

OPUS 2

INTERNATIONAL

Horizons Issues - Alan Bates & Others v Post Office Limited

Day 20

June 14, 2019

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1 Friday, 14 June 2019
2 (10.30 am)
3 DR ROBERT PEEL WORDEN (continued)
4 Cross-examination by MR GREEN (continued)
5 MR JUSTICE FRASER: Just before we start, in relation to
6 timings, have you discussed when you are going to stop
7 so Mr de Garr Robinson can --
8 MR GREEN: My Lord, what I have said to my learned friend is
9 I will do pro rata exactly what I gave my learned
10 friend, so stop by 4 o'clock, being 10 minutes per day.
11 MR DE GARR ROBINSON: My Lord, I've indicated that that may
12 not be enough time, and my learned friend has very
13 kindly said he will try and cut it back as much as he
14 can.
15 MR JUSTICE FRASER: All right, that's excellent.
16 And then just a reference point, this is just for
17 the two of you to look at lunchtime, not now. On Day 18
18 at page 98 in one of the answers about ground rules, the
19 transcript says May 2015. I'm not sure that date can be
20 right, 2015.
21 MR DE GARR ROBINSON: No, it doesn't sound right.
22 MR JUSTICE FRASER: So if you just check it. It might have
23 been corrected in the finalised version.
24 MR GREEN: I understand it is 2018 but we will check.
25 MR JUSTICE FRASER: So just check it, that's all.

1

1 All right, Mr Green.
2 MR GREEN: I'm most grateful.
3 Dr Worden, yesterday we had arrived at a point where
4 you had seen the presentation, it has the £25,000 and
5 £2,500 outstanding?
6 A. The presentation about?
7 Q. The Fujitsu presentation about the Dalmellington bug.
8 A. Yes.
9 Q. Now I would like to invite you to look, please, at your
10 second expert's report.
11 A. Sorry, where is it? Here, yes.
12 Q. I would like you to look at page 41, please.
13 A. Page 41?
14 Q. Sorry, {D3/6/41}.
15 A. Okay, I'm getting there. Yes.
16 Q. Now, this is where you deal with the Dalmellington bug
17 in your second expert's report?
18 A. Yes, right. Okay.
19 Q. And it is in section 6.2.2, yes?
20 A. Yes.
21 Q. And it goes -- it runs through to page {D3/6/42} and
22 then over the page to {D3/6/43}, if you want to look.
23 A. Yes.
24 Q. So it is in these paragraphs 154 to 163. Can I just
25 take you through them because the first two paragraphs

2

1 that we see on page 41, which are paragraphs 154 and
2 155, those two paragraphs are directly referring to what
3 you have described as "the Dalmellington incident".
4 {D3/6/41}
5 A. Yes.
6 Q. And you would fairly accept that the phrase "the
7 Dalmellington incident" suggests one event?
8 A. Well, one event, but I think there is a type of event
9 that it refers to.
10 Q. Let's have a look, if we may.
11 Paragraphs 154 and 155, just to map out how this
12 section works, are actually talking about Dalmellington
13 itself.
14 A. The actual Dalmellington, yes.
15 Q. Yes, the actual Dalmellington. Then at 156 you move
16 from the specific reaction to that to the more general
17 position that you infer about Post Office and Fujitsu --
18 A. Yes, I mean -- sorry, in a sense a KEL implies a general
19 position in some way.
20 Q. I understand. But you are moving certainly at the
21 highest level from the specific to a more general
22 exposition of your views in the light of this because we
23 see at 156 you say:
24 "Even so, Post Office and Fujitsu were concerned
25 that Horizon should not induce the user to make such an

3

1 error, even in rare circumstances."
2 A. Yes.
3 Q. Then you say at 157:
4 "To make this point more clearly: in my opinion, for
5 many KELs ..."
6 So that is not limited to Dalmellington at all?
7 A. No, that's a rather general statement.
8 Q. So it is a general statement:
9 " ... it would have been obvious to Fujitsu that any
10 error in branch accounts would have been corrected in
11 due course, by the normal processes ..."
12 You see?
13 A. Yes.
14 Q. And the general statements continue into 158 over the
15 page on {D3/6/42}.
16 A. I think that is right. Can I read it?
17 Q. But you do then pick up Dalmellington at the bottom of
18 158 again.
19 A. "Dalmellington was such a case."
20 Q. Exactly. So you return from the general to the specific
21 at the bottom of 158, and you bring us back to
22 Mr Godeseth's second witness statement at paragraphs 55
23 onwards --
24 A. Yes.
25 Q. -- referring to Dalmellington, yes?

