41/3 44/7 54/1 85/14 man [4] 115/19 130/7 73/9 82/7 82/16 83/16 24/20 32/14 39/24 116/17 132/18 132/22 86/16 86/17 86/19 42/24 79/21 82/16 monitor [1] 111/14

month [2] 90/12 monthly [7] 8/8 8/10 12/2 12/10 12/18 13/17 38/21 months [4] 78/20 79/11 93/20 105/23 more [27] 6/23 11/1 18/6 26/15 34/7 36/10 45/7 45/12 58/22 68/25 69/6 70/5 74/1 74/20 75/9 79/15 98/12 99/1 108/3 109/10 120/13 122/19 123/24 123/24 136/4 137/24 138/3 morning [14] 1/3 1/10 54/2 54/20 97/19 113/6 124/6 124/11 124/13 124/14 124/16 125/2 126/12 145/1 **Morrison [2]** 116/15 136/16 most [1] 109/18 Moulds [1] 89/21 move [7] 13/19 15/15 104/16 117/18 120/5 125/9 125/11 moved [10] 5/9 15/12 15/13 15/16 15/17 15/21 15/24 116/8 116/14 125/11 movement [1] 126/24 moving [4] 68/18 103/4 121/6 137/18 MR [39] 1/9 1/10 24/23 28/12 38/14 43/18 54/4 54/6 54/13 54/22 61/15 61/17 75/5 76/11 77/23 78/5 79/10 79/12 81/12 85/13 85/15 86/3 86/6 86/10 92/23 97/19 104/17 112/24 113/4 113/9 113/23 113/25 114/1 131/9 143/13 144/16 144/22 146/5 146/9 Mr Ascott [4] 113/23 114/1 143/13 144/16 Mr Beer [3] 24/23 54/6 54/13 Mr D'Alvarez [1] 131/9 Mr Gibson [1] 77/23 Mr Haywood [3] 79/10 79/12 81/12 (50) looked... - Mr Haywood

monitored [2] 17/4

monitoring [7] 43/25

49/3 49/5 57/18 58/5

91/23 92/15

99/20

| M | myself [5] 2/19 | news [1] 143/21 | 60/5 60/8 60/23 63/13 | obstacles [1] 24/7 |
|---|--|--|---|---|
| | 119/12 122/6 122/25 | newspaper [1] | 64/14 64/23 65/7 | obtain [2] 23/16 |
| Mr Hodgkinson [1] 43/18 | 139/20 | 143/25 | 65/12 67/5 67/8 67/16 | |
| Mr Jenkins [1] 38/14 | N | next [5] 27/22 40/21 | 68/14 69/6 72/9 74/13 | |
| Mr Parker [1] 61/17 | | 57/25 104/6 136/18 | 74/25 75/4 75/8 75/15 | |
| Mr Peach [1] 61/15 | name [12] 1/10 1/13 | nice [1] 36/23 | 76/20 77/13 78/7 | obviously [8] 69/5 |
| Mr Roll [1] 92/23 | 20/12 59/19 97/19 | nil [1] 144/15 | 78/10 78/12 79/9 | 69/6 76/7 87/19 96/4 |
| Mr Simpkins [12] | 98/6 104/22 114/1 114/3 130/6 130/17 | no [89] 2/25 3/17 | 80/14 82/7 83/13 | 113/2 142/17 143/22 |
| 1/10 54/4 54/22 85/13 | 132/18 | 3/24 4/12 7/3 11/10 | 86/17 86/20 88/5 | occupied [1] 18/14 |
| 86/3 86/6 86/10 97/19 | named [1] 123/6 | 11/18 16/15 20/24 20/24 22/4 32/5 33/11 | 89/25 90/4 90/21 90/21 91/8 92/22 | occurred [4] 25/6 25/7 25/19 91/10 |
| 104/17 112/24 113/4 | namely [2] 69/9 | 34/3 41/19 42/23 | 92/24 95/16 96/8 | occurrences [1] |
| 113/9 | 133/8 | 44/12 44/14 45/22 | 96/12 99/18 102/17 | 99/20 |
| Mr Stein [1] 85/15 | names [2] 130/1 | 46/4 50/14 50/15 | 103/8 103/15 105/2 | occurring [2] 103/14 |
| Mr Stevens [1] 144/22 | 130/2 | 51/12 52/2 56/22 58/9 | | |
| Mr Wright [3] 75/5 | narrow [1] 73/11 | 59/11 59/15 59/23 | 114/18 117/11 118/9 | occurs [1] 22/24 |
| 76/11 78/5 | narrowness [3] | 61/23 63/16 65/6 | 119/4 119/22 120/24 | OCP [1] 81/14 |
| Ms [8] 76/25 85/18 | 58/18 83/16 83/18 | 67/20 71/8 71/21 | 122/24 123/13 124/20 | |
| 86/8 86/9 97/16 97/18 | national [1] 86/23 | 71/22 72/17 72/22 | 128/17 132/15 133/4 | 71/3 80/16 81/15 83/2 |
| 146/6 146/7 | nature [1] 22/6 | 73/10 74/23 75/2 76/8 | | OCPs/OCRs [1] 83/2 |
| Ms Chambers' [1] | near [1] 140/19 | 77/4 77/12 80/25 | 139/25 140/7 140/14 | OCR [1] 81/14 |
| 76/25 | necessarily [5] 21/11 83/11 118/15 119/22 | 80/25 81/6 81/6 82/22 | | |
| Ms Page [2] 85/18 | 143/23 | 84/2 85/8 85/12 91/5 | note [2] 98/3 137/25 | 81/15 83/2 October [6] 51/11 |
| 86/8 | necessary [9] 4/19 | 91/12 91/20 93/25 96/14 96/17 97/12 | notes [1] 33/3 nothing [6] 11/1 | October [6] 51/11 60/8 103/1 103/3 |
| Ms Patrick [1] 97/16 | 5/2 5/2 48/21 67/6 | 97/13 98/18 98/20 | 24/17 24/18 27/1 27/6 | |
| MSC [4] 48/2 48/3 | 79/6 81/25 127/20 | 99/14 100/4 105/9 | 90/13 | October 2017 [1] |
| 48/7 48/12 | 137/6 | 106/8 110/14 112/1 | notice [4] 88/6 110/4 | 60/8 |
| MSCs [2] 48/6 71/4 | need [21] 20/23 | 112/8 112/9 115/23 | 110/9 117/5 | off [17] 23/5 23/6 |
| MSU [8] 9/8 10/7 | 24/16 26/24 27/24 | 119/1 120/11 123/19 | November [3] 1/1 | 70/23 71/5 76/22 77/6 |
| 11/22 12/8 17/4 30/23 | 42/25 76/3 77/24 | 127/8 129/4 131/6 | 91/6 145/5 | 77/11 77/20 79/25 |
| 47/13 95/10 | 78/25 85/10 102/5 | 132/11 133/4 133/4 | now [22] 5/19 13/12 | 80/7 81/11 81/13 |
| MSU/BSU [2] 12/8 30/23 | 103/24 104/2 109/10 | 133/8 133/10 136/8 | 48/6 53/23 59/4 73/7 | 81/15 81/16 82/23 |
| much [11] 16/13 | 111/2 111/5 111/8 | 139/8 139/8 142/6 | 77/4 82/17 86/7 86/17 | 83/9 88/7 |
| 82/20 85/13 86/3 | 121/16 122/23 128/13 | 142/15 144/11 144/15 | | |
| 86/17 113/4 113/14 | 136/10 137/13 | no fault [3] 91/5 | 103/8 104/19 107/22 | 77/6 77/11 77/20 |
| 113/17 117/5 141/11 | needed [11] 44/17 49/23 79/7 125/20 | 91/12 91/20 | 114/14 143/20 143/21 | 79/25 81/13 81/16 |
| 144/18 | 126/2 128/3 130/1 | no one [2] 46/4 133/8 node [1] 30/7 | NT [24] 115/8 125/4 | 82/23 off-piste [1] 80/7 |
| Muchow [2] 7/17 | 136/11 136/14 142/8 | nodes [1] 107/20 | 125/7 128/20 129/14 | office [48] 8/6 8/7 |
| 7/18 | 142/20 | non [5] 100/21 | 129/20 129/21 129/22 | |
| multiple [2] 14/25 | needs [9] 42/20 | 103/20 119/15 125/1 | 129/23 130/25 131/3 | 9/21 9/24 10/5 10/7 |
| 92/14 | 67/19 67/21 72/8 | 137/5 | 131/4 131/6 131/17 | 10/23 11/6 11/14 |
| must [9] 19/21 19/22 | 75/24 78/8 78/15 | non-expert [1] 125/1 | 131/23 132/19 132/25 | |
| 42/13 42/14 42/15 67/19 91/20 92/9 | 112/17 121/3 | normal [3] 10/13 | 133/11 137/15 137/23 | 40/5 41/9 44/5 44/7 |
| 110/3 | negative [1] 117/17 | 47/4 102/5 | 139/10 139/11 142/12 | |
| mute [1] 143/2 | neighbouring [1] | normally [5] 10/12 | 142/12 | 65/17 70/24 71/12 |
| MWESAS01 [1] | 111/18 | 22/13 31/23 38/23 | null [1] 84/7 | 87/4 99/13 99/17 |
| 135/1 | neither [1] 9/24 | 50/13 | number [13] 25/16 | 100/2 103/2 103/7 |
| my [41] 1/10 2/19 | network [10] 17/13 17/25 18/1 18/2 31/9 | not [125] 1/25 2/18 | 28/6 73/24 86/11 | 104/8 104/10 105/13 |
| 9/20 24/24 39/1 51/19 | 68/3 103/3 115/17 | 3/4 3/6 3/9 6/10 7/17 7/17 7/18 7/19 7/24 | 88/17 97/20 102/2 105/23 107/18 109/18 | 108/7 116/13 116/14 116/17 117/7 117/11 |
| 58/15 59/11 80/14 | 115/18 118/25 | 8/5 8/16 9/23 10/13 | 119/10 127/9 127/10 | 116/17 117/7 117/11 117/25 118/11 118/20 |
| 84/21 87/23 88/21 | never [7] 5/6 22/11 | 11/17 11/18 18/20 | | 125/11 126/22 131/5 |
| 97/14 97/19 99/18 | 36/25 37/4 93/21 | 19/3 19/9 19/22 20/1 | 0 | officer [1] 129/8 |
| 99/22 101/23 113/13 | 93/22 109/25 | 21/11 22/23 23/2 | o'clock [2] 144/23 | offices [1] 22/3 |
| 114/1 114/13 116/6 | new [16] 10/11 12/1 | 23/22 23/24 25/4 25/9 | | offs [1] 71/5 |
| 117/11 119/1 119/2 | 68/3 68/23 68/25 | 26/1 31/3 31/25 33/3 | obfuscation [1] | often [3] 20/10 25/9 |
| 119/10 119/12 119/17 124/8 124/22 128/18 | 10/20 11/21 03/13 | 33/4 33/13 34/1 34/3 | 42/20 | 26/8 |
| 132/4 132/12 132/12 | 97/6 107/4 107/16 | 34/13 36/11 36/23 | objects [1] 42/1 | Oh [1] 16/14 |
| 136/14 138/7 138/19 | 112/21 115/11 126/2 | | obligations [1] 65/17 | okay [9] 7/21 13/19 |
| 139/8 139/8 139/19 | 140/21 141/10 | 40/12 41/2 41/14 42/8 | | 16/20 21/22 21/25 |
| 144/3 144/5 | newly [2] 98/14 | 45/6 45/17 51/10 | 51/24 | 24/15 85/21 99/11 |
| | 98/15 | 51/16 53/5 54/8 59/2 | obstacle [1] 24/2 | 106/23 |
| | | | | |
| | | l | | (51) Mr Hodgkinson - okay |
| | | | | |

overall [6] 48/7 48/16 PAN [1] 127/9 0 operates [3] 55/21 order [9] 23/17 53/9 paragraph [21] 2/13 56/3 56/9 56/24 78/25 94/5 52/20 52/25 53/12 old [3] 22/16 22/18 **operating [3]** 7/25 130/2 137/5 138/6 140/3 2/15 7/21 9/18 10/1 69/6 43/6 66/19 142/19 overcome [1] 24/3 10/21 11/19 18/18 on [162] operation [5] 26/16 ordinarily [1] 50/7 oversaw [1] 142/5 18/18 28/3 31/6 33/12 once [10] 46/25 52/1 63/17 63/19 63/20 organisation [2] overseeing [1] 133/8 66/25 72/15 75/17 53/14 53/20 77/10 76/25 99/2 102/21 66/16 115/25 129/6 oversight [1] 139/24 88/11 109/22 111/7 117/20 121/7 128/14 operational [5] 17/12 organisations [2] overview [1] 102/20 124/7 128/20 50/7 67/7 72/23 137/3 67/7 143/21 own [5] 33/6 70/12 paragraph 17 [1] one [49] 7/6 10/11 139/8 139/8 139/19 operations [6] 15/7 original [1] 78/6 18/18 10/19 13/5 20/10 17/13 63/21 78/24 originally [3] 5/16 paragraph 2 [1] 21/10 23/20 24/4 79/24 120/11 79/19 109/4 102/21 31/20 32/20 39/1 39/3 pack [1] 88/21 opportunities [2] originate [1] 84/4 paragraph 20 [1] 46/4 51/6 52/3 52/23 package [3] 43/8 68/13 69/10 originated [3] 84/1 128/14 54/22 60/4 69/6 69/11 43/13 62/21 opportunity [4] 61/10 84/3 84/5 paragraph 25 [2] 69/18 69/23 69/25 **Packard [1]** 142/19 61/20 67/25 72/20 other [31] 6/16 9/22 9/18 10/21 74/4 75/21 78/2 82/6 21/9 21/10 21/11 24/7 page [61] 1/15 1/18 paragraph 31 [1] **opposed [2]** 16/12 87/1 91/22 92/13 93/3 1/19 1/20 2/14 4/17 54/8 24/19 25/20 25/23 121/7 93/4 93/7 94/1 94/2 7/22 18/17 18/19 28/2 ops [2] 16/15 49/25 26/2 26/4 33/5 36/3 paragraph 34 [1] 97/4 110/20 110/23 28/3 40/19 40/20 46/9 52/2 62/22 65/6 option [1] 76/21 117/20 116/24 122/11 123/16 40/22 41/1 42/5 44/2 67/20 69/25 70/20 or [143] 4/13 4/13 6/3 paragraph 4.1.2 [1] 124/9 126/16 129/16 44/22 44/23 44/25 6/15 7/25 8/4 8/15 71/5 78/9 80/18 87/6 66/25 130/4 130/25 131/16 51/9 52/6 55/12 56/10 9/22 9/24 10/7 11/15 110/17 112/25 120/5 paragraph 47 [2] 133/8 143/13 56/23 57/11 59/6 11/17 11/22 11/24 124/18 125/22 126/8 10/1 11/19 ones [8] 12/4 32/24 12/16 16/2 16/24 17/3 59/16 62/5 66/24 70/1 126/11 paragraph 48 [1] 39/1 96/19 97/6 97/9 74/6 74/11 78/19 17/9 17/9 19/3 19/25 others [1] 81/15 28/3 122/22 144/17 79/10 84/19 85/18 21/12 21/14 21/17 otherwise [2] 37/18 paragraph 51 [1] ongoing [2] 56/6 86/8 86/9 86/10 89/17 22/6 23/3 23/15 24/10 71/10 31/6 101/9 90/25 94/11 98/21 ought [1] 60/5 26/20 26/21 26/22 paragraph 58 [1] online [28] 6/21 40/3 our [6] 32/19 61/24 98/22 101/3 101/4 26/25 27/15 27/19 33/12 54/7 54/25 55/4 59/7 27/19 29/14 29/15 101/22 102/19 102/19 75/21 76/4 106/15 paragraph 7 [1] 7/21 60/23 68/3 73/19 105/4 106/5 106/23 30/8 31/25 33/13 143/25 paragraph 9 [2] 2/13 73/20 75/10 80/7 109/7 114/8 130/5 33/14 33/17 35/23 out [39] 6/24 9/20 2/15 98/15 99/7 99/9 134/1 134/3 135/10 36/2 36/4 36/19 38/22 10/22 14/10 15/13 paragraphs [1] 55/13 114/18 116/22 118/5 38/23 39/3 39/7 39/17 15/24 21/3 26/12 136/19 146/6 parameter [13] 51/10 118/6 119/3 119/4 29/10 40/6 51/7 52/14 page 1 [4] 44/22 39/18 40/9 42/9 42/18 51/15 51/17 51/19 119/20 120/13 120/14 56/19 59/7 59/17 61/4 74/11 106/23 109/7 43/22 45/14 46/20 51/20 51/21 51/23 140/14 141/7 142/17 page 10 [1] 90/25 47/6 47/14 47/14 48/7 66/8 67/10 67/15 52/5 52/9 52/11 52/13 142/23 48/19 49/8 52/22 53/7 68/13 80/15 83/8 89/2 page 13 [2] 66/24 52/16 52/19 only [35] 2/17 2/25 94/11 53/9 55/19 58/25 90/3 100/16 102/18 paraphrasing [1] 3/20 4/18 5/1 7/3 105/23 106/13 106/15 page 15 [2] 28/2 70/1 60/24 60/25 61/5 140/13 15/11 16/20 19/23 64/24 65/2 65/17 68/2 106/16 107/8 107/16 page 18 [1] 1/18 Parker [2] 7/10 61/17 27/17 42/6 44/9 49/11 page 19 [4] 1/19 1/20 68/6 68/9 69/18 69/20 110/20 110/24 111/7 part [38] 1/25 12/17 52/1 52/20 53/14 69/21 74/16 74/25 115/10 126/22 134/4 18/17 135/10 12/24 12/25 13/7 53/19 54/11 54/24 page 2 [3] 7/22 101/3 76/2 76/3 76/9 76/21 137/6 14/22 17/21 23/16 55/4 73/19 75/20 101/4 77/14 81/5 81/7 81/14 outage [1] 69/21 26/2 26/13 27/5 44/4 80/10 83/19 85/3 page 24 [1] 114/8 82/14 84/15 85/6 46/18 48/4 48/16 49/1 outcome [1] 79/23 85/14 87/7 88/2 88/6 page 3 [7] 2/14 55/12 49/17 57/2 62/23 87/15 87/25 88/1 92/7 outlets [1] 72/24 89/11 92/5 97/23 59/6 74/6 98/21 93/2 95/10 96/15 outline [4] 65/22 66/1 63/22 70/13 117/11 98/18 130/24 143/13 96/16 97/5 103/8 101/22 102/19 118/9 118/23 120/19 66/10 133/15 onsite [1] 112/19 page 38 [1] 56/23 106/4 106/16 108/1 outlined [1] 55/14 121/10 123/1 125/19 onto [4] 8/22 25/20 page 4 [3] 40/19 44/2 108/21 109/17 114/18 output [4] 50/20 128/17 129/6 130/9 61/24 64/3 118/4 118/15 119/12 89/17 138/5 139/23 139/24 50/24 51/19 80/1 onus [1] 81/19 page 48 [1] 57/11 119/15 120/9 120/13 140/2 141/8 142/6 outside [3] 71/16 onward [1] 125/12 page 6 [2] 105/4 122/15 122/20 123/2 123/11 142/4 142/17 open [2] 107/23 106/5 123/7 123/17 126/7 outstanding [1] 94/1 part 1 [1] 46/18 109/21 126/15 126/18 127/10 page 7 [1] 18/19 partial [3] 11/15 over [24] 3/11 4/17 opened [1] 74/1 page 8 [1] 84/19 132/15 133/2 134/19 7/8 22/1 22/6 36/8 42/19 57/24 opening [1] 75/6 page 83 [1] 59/16 134/24 136/4 136/16 42/5 43/25 49/3 49/5 particular [6] 18/14 OpenSSH [3] 60/18 page 9 [3] 62/5 130/5 137/23 138/2 138/2 51/9 56/3 57/8 57/19 34/11 85/4 110/1 65/19 68/15 134/3 139/25 140/19 140/22 63/14 89/2 89/21 110/2 114/16 operate [2] 43/21 109/22 117/14 122/12 pages [1] 1/16 particularly [12] 141/6 141/14 142/12 46/19 143/16 143/19 126/16 127/24 134/14 pagination [1] 11/18 25/4 33/5 63/13 operated [1] 25/23 101/23 orally [1] 39/17 136/18 65/12 65/13 65/14

56/17 72/19 101/9 P people [31] 5/7 6/12 picked [8] 26/23 130/5 133/13 135/10 6/19 6/22 14/17 20/12 32/21 48/20 87/7 136/17 137/20 141/22 potentially [2] 6/5 particularly... [5] 26/8 27/2 27/3 27/12 88/14 92/5 94/22 pm [17] 85/23 85/25 29/12 65/18 68/14 68/19 36/6 36/7 36/8 36/9 96/20 88/24 89/19 89/23 pounds [1] 32/18 83/13 88/5 39/4 41/2 41/8 48/9 picking [2] 25/2 90/2 90/4 90/9 90/10 **PowerHelp [4]** 21/2 parties [1] 15/5 63/21 72/4 78/24 25/10 90/11 90/16 90/16 21/4 21/5 89/19 parts [3] 2/1 56/24 79/24 87/2 95/6 113/18 113/20 143/8 practice [4] 31/14 picture [1] 130/3 114/16 119/10 122/4 124/1 143/10 145/3 piece [1] 122/16 31/15 103/18 110/8 party [6] 22/1 135/21 pilot [2] 33/15 33/23 126/13 126/15 136/15 PM's [1] 89/25 practices [2] 33/13 141/20 142/2 142/4 POCL [7] 89/4 89/8 144/18 pinch [1] 144/6 67/18 142/16 per [3] 21/5 21/7 21/9 **PinICL [17]** 3/6 21/5 95/3 95/7 95/9 95/11 prayer [2] 125/2 party's [1] 109/23 25/20 26/7 83/22 93/2 96/11 **Perceived** [1] 74/24 126/12 pass [5] 14/14 19/17 93/3 94/23 95/1 perform [5] 43/22 point [13] 7/3 14/5 prayers [3] 124/6 19/20 70/12 70/13 46/20 48/17 67/6 107/14 107/15 107/18 52/7 95/2 100/12 124/11 124/13 passage [1] 70/1 121/18 121/24 123/12 75/13 109/1 111/11 112/8 pre [2] 35/4 35/4 passed [9] 6/7 10/6 123/14 124/24 115/16 116/24 121/21 pre-scanner's [1] performance [3] 11/22 25/14 26/7 105/24 119/8 120/15 PinICLs [12] 9/16 124/5 129/21 35/4 94/14 94/14 138/19 **performed [4]** 42/15 20/14 24/10 24/13 points [2] 131/17 preclude [1] 91/9 144/10 43/25 49/3 49/5 25/16 25/17 38/23 140/9 predominantly [2] passing [2] 21/11 80/15 92/13 92/25 **POL [14]** 43/22 44/12 63/25 134/16 performs [1] 43/1 94/25 44/14 46/20 55/17 perhaps [7] 26/19 122/1 122/10 prepare [1] 45/14 passwords [2] 70/17 88/19 93/2 94/18 piste [10] 76/22 77/6 55/20 55/24 56/1 56/2 present [3] 22/22 130/14 99/11 100/6 109/11 77/11 77/20 79/25 56/3 57/8 57/23 60/5 57/4 130/24 past [4] 90/13 109/16 period [7] 3/21 53/21 80/7 81/11 81/13 102/6 presented [1] 31/23 113/16 143/5 99/6 99/8 113/12 81/16 82/23 POL00028070 [1] press [3] 13/1 19/12 Pat [2] 91/21 92/19 121/12 125/15 **PIT [2]** 138/20 138/25 59/4 68/17 Pathway [20] 2/8 2/8 **PL [1]** 43/8 permission [13] POL00028743 [1] presumably [3] 65/8 66/11 66/21 place [10] 16/18 30/9 48/12 48/22 49/13 88/17 96/14 126/21 138/12 66/22 68/5 115/12 49/16 49/18 49/24 33/14 72/17 81/20 POL00029750 [1] presume [6] 19/18 115/24 123/11 123/13 50/8 76/8 77/4 79/24 81/24 82/14 91/25 21/16 50/6 88/24 97/7 55/10 123/25 126/13 130/17 80/12 89/12 113/11 111/13 112/4 POL00030029 [1] 107/11 130/23 130/25 133/2 permissions [9] placed [1] 138/9 40/16 presuming [2] 15/24 134/24 140/17 142/4 74/14 75/8 75/20 **plan [1]** 50/15 policy [4] 74/22 49/7 Patrick [5] 91/7 75/23 75/25 77/18 planned [1] 50/15 79/17 121/2 129/10 presumptions [1] 97/16 97/18 97/20 78/13 78/17 79/22 plans [1] 117/24 popular [1] 76/21 21/17 146/7 platform [3] 95/5 persistent [1] 42/1 **populated** [1] 49/7 pretty [3] 95/23 95/24 patterns [2] 22/6 125/7 140/2 person [6] 20/16 portal [1] 8/18 96/5 97/3 72/6 81/16 108/1 platforms [8] 62/18 posing [1] 109/4 prevent [2] 123/1 Pause [4] 10/20 24/9 129/10 137/24 119/18 121/3 128/24 position [2] 18/14 123/2 85/16 144/14 131/3 131/7 132/25 personal [2] 12/7 100/21 **prevented** [1] 24/19 pay [1] 89/2 71/17 134/10 **possibility** [1] 113/8 preventing [1] 4/21 payment [1] 98/23 personalisation [1] please [79] 1/6 1/15 **possible [7]** 8/2 previous [6] 5/25 payments [11] 29/12 2/3 2/14 7/22 10/24 17/24 20/5 43/20 65/7 40/2 41/1 52/6 141/14 126/4 29/18 30/18 33/1 personally [1] 80/24 13/19 13/22 20/20 101/24 124/24 141/14 84/13 98/10 100/5 personnel [2] 63/14 22/15 28/2 30/2 34/4 post [41] 8/6 8/7 8/23 previously [1] 72/16 100/16 100/22 103/19 40/14 40/16 40/19 8/24 9/4 9/13 9/21 134/15 **primarily [3]** 66/11 110/24 Pete [2] 116/15 40/22 40/25 41/14 9/23 10/5 10/7 10/23 120/21 141/1 payroll [1] 100/17 136/15 42/5 43/5 43/9 44/2 11/6 11/14 13/18 primary [8] 29/23 **PBCS [1]** 61/5 Peter [2] 7/18 7/18 44/22 46/14 51/9 26/20 27/13 41/9 44/4 29/25 30/1 30/4 30/6 **PC [3]** 126/1 126/2 54/14 55/10 55/12 44/7 47/15 55/14 60/2 **PFI [1]** 11/12 30/8 31/21 129/15 126/3 phantom [5] 90/23 56/10 56/23 57/11 65/9 65/17 70/24 print [3] 90/6 100/13 **PC Config [2]** 126/1 90/25 91/8 91/15 92/7 59/3 59/6 59/16 59/17 71/12 87/4 99/13 139/14 126/3 60/12 60/13 62/5 99/17 100/2 100/11 printed [1] 90/6 phase [1] 66/8 **PCs [1]** 71/12 62/20 66/25 69/23 103/7 104/8 104/10 printer [3] 89/25 90/5 **phases [1]** 113/10 Peach [5] 8/10 37/2 phenomenon [1] 70/1 73/22 73/25 116/17 117/25 118/11 90/6 37/4 61/12 61/15 74/11 75/5 75/18 76/6 118/20 125/11 126/22 **prior [1]** 139/18 91/11 **PEAK [14]** 47/17 76/11 78/5 78/20 **phone** [1] 19/1 131/5 priorities [1] 123/10 47/24 50/25 73/24 prioritised [6] 122/2 phones [1] 19/6 79/10 82/16 83/20 postmaster [8] 19/6 73/24 74/3 75/6 76/15 122/2 122/20 122/21 83/21 84/18 84/19 phoning [2] 20/22 47/14 88/25 90/20 79/9 83/6 83/8 83/12 88/16 89/17 90/15 100/18 106/18 108/1 122/22 123/5 87/8 88/18 93/3 physical [1] 18/1 93/5 93/14 98/21 108/5 prioritising [1] **PEAKs [7]** 80/15 physically [4] 34/19 101/3 101/22 105/4 122/10 postmasters [1] 80/18 83/1 85/3 88/19 70/4 70/9 71/6 106/23 107/1 114/2 31/24 **priority [1]** 123/8 92/13 92/25 pick [1] 25/24 117/19 117/20 128/5 potential [4] 31/12 prison [1] 86/13

58/25 138/22 122/11 recall [29] 3/10 3/19 P produced [6] 29/19 59/10 59/12 97/13 Public [1] 11/12 quickly [3] 122/15 4/14 4/25 5/3 36/17 privileged [1] 71/11 99/20 144/4 publications [3] 124/24 138/2 38/11 40/7 40/8 40/10 privileges [2] 42/6 produces [1] 100/15 117/15 117/17 143/16 quite [9] 1/20 20/10 40/12 40/13 59/10 42/8 product [15] 3/3 3/15 purpose [6] 17/22 22/11 34/6 38/15 59/11 59/13 59/23 probably [15] 6/23 4/3 4/5 4/8 28/2 28/7 45/20 58/22 65/1 88/18 90/19 90/24 60/10 88/5 105/13 6/24 38/7 38/13 45/16 28/10 34/24 91/5 135/3 140/1 118/22 117/3 117/23 122/2 45/18 58/13 59/24 91/12 117/8 122/6 purposes [2] 130/24 133/16 133/19 133/19 quotes [1] 41/22 61/5 64/18 71/3 82/18 138/20 139/21 136/7 134/3 134/18 134/20 82/25 86/12 92/12 production [2] 138/4 pushed [1] 36/24 problem [40] 16/9 put [21] 8/21 12/2 rage [1] 38/6 118/14 129/11 receipt [2] 29/15 90/5 19/7 20/23 23/22 raise [7] 22/13 22/24 21/23 30/9 45/21 products [4] 6/11 receipts [12] 29/12 23/24 24/8 24/21 30/22 47/11 56/17 25/17 116/9 119/12 61/23 61/23 62/1 29/18 30/18 32/25 28/23 29/15 32/19 85/18 98/18 68/19 69/23 80/2 90/6 98/10 98/23 Professional [1] 2/6 37/8 74/25 84/10 94/4 raised [29] 3/6 3/9 **profile [2]** 76/9 77/4 81/13 82/5 91/25 100/5 100/17 100/22 95/23 95/25 96/5 profiles [1] 138/18 3/11 3/12 21/6 21/7 92/15 96/5 111/13 103/19 110/24 96/12 101/19 101/19 140/18 141/23 144/17 24/14 25/16 32/21 programme [1] 43/10 receive [1] 6/3 103/6 103/23 105/21 33/19 47/5 47/7 48/12 received [2] 22/7 144/18 programmer [2] 106/17 108/1 108/3 48/22 65/15 66/8 122/5 122/6 puts [2] 65/8 81/19 139/15 108/16 108/20 108/24 74/15 81/14 83/21 progress [1] 47/23 **putting [3]** 65/16 receives [1] 67/14 109/16 109/17 110/2 84/25 93/19 94/3 94/5 recent [2] 12/12 progressed [2] 97/1 125/5 110/11 110/13 110/16 94/15 94/23 95/1 102/10 102/14 **PWYDCS [2]** 130/17 109/15 111/8 111/9 111/11 121/16 134/19 140/10 project [8] 5/24 6/2 137/18 recently [1] 39/24 111/17 112/22 6/9 6/14 6/17 10/13 **PWYSAS [4]** 134/22 raises [1] 44/21 recipients [2] 117/25 problematic [1] 138/9 138/17 139/4 ran [2] 18/10 32/2 10/15 34/10 118/20 81/11 range [3] 32/13 41/2 projects [6] 10/11 recognise [2] 60/14 problems [27] 4/12 10/14 10/14 10/18 142/9 60/16 4/14 6/4 6/7 16/5 17/1 QFP [2] 26/4 26/5 rather [8] 21/23 22/2 10/25 115/1 recognised [1] 88/11 17/9 17/23 22/8 25/24 qualifications [2] 2/3 23/19 27/21 44/19 **proof [1]** 92/12 recollection [6] 30/11 33/23 75/2 89/1 114/23 78/3 93/3 106/6 34/12 132/2 132/4 proper [2] 82/13 89/3 89/9 90/12 97/3 qualified [1] 72/9 Rclient [5] 63/25 127/24 132/11 138/8 139/6 105/14 105/17 107/19 quality [5] 2/23 3/2 64/1 65/12 65/16 recommendation [2] properly [4] 4/3 4/5 108/7 108/11 110/4 3/15 26/6 26/9 134/16 4/10 23/17 102/9 102/13 123/16 126/6 141/10 quarter [2] 54/13 reach [3] 101/17 property [2] 4/21 recommended [1] procedural [1] 83/14 143/5 107/9 141/3 140/15 138/8 procedures [6] 33/13 queries [3] 14/14 react [2] 99/4 99/24 reconciliation [9] 9/9 proposal [2] 66/7 70/21 81/20 81/21 41/13 52/3 read [18] 45/22 45/24 102/11 9/10 9/11 9/12 12/5 81/22 81/23 query [5] 43/11 51/19 49/11 54/24 67/1 17/5 19/7 21/10 44/18 proposals [2] 65/20 proceedings [1] 52/2 52/4 108/21 75/20 79/19 80/10 66/4 record [17] 42/14 39/18 88/19 88/19 88/21 question [27] 4/20 55/17 57/7 64/14 **proposed [4]** 73/8 process [31] 23/16 21/20 36/8 43/18 91/21 92/1 95/22 85/5 135/6 135/12 64/21 64/22 64/22 23/25 26/6 26/9 26/14 100/8 107/8 117/13 46/16 46/18 46/22 prosecuted [1] 86/12 65/1 65/3 65/4 68/17 32/16 34/2 36/13 49/1 49/4 51/18 52/10 137/13 70/2 72/16 96/8 prosecutions [1] 36/14 41/20 43/21 52/12 52/18 52/18 reading [4] 9/15 101/14 127/3 127/3 143/23 44/11 44/18 46/19 52/25 53/1 54/22 13/13 41/6 99/22 recorded [13] 10/2 Protection [2] 71/17 47/1 51/2 52/22 52/23 73/11 82/11 87/24 ready [2] 86/7 139/21 73/4 47/23 50/25 51/6 56/7 56/20 57/15 real [3] 31/13 138/21 137/17 137/21 137/22 57/13 58/2 80/19 98/4 proven [1] 91/8 57/19 57/23 58/1 70/5 137/25 141/22 142/2 139/3 provide [10] 17/23 125/18 127/1 127/8 73/7 79/25 83/15 143/13 really [13] 2/25 6/1 18/5 43/4 45/3 67/24 127/11 128/1 95/12 120/6 120/10 99/5 99/25 101/12 Questioned [8] 1/9 6/8 9/3 37/13 38/7 recording [2] 126/21 **processed** [2] 10/3 86/9 97/18 113/25 79/7 82/19 100/24 129/19 138/1 140/12 121/13 146/5 146/6 146/7 109/20 130/24 141/9 provided [14] 11/14 records [5] 42/9 63/3 **processes [5]** 55/18 146/9 143/13 13/10 16/2 16/23 64/15 134/11 136/10 56/5 67/4 102/5 questions [29] 1/11 reason [4] 5/7 50/10 17/13 18/12 60/24 recover [1] 102/4 120/12 41/4 41/7 45/4 46/3 53/3 98/18 recover/refund [1] 65/6 68/12 79/1 99/16 **processing [7]** 55/25 54/5 58/15 58/17 reasonable [3] 16/4 106/11 126/4 141/25 102/4 56/8 56/14 57/16 73/13 73/18 82/9 provider [1] 11/5 50/11 109/13 **recoveries** [1] 75/14 120/19 125/12 142/10 82/10 83/17 83/19 reasons [7] 23/21 provides [2] 66/10 recovery [2] 77/2 processors [2] 23/23 24/14 42/2 69/3 77/10 84/22 85/14 97/14 66/12 106/13 106/16 97/20 109/4 112/24 69/8 140/16 providing [7] 8/4 recreate [1] 8/2 Procter [1] 129/17 112/25 113/5 114/2 **Rebecca [1]** 116/25 18/6 20/11 25/8 113/4 rectification [1] 17/1 procure [1] 68/11 114/15 114/17 144/11 reboot [2] 110/6 115/9 140/2 rectified [2] 105/19 produce [4] 6/6 57/2 144/13 144/16 144/19 111/16 proving [1] 103/2 108/14 77/25 78/2 quick [2] 76/21 rebooted [1] 90/5 **provision [3]** 56/18 rectify [2] 14/15 42/2

114/24 133/23 144/2 9/9 10/25 19/2 25/25 R restrict [2] 72/18 rise [2] 57/14 57/25 reliant [1] 112/11 27/17 104/6 105/16 137/7 risk [1] 72/23 red [2] 9/16 9/16 relied [1] 17/10 105/20 107/20 108/2 restricted [1] 67/9 risks [3] 56/13 59/8 refer [10] 7/10 31/6 religious [1] 124/16 108/5 108/10 108/15 result [7] 12/23 29/12 72/19 50/5 82/18 117/22 religiously [1] 117/13 129/8 42/3 72/23 87/3 98/23 robust [4] 42/21 119/23 121/7 130/20 relying [2] 63/24 reporting [10] 8/5 8/7 121/3 55/21 55/25 115/18 137/13 142/8 12/2 12/5 12/6 12/8 resulted [2] 105/17 134/15 rogue [1] 84/20 reference [15] 1/17 95/15 95/17 108/1 remain [1] 22/2 108/13 role [48] 2/17 4/1 6/2 17/7 17/10 27/25 results [1] 139/6 remainder [1] 14/7 116/14 19/9 20/11 34/22 35/4 43/16 44/1 46/17 55/3 reports [6] 6/5 8/8 49/11 49/15 49/18 remained [2] 2/17 retrospective [1] 77/19 84/20 84/23 5/19 8/10 8/13 8/21 117/24 92/25 49/21 49/23 50/1 50/3 87/5 90/25 117/21 50/12 75/15 75/16 remains [1] 102/7 repository [2] 121/20 return [1] 144/15 124/15 remember [29] 3/14 125/18 returned [1] 116/20 75/20 75/20 75/21 references [2] 25/20 75/21 77/17 77/17 9/14 12/10 35/14 represent [1] 86/10 review [5] 41/11 45/25 35/15 35/15 35/22 representation [2] 61/10 61/20 68/9 78/7 78/15 78/22 80/9 referred [6] 12/11 39/22 41/5 45/10 124/10 126/14 92/25 80/10 80/11 80/23 21/1 74/4 119/14 59/24 63/11 64/4 81/3 82/25 86/14 represented [1] 9/17 reviewed [1] 131/1 127/15 143/15 65/10 65/12 65/13 reviewer [1] 133/18 116/10 119/10 125/6 **Req [1]** 128/1 referring [20] 12/13 65/14 65/15 65/18 request [4] 23/18 reviewer's [2] 61/6 128/4 132/22 136/11 12/15 12/16 12/20 68/14 68/15 68/16 37/24 48/22 49/23 136/15 138/18 139/23 61/9 51/16 53/20 54/25 139/24 140/5 140/6 68/19 79/19 85/9 requesting [1] 50/10 reviewers [1] 117/25 61/9 76/25 78/11 91/21 134/21 134/25 require [3] 81/14 **reviewing [2]** 118/15 141/19 142/7 142/14 91/16 119/1 128/6 140/17 124/10 137/4 140/19 roles [11] 49/13 129/2 129/4 130/9 remind [2] 107/24 required [12] 4/25 reviews [1] 61/13 75/19 78/2 78/4 78/13 130/10 136/19 136/24 109/21 47/5 47/25 50/7 70/25 79/8 125/5 127/25 rewarn [1] 100/14 136/25 rewrite [3] 85/6 85/10 remit [1] 132/14 74/21 75/25 79/16 128/3 130/3 142/3 refers [6] 107/14 137/14 137/15 138/3 roll [3] 42/18 92/23 132/24 remote [14] 40/15 108/3 126/21 130/17 62/17 62/18 62/23 138/12 rig [10] 119/6 119/7 100/20 134/5 134/6 63/9 64/2 64/15 65/13 requirement [1] 119/8 119/16 119/17 rolled [4] 9/20 10/22 reflect [1] 64/17 111/7 115/10 66/8 120/1 132/3 119/25 123/1 123/2 41/24 refund [1] 102/4 132/4 134/9 134/10 requirements [4] 123/3 139/10 rollout [11] 6/15 6/18 refusing [1] 89/4 right [48] 1/20 2/9 6/21 33/15 33/23 54/7 remotely [6] 60/18 42/24 121/2 127/25 refutable [1] 137/5 64/4 64/10 134/16 129/18 2/11 4/22 7/14 13/25 80/6 86/23 103/3 regard [1] 9/24 136/1 140/1 requires [1] 81/16 14/2 15/3 15/4 15/11 107/3 111/25 regarded [1] 128/15 reoccurs [1] 25/21 requiring [1] 70/23 16/11 16/16 16/22 rollover [2] 100/16 regularly [1] 140/23 17/19 23/20 30/9 repair [1] 28/15 research [1] 46/9 104/5 reinforcing [1] 141/3 35/20 36/7 36/9 37/10 Romec [2] 91/17 repaired [1] 112/19 researched [2] 45/17 rejoined [1] 140/17 53/8 54/13 62/10 91/18 repeat [6] 67/14 92/13 relate [3] 19/21 19/22 62/12 66/16 72/8 67/16 68/22 86/5 room [8] 15/3 15/4 researching [1] 57/5 74/17 79/3 83/24 15/5 70/12 72/4 86/4 105/24 141/22 91/22 related [11] 18/21 repeated [2] 26/21 resolution [1] 12/4 87/12 88/16 90/24 86/7 144/13 19/3 19/8 19/16 19/25 26/22 resolve [9] 6/7 14/13 93/7 93/16 97/13 98/6 **root [8]** 26/24 28/22 74/3 85/7 85/10 91/10 repeats [1] 108/17 16/5 17/18 17/23 101/24 102/11 107/10 29/5 29/6 29/10 30/11 123/17 139/7 18/20 44/10 121/22 109/5 110/12 114/21 **repetition [1]** 72/15 31/8 96/2 relating [6] 33/20 replicate [3] 112/14 124/24 115/15 131/22 132/9 rooted [1] 83/9 56/13 75/3 105/14 135/18 139/19 140/16 roughly [1] 124/5 119/18 121/4 resolved [4] 19/19 108/8 114/17 right-hand [1] 135/18 route [3] 35/6 47/4 replicated [1] 110/23 95/25 96/8 96/11 relation [7] 10/2 replicating [1] resource [1] 67/17 rights [1] 4/21 93/15 11/19 41/12 55/2 rigs [4] 119/14 111/18 resources [2] 74/21 routed [2] 61/4 94/13 118/4 119/20 144/3 replication [7] 28/8 79/16 119/22 120/7 121/4 row [1] 57/25 relationship [1] 31/8 31/21 31/23 respect [4] 10/5 23/9 **Riposte [41]** 3/1 3/3 **Royal [1]** 115/6 66/15 32/15 33/3 110/18 118/7 142/4 3/16 4/4 4/6 4/13 4/16 **RS [1]** 128/1 relatively [3] 86/22 replied [3] 58/16 respects [1] 71/22 6/12 22/21 23/1 23/2 RS/Req/012 [1] 128/1 102/18 141/16 23/14 28/2 28/6 28/9 82/10 109/12 respond [1] 59/8 **Rue [2]** 130/20 relayed [1] 10/5 replies [2] 77/23 78/5 responded [1] 109/9 28/13 31/11 32/13 130/23 release [5] 26/14 32/20 38/17 39/5 94/9 rules [2] 81/12 reply [4] 106/4 106/6 | responding [1] 55/15 107/4 108/23 108/25 109/7 111/23 96/4 107/17 109/16 response [1] 44/3 129/18 119/9 report [16] 7/12 9/12 responses [1] 112/13 112/13 112/14 run [9] 31/25 48/12 released [8] 12/9 12/10 12/18 13/7 112/15 112/18 112/22 48/14 48/21 49/10 139/15 12/17 12/25 13/5 13/6 13/17 27/13 31/25 123/18 123/20 123/21 62/23 78/14 78/25 responsibility [3] 13/16 103/5 107/17 32/2 32/10 55/11 59/5 126/7 131/17 131/18 32/6 124/7 126/17 121/11 releases [2] 9/20 140/20 140/22 141/17 running [2] 99/7 99/8 59/10 59/14 60/8 responsible [8] 8/5 10/22 8/7 33/8 122/5 125/2 136/15 141/24 relevant [5] 42/7 57/8 reported [15] 7/16 125/14 126/18 133/1 ripples [1] 141/2

90/8 90/18 91/19 116/12 120/25 122/24 70/22 111/10 S 93/14 93/18 95/3 125/4 125/5 125/5 **sensitive** [1] 71/18 **SFS [3]** 62/8 62/12 safe [1] 4/24 105/11 105/12 106/9 127/13 127/14 127/14 sent [6] 61/13 61/25 134/4 said [23] 3/5 19/13 107/12 107/15 107/18 127/17 127/25 128/3 86/13 95/20 104/24 **shaking [1]** 85/15 23/14 27/13 32/9 108/5 108/12 108/19 128/4 128/23 129/14 106/25 **shall [1]** 143/4 34/25 37/3 38/7 54/23 108/25 109/8 109/14 129/23 130/3 132/22 sentence [10] 7/23 **shape [2]** 128/11 55/2 57/17 57/20 110/7 111/2 111/22 133/15 134/24 135/18 18/23 42/22 44/13 129/19 57/24 58/13 68/12 47/19 49/17 51/22 130/5 130/25 137/2 135/21 136/20 136/23 **Shaun [4]** 105/6 69/8 78/9 93/25 94/8 137/16 138/9 138/18 138/18 62/19 64/12 68/22 105/6 105/7 106/6 99/6 131/9 140/13 140/5 140/6 142/7 separate [8] 23/8 she [41] 34/6 34/10 scale [1] 38/4 143/14 scanner [1] 35/4 142/14 40/14 52/2 70/14 34/10 34/12 34/13 sales [1] 105/11 security [33] 37/23 70/16 70/16 72/3 34/24 35/8 35/17 scanner's [1] 35/4 **salt [1]** 144/6 schedule [3] 56/16 44/4 50/7 50/9 62/9 137/19 35/19 35/22 36/15 Sam [1] 114/1 57/3 57/4 62/12 62/13 64/20 36/16 36/17 36/18 separation [1] 82/3 same [10] 5/25 15/3 70/5 70/11 72/4 74/22 scheduler [1] 121/8 **September [4]** 103/7 36/22 36/22 37/1 15/5 25/13 25/16 schema [1] 43/14 79/13 79/17 82/5 105/13 108/6 115/13 37/11 37/12 37/13 26/22 58/7 94/9 scope [3] 75/2 88/10 82/13 116/5 116/7 37/13 37/15 37/17 **sequence [1]** 121/12 118/16 133/11 131/2 118/18 121/2 128/15 series [2] 54/5 37/18 38/2 38/7 38/7 Sandra [3] 105/7 screen [10] 2/15 129/2 129/5 131/15 104/18 38/8 76/17 77/5 77/11 105/11 106/11 24/24 30/17 40/17 133/4 133/6 133/24 107/10 109/11 109/12 serious [1] 85/1 **Sandra's [1]** 106/10 85/21 89/25 90/2 90/3 134/2 134/6 134/8 110/1 110/1 111/2 server [15] 64/3 sat [1] 69/4 90/4 132/17 137/2 137/14 137/15 69/21 72/1 72/3 89/19 111/9 129/10 129/11 **satisfy [1]** 139/20 script [16] 19/11 see [79] 1/3 11/11 131/18 131/19 131/24 129/11 save [1] 79/9 19/15 19/18 19/23 18/23 25/5 25/17 134/24 135/17 135/18 shell [1] 43/4 saves [1] 43/1 48/14 77/3 77/8 77/9 28/18 40/22 41/1 41/3 135/22 136/20 136/23 short [7] 2/17 3/20 saw [5] 22/12 39/12 77/21 78/1 78/14 41/7 44/2 44/25 52/8 142/12 54/18 85/24 100/24 81/4 81/8 133/16 78/15 78/25 127/14 54/20 55/11 57/9 servers [20] 66/19 113/13 143/9 say [87] 2/15 3/25 57/12 59/6 59/19 61/6 119/18 119/24 120/5 139/1 139/17 **shortly [1]** 121/6 4/17 5/1 6/18 6/21 7/1 scripts [26] 19/4 62/6 69/16 69/21 120/6 120/21 125/10 should [19] 1/12 11/2 7/23 8/12 9/18 10/3 19/10 48/1 48/21 72/22 73/24 74/6 74/7 126/25 127/2 130/21 22/2 54/24 67/1 67/15 11/19 15/2 15/8 18/1 53/11 75/12 76/3 76/7 74/12 74/15 76/14 131/1 131/21 131/25 69/25 78/14 79/8 85/5 18/19 19/9 20/20 76/10 76/18 76/20 76/15 79/10 79/18 131/25 132/25 133/12 102/8 102/10 102/14 21/21 22/13 23/1 25/8 77/1 78/8 120/16 86/1 88/18 89/16 134/25 135/2 138/9 102/17 107/24 114/7 26/23 27/19 27/23 120/17 121/1 128/22 125/17 136/18 143/23 89/17 90/25 91/2 91/6 138/10 28/4 33/12 35/8 35/12 129/13 132/19 138/19 93/5 93/12 94/24 95/3 service [31] 6/5 8/11 **shouldn't [2]** 115/20 36/16 36/25 37/17 138/21 138/25 139/2 96/22 98/2 98/4 98/7 8/18 9/2 9/3 9/22 10/7 137/10 38/6 40/8 45/5 46/14 139/4 139/8 139/13 98/9 98/22 101/4 11/5 11/23 12/3 12/10 show [1] 96/8 47/16 50/17 50/23 scroll [16] 57/11 101/14 102/9 102/20 12/18 13/7 13/17 14/8 showed [2] 100/24 51/9 53/1 53/12 54/7 104/18 104/21 104/22 66/25 73/25 74/7 14/11 16/24 17/23 101/1 57/3 59/18 62/16 65/3 104/23 104/25 105/3 17/25 26/2 26/17 74/19 76/11 76/13 shown [6] 56/24 86/4 73/19 78/20 80/7 82/1 78/5 78/20 102/19 105/5 106/3 106/17 27/10 27/10 48/4 86/6 131/16 132/17 82/22 82/24 85/4 92/7 104/21 105/2 106/3 107/1 107/8 107/12 72/24 105/11 119/19 133/14 92/17 94/19 95/21 side [5] 69/23 106/15 106/25 109/7 135/10 107/19 107/22 109/7 120/4 121/5 125/9 96/22 100/11 108/3 111/15 111/21 111/25 138/22 120/25 135/18 138/15 Sean [1] 40/20 109/19 110/2 111/23 searchable [1] 62/2 112/2 113/21 114/7 services [13] 11/13 sign [3] 70/23 71/5 111/24 112/6 113/14 134/1 136/3 140/12 13/21 17/12 18/6 71/5 **searches** [1] 30/5 114/19 115/12 115/24 18/12 18/13 47/9 68/4 signature [2] 1/18 seat [1] 86/7 143/11 115/25 116/8 117/22 second [18] 7/23 seeing [4] 13/14 126/19 135/2 136/1 114/9 117/23 118/18 118/23 14/15 15/17 15/19 13/15 38/12 81/7 137/9 138/23 signed [3] 69/15 125/1 128/8 128/14 16/1 16/11 18/22 seek [2] 14/13 122/7 81/14 86/22 set [19] 51/7 52/9 129/2 129/14 136/3 19/17 19/20 21/1 49/1 seemed [1] 97/9 52/19 59/17 68/13 similar [3] 94/8 138/7 141/9 142/6 76/4 78/10 78/16 79/8 135/19 142/3 57/12 67/5 67/15 seems [3] 79/2 143/22 144/7 69/18 104/16 132/20 80/11 123/10 124/21 109/13 110/8 **Simpkins [16]** 1/5 1/8 saying [22] 29/17 137/14 124/25 125/7 125/16 1/10 54/4 54/22 59/21 **Seemungal [2]** 46/13 30/17 31/18 45/11 secondly [1] 43/24 46/15 129/18 132/20 134/4 85/13 86/3 86/6 86/10 51/3 51/22 52/1 52/22 SecOps [4] 49/24 seen [4] 25/9 59/11 142/19 97/19 104/17 112/24 53/13 53/18 54/8 60/24 75/7 sets [5] 56/19 59/7 49/24 79/23 80/11 113/4 113/9 146/4 62/19 77/11 78/16 Section [1] 41/17 selected [1] 2/1 81/21 81/24 144/3 simple [5] 43/3 100/7 80/23 81/2 88/12 137/17 137/23 138/2 Section 5.6.2 [1] selection [1] 39/16 setting [1] 138/17 90/20 92/6 97/2 129/1 41/17 send [2] 95/11 96/17 **settings** [1] 51/23 simply [4] 64/15 65/7 137/9 sections [1] 67/12 senior [7] 40/22 44/3 seven [1] 125/16 101/16 124/14 says [35] 19/6 44/8 since [2] 51/11 51/25 115/7 122/7 128/21 secure [39] 66/13 seven years [1] 63/7 70/19 76/17 77/5 70/4 70/9 70/18 70/18 129/5 129/7 125/16 sir [21] 1/3 24/25 88/24 89/2 89/7 89/10 71/16 116/1 116/11 sense [2] 66/23 several [2] 110/9 54/1 54/14 54/20

S solution 2 [1] 102/13 | speak [5] 9/1 20/20 126/19 130/6 130/7 **stock [7]** 100/9 **solutions [3]** 101/24 20/23 90/18 113/11 132/14 132/18 132/22 100/15 100/22 103/20 sir... [16] 85/17 86/1 114/25 115/2 speaking [1] 87/23 133/2 133/9 105/15 106/14 108/8 97/16 112/25 113/8 solving [1] 141/9 specialised [1] 34/25 SSC's [1] 65/15 stolen [1] 32/18 113/14 113/17 113/21 some [39] 9/16 10/18 specialism [2] 6/10 **SSH [5]** 135/19 stop [5] 71/6 102/24 142/24 143/3 143/11 11/11 12/17 13/9 35/2 135/19 135/20 140/4 103/14 103/21 119/14 144/11 144/13 144/15 13/10 20/14 20/18 specialist [7] 5/24 140/7 stopping [2] 8/12 9/5 144/23 145/2 24/10 24/13 24/14 6/2 6/9 6/17 34/10 stability [1] 68/2 stops [2] 66/11 sit [1] 34/19 28/16 32/1 38/17 40/2 34/24 38/17 staff [8] 47/6 67/14 110/16 site [4] 70/9 70/12 45/3 45/7 45/12 61/24 67/24 69/12 70/11 specialists [3] 6/13 storage [1] 61/23 107/24 109/16 62/23 67/9 70/9 72/9 6/14 36/11 108/22 117/25 118/11 **Store [2]** 57/14 58/3 sites [2] 109/18 80/4 83/20 86/11 specific [4] 11/21 stage [8] 6/18 6/21 **stored [2]** 125/15 110/3 86/12 87/6 94/23 51/18 117/3 138/10 10/14 45/11 74/4 127/1 **SITTDRL [1]** 130/19 106/13 109/4 114/15 specifically [2] 72/13 | 83/10 114/23 117/1 **storms [2]** 110/5 sitting [1] 140/4 119/22 120/8 124/10 115/16 **stamp [3]** 51/13 110/9 **situation** [1] 44/18 straight [1] 22/25 124/19 133/7 138/1 specification [6] 62/9 51/13 84/15 situations [1] 122/17 62/13 62/14 131/16 140/12 **stand [1]** 26/5 straightforward [1] six [3] 18/19 78/20 somebody [8] 32/6 134/7 134/8 **standard** [1] 61/2 102/18 82/2 41/14 48/19 74/15 **specified [2]** 67/11 stands [1] 114/14 strange [1] 34/20 **Six months [1]** 78/20 80/18 81/17 105/10 start [11] 34/12 34/13 stress [1] 89/9 123/7 sixth [2] 4/24 70/12 106/19 speculate [1] 21/24 78/10 79/11 86/16 strikes [1] 24/17 **skip [2]** 55/12 61/8 someone [6] 18/25 speculation [1] 21/17 104/22 106/24 114/6 strokes [1] 127/3 **Skipping [1]** 72/15 20/15 45/3 52/21 spent [2] 82/22 129/21 143/4 143/15 strong [1] 120/24 **Sky [1]** 143/22 61/14 90/18 105/23 started [2] 117/12 strongly [1] 89/7 **slight [1]** 143/1 **split [2]** 21/13 21/14 124/6 something [26] 8/17 **structure [4]** 87/25 **slightly [2]** 6/23 22/11 22/12 25/9 125/5 137/23 140/3 **splitting [1]** 22/3 **state [1]** 114/3 33/22 **spoke [3]** 37/1 59/13 25/19 26/19 26/20 statement [39] 1/12 **structured** [1] 43/10 slow [3] 63/9 63/11 26/25 55/6 69/5 77/12 90/10 2/13 7/22 9/18 10/1 STSA [1] 89/21 134/13 78/9 87/9 95/5 97/7 spoken [3] 31/17 15/2 18/17 18/19 stuck [1] 76/19 small [2] 136/18 studied [1] 2/4 98/11 98/12 103/24 109/11 117/7 19/13 24/23 28/3 138/23 sub [3] 130/22 104/2 105/25 106/12 **spoof [1]** 115/20 29/11 31/6 33/12 **SMC [11]** 16/2 21/12 109/19 109/24 121/7 **spoofing [1]** 115/19 53/15 53/17 53/18 134/25 138/11 21/14 21/16 25/5 140/9 142/3 72/8 74/19 79/18 **spot [1]** 97/3 sub-domain [2] 27/19 32/21 47/14 sometimes [12] 5/14 | SPTS [1] 138/22 100/20 100/20 101/1 134/25 138/11 110/3 110/8 111/14 6/3 22/15 22/17 22/19 **SQL [3]** 43/8 43/10 103/21 104/6 113/5 sub-domains [1] **SMP [3]** 8/17 8/19 22/23 23/14 25/19 114/7 114/8 114/11 130/22 43/11 8/24 29/8 29/21 88/18 square [1] 110/19 114/19 117/18 117/22 subject [2] 127/24 sniffing [1] 144/1 111/10 118/8 118/21 121/8 128/16 **SSAS [1]** 136/20 so [274] 124/9 124/22 128/14 sorry [47] 3/8 8/12 **SSC [98]** 5/10 5/14 subparagraphs [1] **Society [1]** 2/6 144/20 9/11 10/25 11/21 5/19 5/20 5/22 6/9 59/9 **SOD [2]** 65/20 65/21 12/14 13/1 13/15 6/19 6/22 7/1 7/12 statements [1] 119/2 subpostmaster [17] software [25] 2/4 4/3 14/24 15/16 18/18 7/14 7/24 8/5 12/2 stating [4] 90/2 19/2 20/15 29/16 5/9 5/13 5/18 16/1 21/10 23/21 24/12 14/22 15/6 16/25 17/8 105/21 108/16 127/20 30/24 32/11 33/4 84/1 16/9 16/12 17/1 18/13 24/25 25/12 26/6 27/6 87/19 87/23 88/2 88/6 18/11 21/8 26/1 27/6 **station [2]** 72/5 18/21 19/3 19/8 19/16 27/12 29/25 30/1 33/2 27/20 34/6 34/9 34/24 142/12 105/16 105/19 105/22 19/21 19/22 19/25 35/3 35/6 35/13 35/24 stations [2] 115/9 106/11 108/10 127/4 45/23 52/2 52/12 60/3 20/23 20/25 87/16 60/4 61/17 69/25 36/3 36/6 36/8 36/22 subpostmasters [30] 115/9 111/7 112/18 112/21 80/16 80/25 84/8 86/5 36/24 37/1 37/3 41/24 stay [1] 85/20 8/4 9/25 13/22 14/4 139/1 141/20 87/14 100/15 108/20 42/2 42/6 42/8 42/10 Stein [1] 85/15 20/4 20/6 20/9 20/13 solely [2] 126/12 120/3 122/19 131/13 47/17 47/20 47/21 21/6 21/8 21/12 26/20 step [4] 7/8 27/21 142/23 132/7 133/21 133/23 48/14 49/10 52/21 27/23 82/2 30/14 31/5 31/16 **solicitors** [3] 13/10 134/23 134/23 136/19 53/21 59/21 61/1 steps [1] 82/2 32/23 33/9 33/15 13/11 97/22 143/1 144/2 61/13 61/20 61/22 33/20 33/24 39/18 **Steve [6]** 7/8 7/10 solution [30] 6/11 61/24 62/1 62/3 66/17 7/10 7/17 7/17 93/6 48/18 55/16 86/11 sort [9] 79/11 87/9 43/3 67/22 79/20 80/2 102/20 105/23 115/18 68/6 68/11 69/16 **Stevenage [5]** 15/16 87/8 88/8 88/13 92/5 93/25 102/1 102/10 117/7 120/11 124/15 74/13 74/20 75/12 15/18 15/19 15/21 97/21 101/17 102/10 102/13 102/16 75/15 75/15 75/16 128/10 16/20 subsequently [2] 103/8 104/1 110/14 sought [1] 16/4 75/20 75/24 76/8 **STEVENS [4]** 113/25 105/18 108/14 112/1 112/12 114/21 76/19 77/3 78/6 78/7 114/1 144/22 146/9 **sounds [2]** 26/15 substantially [1] 41/9 115/13 118/19 121/11 78/10 78/12 78/16 Stewart [4] 104/24 103/10 subsystems [1] 124/3 125/14 125/19 source [6] 4/18 4/22 78/17 78/22 78/25 106/24 107/1 111/21 121/14 135/15 135/16 135/21 4/23 55/19 57/20 58/7 79/1 79/15 80/8 81/10 still [8] 6/16 8/15 success [1] 65/6 136/13 139/5 140/20 44/7 80/9 90/13 111/2 success/fail [1] 65/6 sources [1] 57/5 81/15 82/12 84/5 142/23 **such [9]** 9/25 53/4 space [1] 122/24 86/24 89/15 97/13 111/5 143/19

S such... [7] 65/8 68/11 81/22 100/2 119/24 126/19 135/23 suffered [1] 89/9 **sufficient [1]** 45/14 suggest [2] 42/24 93/12 suggestions [2] 56/17 102/2 suggests [1] 109/11 suitability [5] 35/23 36/4 36/19 36/21 39/6 **suitable [1]** 78/3 suits [1] 144/24 summarise [1] 114/23 summary [6] 14/13 48/24 48/25 59/6 74/11 75/6 supplemental [3] 86/17 86/19 87/2 suppliers [2] 141/21 142/17 **supply [1]** 8/2 support [108] 5/10 5/11 5/13 5/15 5/16 5/18 7/24 8/5 9/4 9/8 10/13 13/21 13/23 14/1 14/4 14/8 14/15 15/17 15/20 16/1 16/6 16/12 16/22 17/3 17/4 17/13 17/16 17/22 17/23 18/12 18/13 18/20 18/22 19/1 19/8 19/16 19/24 20/5 20/7 20/16 21/1 22/2 22/5 26/2 26/11 27/3 27/5 27/12 29/2 29/9 47/4 47/6 47/18 47/22 48/13 48/14 48/19 48/20 49/10 50/6 50/24 60/17 65/22 66/13 67/4 67/5 67/7 67/14 67/17 67/18 67/19 67/21 67/24 68/10 70/3 70/5 71/10 71/23 71/23 71/25 72/1 72/6 72/6 72/7 80/22 82/19 87/22 93/9 93/11 93/12 93/25 94/15 94/16 95/6 96/10 96/17 105/20 106/2 108/15 112/9 126/19 127/21 133/15 135/25 136/20 137/3 137/9 142/21 supported [2] 71/24 102/5 supporting [2] 119/7 119/11 sure [18] 7/17 7/18 7/19 8/16 12/9 13/2

21/2 28/25 50/10 75/25 81/21 82/1 84/24 86/20 102/17 106/14 118/9 136/12 surprise [1] 117/16 surprised [3] 45/22 45/24 46/1 suspect [1] 77/24 **suspected [1]** 30/15 suspend [1] 89/4 suspense [1] 100/11 **SV [2]** 118/12 119/6 swap [1] 106/16 switch [7] 49/21 49/23 49/25 65/19 78/13 78/15 82/25 **switched [3]** 80/23 81/3 81/9 sworn [3] 1/5 113/24 146/8 system [69] 2/19 3/1 5/11 5/15 5/16 6/5 10/3 10/12 14/10 14/17 16/2 16/8 16/17 16/24 17/14 18/3 23/6 25/3 25/4 25/11 25/12 25/18 25/21 25/23 25/25 26/22 28/14 28/16 32/19 34/1 43/6 48/1 48/21 55/16 55/21 59/7 65/22 66/1 66/19 67/8 67/23 70/13 70/14 70/15 70/16 80/25 81/1 81/2 89/14 90/16 90/17 90/22 95/16 101/8 101/19 105/14 107/20 108/8 117/1 118/24 119/6 120/13 121/17 121/24 123/14 133/15 137/4 137/7 140/23 systems [25] 7/25 13/19 26/15 48/5 56/6 56/7 64/15 66/13 66/18 70/3 71/12 119/19 120/21 125/11 127/21 130/18 130/23 teams [18] 8/1 9/23 130/23 132/6 132/7 133/9 135/13 137/4 137/6 139/10 table [16] 43/16 43/25 46/17 49/3 49/5 49/6 49/7 52/13 53/6 97/8 98/2 98/9 130/10 130/11 131/20 131/21 115/7 technically [1] 36/11

tables [6] 42/7 43/14 53/4 53/8 129/24 130/4

take [15] 26/13 27/21 27/23 37/5 58/24 69/20 87/14 89/8 98/1 110/8 111/10 124/23

124/25 144/5 144/21 32/5 32/7 33/18 34/6 taken [13] 2/16 24/23 59/3 60/11 67/21 86/7 89/21 99/3 99/23 124/7 126/19 128/22 141/17 taking [1] 117/5 talk [10] 9/7 20/10 20/16 33/20 37/23 38/18 58/13 68/14 107/14 107/25 talked [1] 46/10 talking [20] 10/19 16/14 20/15 26/19 29/2 30/24 46/23 53/22 53/22 54/10 68/15 71/3 71/4 75/22 77/1 77/8 82/17 84/11|terminology [2] 6/10 109/2 110/18 task [1] 141/17 tasks [1] 75/13 taught [1] 3/1 TDA [2] 133/24 134/2 team [75] 4/1 4/19 5/20 5/22 7/1 7/3 7/4 7/9 7/12 7/24 7/25 9/2 9/22 12/19 15/7 16/15 119/7 119/8 119/10 17/3 17/7 18/22 19/20 119/14 119/16 119/17 21/4 23/18 26/9 27/23 119/25 120/7 121/4 35/6 49/24 49/24 49/25 53/10 55/15 59/21 61/4 79/3 79/5 82/3 83/9 87/12 87/25 142/18 88/12 90/10 92/8 93/24 95/1 96/10 112/9 113/11 116/1 116/8 116/12 116/16 118/9 118/12 119/5 119/10 119/12 122/3 122/4 123/25 127/16 128/21 133/6 136/12 136/16 138/20 138/21 138/22 138/23 138/25 139/19 139/22 140/13 140/18 tests [2] 115/21 140/19 140/25 141/1 141/8 16/23 17/17 21/11 21/13 22/2 26/4 26/11 27/3 27/5 27/10 27/12 37/23 115/10 121/17 124/8 141/4 technical [14] 16/5 17/23 18/5 18/6 39/3 39/4 39/4 41/11 44/3 45/4 46/2 87/2 87/6

technique [1] 139/12

techniques [1] 65/8

technology [1] 129/8

20/2 21/2 21/4 29/11

teenage [1] 144/1

tell [19] 2/3 12/21

52/16 81/16 82/7 82/15 82/20 110/3 127/7 127/8 139/16 telling [1] 13/12 template [1] 142/14 templates [3] 125/6 142/7 142/7 temporary [1] 79/25 ten [1] 34/8 ten years [1] 34/8 tend [1] 117/11 tended [1] 25/7 tendency [1] 92/21 term [2] 5/13 9/14 terminal [3] 127/5 135/2 135/17 42/17 terms [11] 28/5 58/11 87/9 96/15 119/15 122/11 125/1 130/13 131/2 134/20 139/3 test [27] 8/3 19/23 48/1 48/21 103/1 117/24 117/24 119/6 123/1 123/2 123/3 140/18 141/1 141/4 tested [1] 120/10 testing [24] 8/1 115/2 115/14 115/16 115/17 115/22 118/9 118/10 118/22 118/24 119/1 119/5 119/8 119/9 120/15 120/23 120/24 121/15 138/13 139/3 139/7 139/8 139/18 119/6 TEWKDLR [1] 130/19 text [1] 89/15 than [19] 11/1 21/23 22/2 23/19 24/19 67/20 70/20 74/20 106/6 126/8 126/11 thank [49] 1/4 1/5 5/9 25/1 33/11 40/18 41/1 44/24 54/12 54/16 54/22 55/10 60/11 61/19 62/5 63/2 70/2 73/6 73/22 76/13 85/13 85/22 86/3 86/8 93/2 97/14 100/5 101/3 104/16 105/5

114/5 114/14 115/12 116/16 117/20 130/5 136/19 143/3 143/7 143/12 144/18 144/20 145/2 that [825] that's [68] 5/21 7/11 7/24 11/2 11/20 15/4 23/8 24/15 26/19 39/25 48/25 49/18 50/6 51/1 51/13 52/23 55/8 57/21 59/13 61/11 62/9 64/2 64/4 65/22 69/6 73/7 75/21 76/2 76/11 76/12 76/15 77/1 81/16 82/5 83/25 84/13 84/20 90/24 91/23 95/4 95/5 98/17 98/20 99/15 101/16 101/21 106/22 111/4 112/4 112/18 112/21 113/2 114/22 115/15 116/6 116/21 121/20 122/14 122/15 130/7 131/22 132/20 133/14 134/21 136/25 139/19 140/4 143/6 theft [1] 39/18 138/21 138/23 139/10 their [18] 19/9 33/6 35/7 35/7 57/2 67/6 76/18 89/15 95/12 105/14 108/7 115/10 115/11 128/16 128/18 128/19 137/7 142/21 them [38] 15/8 16/24 17/7 19/2 19/5 19/11 20/10 20/18 25/7 32/1 32/7 32/17 34/1 46/7 58/22 73/13 77/3 82/15 82/18 86/11 86/12 86/15 87/17 97/1 97/5 100/3 106/16 110/4 110/5 115/5 119/11 119/12 121/22 121/22 122/2 122/11 128/18 139/9 TfS [3] 47/7 47/8 48/6 theme [2] 22/7 27/23 themes [4] 25/2 25/10 25/24 27/15 27/21 33/5 34/7 44/19 themselves [3] 30/25 48/20 133/3 78/3 79/15 80/18 93/3 then [109] 4/17 5/9 5/12 6/5 7/8 7/8 9/7 9/12 14/1 14/14 15/14 17/12 17/16 19/19 20/5 22/13 22/25 25/11 25/13 28/17 29/22 30/8 30/18 31/25 32/20 34/4 34/16 35/6 36/24 37/7 38/2 40/25 41/22 43/16 43/18 43/24

112/23 113/4 113/7

113/14 113/17 113/23

138/24 139/2 139/3 97/2 125/5 69/14 69/15 84/8 84/8 82/12 82/16 88/15 91/23 94/21 122/12 139/15 141/2 142/7 told [13] 20/4 20/6 84/12 84/14 84/16 then... [73] 44/1 138/15 141/7 though [1] 52/15 29/6 30/14 30/24 31/5 89/24 90/23 91/1 91/8 44/21 44/23 46/16 think [97] 4/23 5/12 thought [5] 36/10 31/16 31/19 32/3 46/4 91/15 92/7 120/12 46/16 46/17 47/22 5/17 5/19 5/22 6/1 59/25 78/6 78/9 68/16 88/5 92/4 120/18 120/20 126/22 48/5 49/8 49/25 50/21 6/13 6/16 6/20 6/23 143/16 tomorrow [2] 144/24 | transcript [1] 1/17 51/7 51/9 52/4 55/12 6/24 7/7 9/6 13/25 thousands [1] 32/18 144/25 transfer [10] 79/6 56/10 56/19 57/11 15/2 16/18 16/22 thread [1] 111/21 **Tony [1]** 7/7 110/20 110/20 110/21 57/25 61/8 61/14 17/12 20/11 24/16 three [9] 7/9 14/1 too [2] 22/16 22/17 110/22 110/23 110/24 61/15 61/21 65/14 31/15 34/25 36/10 20/5 56/1 56/6 59/4 120/4 125/8 130/22 took [2] 7/8 132/18 67/13 70/19 74/10 37/18 38/11 38/25 79/11 101/5 115/4 tool [35] 28/15 42/25 transferred [3] 47/17 74/19 75/5 75/9 76/2 39/24 41/8 51/12 43/3 48/13 48/14 49/6 79/2 115/24 three months [1] 76/11 77/5 78/5 78/8 53/15 53/15 58/13 79/11 49/10 49/22 50/14 **transfers** [6] 21/4 78/16 78/19 79/2 60/23 61/15 62/9 50/16 50/16 50/24 105/15 105/17 106/14 three years [2] 59/4 79/18 82/23 83/8 51/4 51/6 53/1 53/3 66/24 74/3 74/4 74/5 115/4 108/8 108/11 86/23 87/15 87/17 53/9 64/2 64/14 77/12 translate [1] 121/1 74/7 76/2 76/12 76/13 through [23] 9/16 89/10 90/3 93/13 76/19 77/1 78/12 79/7 10/7 10/15 11/22 77/14 120/16 132/20 translated [1] 132/16 95/12 96/14 100/13 79/22 80/1 81/4 81/8 19/15 26/8 27/20 135/6 135/11 137/11 **TRC [1]** 134/13 100/19 101/11 103/11 83/9 83/21 84/20 48/18 56/1 79/9 80/11 138/12 139/7 139/23 tree [1] 30/4 104/5 107/24 108/5 86/19 86/20 88/12 80/15 87/22 88/4 139/25 140/4 140/7 trend [3] 24/1 24/14 108/25 110/21 111/7 88/21 91/1 92/8 92/23 91/21 92/13 96/10 142/10 142/19 142/22 26/24 111/18 116/8 118/21 92/24 94/7 94/15 98/3 97/8 120/16 121/17 tooling [4] 50/14 trending [1] 25/21 121/13 124/22 126/3 98/9 98/12 99/22 124/25 129/18 137/11 50/20 52/3 128/22 trends [6] 22/6 22/10 126/16 127/13 129/18 101/21 101/23 102/9 throughout [1] 19/11 tools [7] 63/24 67/5 25/11 25/15 25/24 130/19 134/25 138/20 102/23 103/7 103/13 132/21 132/21 134/16 27/15 **Thursday [1]** 145/4 139/16 142/15 ticket [10] 26/7 26/12 104/16 105/10 106/5 139/2 142/20 tribunal [1] 89/8 theoretical [3] 23/19 107/3 107/22 112/9 top [11] 38/6 74/17 27/22 29/8 29/10 tried [1] 107/9 24/2 24/19 93/8 98/2 98/9 98/21 112/23 112/25 113/16 30/22 33/19 33/21 trigger [1] 126/2 there [204] 116/20 117/10 123/21 35/3 35/5 102/11 102/19 106/4 **TRIOLE [1]** 47/9 there's [27] 19/7 127/14 128/1 128/10 130/25 140/4 tickets [3] 6/3 21/3 **Trotter [2]** 106/6 24/17 24/18 27/23 131/2 131/12 131/14 35/8 topic [1] 22/13 106/7 27/24 30/25 46/17 135/14 136/18 137/22 tidy [1] 77/2 topics [1] 97/23 true [7] 1/21 52/14 51/1 51/3 52/4 53/4 138/5 139/12 topped [1] 6/24 71/13 71/20 114/11 **tidyup [1]** 75/13 79/4 91/19 93/25 totally [2] 8/17 70/16 **thinking [2]** 72/13 tight [1] 45/17 118/8 122/9 98/18 98/22 99/1 128/17 time [51] 2/18 2/19 touch [1] 90/11 trust [1] 90/16 102/1 102/1 102/20 2/21 2/24 2/25 3/4 3/5 touched [1] 125/19 try [4] 6/6 6/7 46/25 third [24] 16/6 16/22 103/13 105/6 107/18 17/21 20/15 22/5 3/20 4/2 5/18 6/24 touching [1] 95/16 69/19 110/14 111/5 112/1 trying [5] 12/22 23/21 17/24 22/16 23/6 28/5 toward [1] 41/14 48/20 67/7 67/14 112/8 67/17 67/19 67/24 34/6 34/13 40/6 45/14 towards [1] 143/14 23/23 46/24 105/23 thereafter [2] 83/8 68/10 71/10 86/16 turn [14] 1/15 23/5 47/1 47/10 51/12 **Tower [2]** 115/6 83/12 87/1 109/23 112/9 51/13 53/7 53/21 54/7 141/1 28/2 34/4 40/14 83/20 therefore [6] 19/17 127/20 135/21 137/3 60/24 60/24 60/25 **TPS [3]** 28/16 30/20 101/3 122/17 127/13 58/24 77/13 91/4 141/20 142/2 142/4 63/14 80/4 80/16 85/1 94/21 127/13 128/13 130/5 91/11 95/6 85/8 94/9 95/10 96/24 track [1] 136/16 142/16 134/1 135/10 these [20] 6/15 8/23 107/16 110/9 113/2 trade [2] 39/21 117/9 | Turner [2] 105/7 this [246] 28/7 28/15 28/16 117/2 117/14 122/12 trading [7] 53/16 **Thomson [1]** 116/25 106/7 31/20 56/5 58/15 **thorough [1]** 106/15 123/10 123/18 129/9 100/19 100/20 100/21 **Tweet [2]** 13/13 81/5 67/11 75/19 82/25 thoroughly [1] 45/18 133/25 134/14 142/25 101/1 103/20 104/6 Twitter [1] 13/9 88/19 89/3 91/10 those [56] 3/12 9/12 143/4 143/24 trail [4] 58/5 63/3 two [18] 15/10 52/3 96/18 110/9 111/4 10/9 14/14 21/6 30/5 58/16 59/19 67/3 timed [1] 90/3 82/15 134/11 121/20 125/2 131/6 30/11 31/12 32/4 times [4] 81/8 83/1 training [4] 2/25 3/21 67/11 70/7 70/17 they [151] 32/23 33/25 56/24 109/17 133/14 19/24 20/2 73/13 81/21 81/24 they're [6] 9/6 20/22 59/8 61/9 69/10 70/7 82/9 82/10 83/19 timescales [1] 45/6 transacting [1] 84/15 32/16 48/6 81/17 72/2 82/6 82/8 82/10 **TIP [2]** 28/15 125/10 84/16 97/23 110/23 transaction [11] 30/3 110/14 82/15 88/9 91/25 title [3] 5/23 6/1 31/24 44/17 44/19 135/4 they've [1] 21/3 type [7] 52/23 61/25 91/25 94/23 97/1 105/10 46/23 84/11 84/13 thing [6] 13/12 24/19 97/14 101/6 115/19 84/14 90/3 90/4 90/5 69/9 84/13 84/15 Tivoli [10] 6/15 62/17 57/21 88/8 107/22 62/21 63/6 63/9 65/13 transactional [1] 115/21 117/6 117/14 115/19 124/4 124/4 117/17 118/15 120/17 66/8 132/2 132/4 43/14 types [5] 84/12 84/16 things [22] 19/11 122/10 122/17 124/10 134/9 115/19 115/21 141/2 transactions [31] 19/23 22/10 25/6 126/8 126/10 130/1 today [3] 45/8 114/5 30/5 32/1 41/16 41/23 typo [4] 103/13 27/14 31/20 32/14 130/4 130/13 130/21 114/17 41/25 42/7 42/18 122/14 122/14 123/6 40/3 62/22 70/7 71/4 132/21 135/1 135/5 42/19 43/11 55/17 together [7] 15/5 79/25 81/22 82/4

21/23 22/2 30/6 30/7

57/13 57/19 58/2 58/6

135/8 136/14 138/21

19/6 20/22 21/13 U 21/14 22/3 23/21 unaudited [1] 71/11 23/23 25/2 25/10 unauthorised [2] 25/24 26/23 27/17 63/24 134/15 30/4 30/7 30/9 32/21 unaware [2] 52/11 37/5 38/5 40/17 41/4 68/8 48/20 52/7 73/23 76/4 unclear [2] 110/19 78/5 78/10 78/16 87/8 135/4 88/4 88/14 88/17 91/6 under [15] 11/13 91/13 91/15 92/5 49/10 57/12 59/8 62/6 94/22 96/20 96/23 64/24 67/13 91/6 99/7 99/8 100/8 102/11 116/2 116/4 100/10 106/3 109/7 118/21 130/15 132/21 117/19 128/5 128/13 132/25 130/3 131/15 138/17 undergo [1] 70/5 141/7 underlying [3] 27/24 update [11] 42/9 50/3 28/22 50/16 50/10 51/12 53/8 underneath [3] 61/15 53/16 70/24 75/22 61/17 79/2 77/17 80/12 89/18 understand [10] 2/1 updated [4] 51/25 42/16 42/22 46/22 76/9 76/10 79/14 56/25 66/24 71/1 uploaded [1] 1/24 77/19 128/17 144/12 **upon [3]** 17/10 101/9 understanding [9] 119/2 4/20 9/20 10/22 11/2 us [39] 2/3 6/8 13/12 11/25 44/14 64/17 15/6 18/25 20/10 101/19 128/19 27/19 29/11 32/3 33/8 understandings [1] 33/20 37/22 43/5 10/9 55/14 61/25 63/15 undertake [1] 26/24 66/6 66/15 68/15 undertaken [3] 46/9 68/19 76/6 82/15 56/20 68/10 87/17 91/14 91/14 undertakings [3] 94/12 98/1 99/15 65/9 65/17 66/12 100/6 102/15 103/17 **Unfortunately [2]** 105/8 105/11 113/9 76/18 110/8 120/7 122/8 124/25 unhappiness [2] 127/7 130/15 38/1 38/3 usage [4] 52/25 unhappy [5] 35/16 57/12 57/19 58/5 35/17 36/12 36/14 use [30] 13/22 25/3 28/14 46/6 50/8 50/13 unique [1] 127/10 51/3 51/6 56/5 62/17 unit [10] 9/8 17/4 63/24 64/3 64/4 64/10 94/15 94/16 96/17 65/7 65/16 67/16 100/9 100/16 100/22 76/19 76/22 77/3 77/6 103/20 116/9 77/16 115/11 127/4 units [4] 105/15 127/24 129/1 134/9 106/14 108/9 137/3 134/15 139/12 142/19 University [1] 2/4 used [49] 2/21 2/24 unless [5] 3/6 3/9 4/2 4/25 5/3 5/14 16/14 76/20 99/18 28/14 36/7 36/9 43/6 **Unlike [1]** 102/6 45/20 46/25 47/4 47/9 unlikely [1] 29/13 48/5 52/1 52/4 52/16 unpleasant [1] 38/8 54/11 55/4 55/16 58/8 via [4] 10/13 38/22 unreliable [2] 90/16 58/12 58/21 62/21 90/22 64/6 64/7 64/16 65/12 **Unrestricted [1]** 72/4 72/5 94/5 119/9 71/11 119/19 120/5 120/16 until [6] 5/17 39/9 121/24 125/9 128/23 80/7 103/8 111/13 129/15 129/16 130/22

145/4

up [57] 2/15 5/17

6/11 6/20 8/10 8/13

useful [2] 25/4 25/5 user [22] 63/4 64/14 64/19 64/25 72/18 75/24 76/9 77/25 78/18 81/3 91/9 91/10 91/15 91/20 92/10 92/11 92/21 123/7 137/18 users [15] 74/13 74/20 75/8 75/12 75/15 75/16 76/4 78/7 78/10 78/12 78/16 79/15 130/12 138/18 140/5 using [15] 30/3 46/25 48/1 48/14 48/21 52/22 65/10 65/14 65/19 68/11 76/7 81/11 127/4 139/13 142/22 usually [1] 123/1 utilised [1] 142/18 utility [3] 43/4 46/24 125/25 value [2] 52/14 100/14 values [1] 102/3 Vane [6] 133/19 133/20 133/22 133/24 134/2 138/6 variety [1] 16/23 various [7] 13/23 19/11 115/1 115/10 121/14 128/23 132/25 verified [1] 130/13 version [3] 61/25 107/17 112/21 very [35] 2/17 3/20 15/12 15/12 16/13 36/11 36/12 36/14 44/25 45/16 45/22 45/24 54/3 65/24 80/14 81/20 85/13 86/3 89/7 98/21 111/20 113/4 113/14 141/11 144/18 vested [1] 70/20 81/5 102/4 viewed [2] 12/24 13/3 visibility [2] 8/23

11/15

132/5 132/9 132/11

139/25

135/25 138/24 139/12

visible [1] 100/17

visited [1] 106/10

Visual [5] 3/25 4/2

W wait [4] 2/14 77/13 111/25 112/2 130/13 134/12 135/23 want [12] 38/8 41/7 99/1 100/11 105/24 114/6 117/18 118/21 121/6 127/13 140/9 144/18 wanted [5] 24/5 37/13 37/18 52/17 85/18 wants [2] 90/18 108/21 warn [3] 100/10 100/18 110/4 warning [1] 100/21 Warwick [1] 93/6 was [500] wasn't [29] 4/20 5/6 15/17 16/13 23/11 25/11 33/5 40/5 55/5 55/6 66/20 70/13 78/16 80/9 85/8 85/12 90/23 97/11 97/13 101/16 117/5 117/7 118/9 120/11 123/13 123/19 132/14 141/8 141/15 watched [1] 40/2 way [17] 4/7 4/7 4/9 25/7 43/10 44/9 52/20 58/8 58/12 68/19 72/12 77/24 87/17 95/16 96/6 133/7 141/23 ways [1] 8/2 we [278] we're [15] 50/10 24/19 25/4 25/9 34/15 53/22 53/22 57/1 60/20 75/9 76/19 79/10 82/11 82/16 84/11 86/7 91/2 109/1 130/24 we've [3] 26/23 73/22 104/21 104/23 106/12 112/1 website [4] 1/25 8/20 113/17 122/15 124/14 61/24 62/1 Wednesday [1] 1/1 week [7] 103/1 103/2 vetting [2] 70/5 70/10 106/11 108/25 123/15 127/19 133/14 Weekly [9] 39/21 view [2] 143/19 144/8 39/25 40/3 40/4 116/25 117/4 117/14 143/15 144/8 weeks [3] 109/2 109/17 109/19 well [41] 6/5 9/7 25/19 25/22 30/20 43/6 51/1 54/3 60/4

71/20 80/16 81/22 87/12 87/19 88/16 88/22 91/2 91/19 92/1 92/17 107/3 107/13 113/13 113/16 116/11 118/17 121/6 126/23 130/4 131/12 132/16 134/3 136/3 136/23 141/16 142/6 144/3 144/20 went [4] 6/20 100/19 116/22 141/9 were [203] weren't [9] 27/12 37/9 83/11 86/24 88/14 91/16 112/19 115/22 122/22 Wharf [1] 115/6 what [194] what's [7] 10/9 11/24 12/15 48/3 94/19 130/15 135/20 whatever [4] 49/8 78/15 92/7 127/11 when [76] 2/22 3/22 7/4 7/6 7/17 7/18 8/4 9/20 10/11 10/21 10/21 15/12 15/23 15/24 16/18 18/1 20/22 23/1 26/7 26/11 28/11 28/15 28/19 29/19 30/14 31/24 32/10 34/22 35/3 35/14 39/12 39/22 40/2 40/8 45/13 47/4 50/14 50/15 60/17 65/10 75/6 76/22 77/6 80/2 83/3 83/14 88/17 90/3 92/17 93/22 94/19 95/3 95/21 100/8 100/20 106/13 111/15 117/12 119/24 123/20 125/20 125/24 126/6 126/24 127/4 129/2 129/13 131/1 138/4 138/12 138/22 140/17 141/7 141/19 142/21 143/15 where [42] 9/5 11/19 12/22 14/20 22/25 26/9 26/21 28/18 40/25 43/20 46/4 46/6 47/12 57/1 70/24 71/4 71/25 77/21 79/21 80/18 82/3 82/21 84/3 84/3 84/17 91/10 99/15 101/4 101/9 104/22 115/5 119/6 119/24 120/25 122/24 123/3 124/5 130/12 130/25 139/13 142/3 142/11 whereby [1] 143/24

4/13 4/14 4/15 60/17 64/6 70/15 **volume [1]** 142/18 **VPN [1]** 69/21

12/21 W whether [25] 3/10 3/12 11/8 19/25 22/1 23/8 32/11 32/12 32/13 33/24 35/22 36/6 36/8 44/11 56/12 59/13 74/15 85/17 100/11 109/20 113/11 136/16 139/16 139/25 133/23 141/5 which [96] 2/14 7/22 8/18 11/13 12/11 123/24 13/16 14/11 15/5 17/10 17/12 19/5 19/10 26/10 27/5 31/12 32/21 41/20 42/25 43/8 43/11 45/20 53/1 54/11 56/9 57/5 62/24 66/10 69/20 71/22 72/3 72/5 72/15 75/6 75/15 75/22 76/20 77/4 78/1 78/22 82/12 88/1 91/9 92/5 93/19 93/20 94/3 94/7 97/5 98/24 99/4 99/8 99/24 102/22 102/24 104/13 104/21 105/17 105/18 106/18 108/13 108/13 109/21 110/9 111/17 111/22 115/1 115/10 116/1 116/25 119/12 119/18 119/19 120/16 121/1 121/11 122/12 123/16 108/20 124/8 125/4 125/6 125/8 125/14 125/15 125/15 125/17 125/18 126/16 128/1 129/6 129/18 129/23 130/9 131/16 132/17 132/23 137/7 while [4] 2/16 7/8 79/25 91/2 who [45] 7/12 8/7 12/4 13/20 20/15 22/20 26/9 29/1 33/8 37/4 37/15 37/19 37/23 40/22 41/14 43/21 45/1 45/9 46/12 46/19 47/11 47/19 48/10 48/17 61/7 64/24 65/3 72/6 79/11 88/11 89/13 93/23 95/1 97/21 105/8 1/17 105/20 106/7 106/18 108/15 122/2 123/11 117/19 129/10 133/1 133/9 144/1 whoever [1] 137/25 whole [3] 35/13 109/22 111/3

whom [1] 7/16

whose [2] 12/20

why [27] 21/13 21/14 23/21 23/23 23/23 24/14 36/8 37/11 46/1 50/7 53/3 53/4 78/6 79/6 81/25 82/7 95/19 99/3 99/12 99/23 100/2 107/19 109/21 110/1 123/23 124/12 widely [1] 101/7 wider [3] 3/14 101/18 Wigan [1] 131/7 will [56] 1/24 2/14 19/23 40/16 41/3 41/24 42/6 42/8 43/13 43/16 44/9 55/11 59/6 66/8 73/24 76/3 84/22 85/20 85/21 88/17 88/23 90/11 91/19 97/22 98/11 98/23 98/24 99/5 99/25 102/3 102/5 102/23 102/24 103/8 103/12 103/14 103/15 103/21 105/5 106/3 107/3 108/24 109/7 111/18 111/24 113/9 114/15 116/1 116/16 117/22 119/19 131/14 137/15 working [16] 2/22 141/13 144/12 144/23 willing [2] 89/8 92/9 windedness [1] Windows [9] 64/18 127/14 128/24 131/4 131/6 131/17 131/23 132/19 133/11 wish [1] 43/19 within [28] 8/15 8/16 22/5 26/15 26/17 26/21 41/9 44/5 44/7 44/21 48/19 55/22 57/1 74/16 81/10 85/9 109/17 117/10 120/20 122/4 130/21 131/21 132/1 132/14 134/21 134/25 136/9 142/5 without [6] 71/7 80/10 82/13 84/22 91/14 92/12 withstand [1] 115/18 WITN04110100 [1] WITN04760100 [1] witness [21] 1/5 1/12 2/13 7/21 9/18 13/20 18/17 18/18 35/23 36/5 36/20 39/1 39/7 39/16 99/11 114/7 114/19 117/18 119/1

124/22 128/13

witnessed [2] 91/16 106/20 witnesses [2] 36/12 37/9 won't [4] 90/6 103/21 107/8 114/16 wonder [2] 85/17 142/24 word [1] 109/24 words [1] 37/3 work [31] 3/23 14/17 19/4 21/3 34/14 38/14 130/20 56/12 56/15 56/19 57/2 57/4 72/5 74/4 75/14 76/8 76/10 115/9 115/9 115/14 116/8 116/14 116/22 118/12 122/16 129/22 132/12 138/5 141/24 142/4 142/12 143/5 workaround [4] 111/13 111/14 111/17 112/4 workarounds [1] 6/6 worked [15] 2/20 3/20 3/22 6/19 6/22 14/20 16/16 34/22 35/8 53/21 114/20 115/25 116/13 119/9 128/15 6/14 26/12 60/2 86/23 90/1 117/8 117/12 120/23 120/25 122/25 you're [11] 12/13 123/24 133/19 141/1 141/19 142/15 workload [1] 35/7 workstation [1] 131/18 worry [2] 21/17 31/3 would [255] wouldn't [12] 20/22 30/9 32/25 59/24 64/22 64/22 103/23 112/14 117/16 126/10 127/8 139/9 wrapped [1] 138/25 Wright [4] 74/17 75/5 76/11 78/5 write [16] 42/17 49/13 49/15 49/19 50/3 50/10 76/18 77/3 77/4 77/14 77/17 79/22 112/18 117/12 127/21 144/6 writes [3] 42/9 49/6 81/2 writing [5] 43/10 45/13 102/22 107/1 117/5 written [18] 28/19 30/19 39/17 42/19 49/10 50/18 50/20

50/21 51/4 53/5 66/20

82/21 113/5 144/4 144/20 wrong [7] 31/4 32/18 53/12 90/21 105/25 106/12 117/21 wrongly [1] 97/21 wrote [9] 8/20 32/20 75/6 80/23 80/24 81/1 zero [2] 100/21 129/10 137/25 143/25 WYCODLR [1] year [1] 79/11 years [12] 3/11 5/19 5/25 34/7 34/8 59/4 82/23 82/24 109/18 110/12 115/4 125/16 yes [222] yesterday [3] 131/9 131/16 140/10 yesterday's [1] 89/18 yet [5] 75/3 91/18 105/2 110/14 112/2 you [613] you know [18] 22/14 117/15 122/15 124/9 124/16 125/16 137/22 138/2 140/21 140/24 141/11 141/12 141/13 141/16 142/9 142/10 142/21 144/5 12/15 13/12 16/14 34/1 45/11 48/16 51/3 52/1 54/8 128/6 you've [3] 30/25 61/11 61/11 you/we [1] 108/24 your [95] 1/13 1/18 1/21 2/3 2/13 4/20 5/23 7/21 9/1 9/18 10/1 10/22 12/15 15/2 17/21 18/17 18/18 19/13 20/4 20/25 25/23 26/3 27/23 28/3 29/11 30/11 31/6 31/13 31/16 33/12 34/12 34/16 37/5 38/20 39/2 44/5 44/14 53/19 54/6 54/24 58/8 58/25 59/19 63/5 64/17 70/15 73/9 74/4 78/19 80/2 82/7 83/3 86/14 87/12 87/24 87/25 92/8 93/7 93/13 93/24 95/22 97/11 98/6 100/6 100/9 104/22 107/12 113/4 114/3 114/9 114/12 114/14 114/19 117/8 117/18 117/22 118/21

120/8 120/23 121/7

66/22 77/9 82/20

122/3 124/12 128/13 131/19 132/14 136/9 139/23 139/24 141/19 142/2 143/14 143/19 144/7 144/19 144/20 yours [1] 98/6

103/20