4

1 A. Yes.
 2 Q. If we can just bring up Mr Godeseth's second witness
 3 statement at 55 onwards. We are going to find that, if
 4 we may at {E2/7/14}.
 5 A. So the paragraph I quote is which?
 6 Q. You say Mr Godeseth, his second witness statement at
 7 paragraphs 55 onwards, in his Dalmellington section.
 8 A. His Dalmellington section, yes.
 9 Q. Yes?
 10 A. Yes.
 11 Q. And we can see at {E2/7/14}, his Dalmellington section
 12 begins on page 14 of his witness statement at
 13 paragraph 55.
 14 A. Yes.
 15 Q. Which is the one you have referenced.
 16 A. Yes.
 17 Q. And if we go over the page, please {E2/7/15}, we see on
 18 page 15 the reference in paragraph 61 to "total 112
 19 instances"?
 20 A. Yes.
 21 Q. Yes? And we also have Fujitsu's analysis --
 22 A. Yes.
 23 Q. -- expressly exhibited there.
 24 A. Yes.
 25 Q. So in your second report you are expressly referring to

5

1 the passage that you didn't refer to previously?
 2 A. Well, I'm referring to that one, yes.
 3 Q. Let's go back to your report, if we may. {D3/6/42}
 4 A. Yes.
 5 Q. We have established that at the bottom of 158 you come
 6 back to Dalmellington and refer to that bit of
 7 Mr Godeseth's statement. Then you say there at
 8 paragraph 159:
 9 "Further, but weaker, support from this view ..."
 10 This is your theory?
 11 A. Yes.
 12 Q. But you refer specifically to a note by Anne Chambers?
 13 A. Yes.
 14 Q. And you only recite there -- well, you recite there what
 15 she says?
 16 A. Yes.
 17 Q. And refer to the fact that she had looked for other
 18 affected branches?
 19 A. Yes.
 20 Q. And you say:
 21 "She said: 'I can only check back two months; I've
 22 found 4 other instances ... and all but the last removed
 23 the discrepancy by completing a rem out for the excess,
 24 which corrected the system cash holding.'"
 25 A. Yes.

6

1 Q. And then you would accept, I think, that notwithstanding
 2 having gone to -- made express reference to that PEAK in
 3 which four other instances are mentioned, at no point
 4 between there and 163 do you mention the fact that 118
 5 branches were affected -- sorry, 88 branches were
 6 affected by 112 events?
 7 A. Between which paragraphs?
 8 Q. The ones we are on, 159/160, all the way down to 163.
 9 A. Let me just check:
 10 "... 'we are going to have to find ... and correct
 11 their accounts.'"
 12 Yes. Okay, yes.
 13 Q. Now, there are two possible explanations for you not
 14 making reference to the fact that in this case the bug
 15 concerned affected 88 branches rather than 1 or 4 or 5.
 16 There are two possible explanations for not mentioning
 17 the 112 instances or the 88 branches. One is that you
 18 didn't know, and the other is that you did know and you
 19 chose not to mention it. Which of those two is the
 20 explanation?
 21 A. That is a good question. I think I knew, but my
 22 prevailing view is that remming errors are detected very
 23 directly by an imbalance between a rem in and a rem out
 24 and that therefore remming TCs do not involve a large
 25 element of human judgment as to whose fault it was that

7

1 did this, or whether it was the bank etc. So remming
 2 TCs in my opinion are rather fast and direct things and
 3 I was not concerned -- for instance, by the time we have
 4 the 118 it was many years and I don't know exactly --
 5 for instance, I cannot recall the exact timing between
 6 Anne Chambers PEAK and the whole sequence of several
 7 years, but my understanding is that over the whole
 8 sequence of several years these rems, these TCs
 9 consequent on remming errors, were made rather rapidly.
 10 And that is my whole background understanding of
 11 Dalmellington and other incidents.
 12 Now, if I fail to mention Dalmellington and other
 13 incidents on this case, perhaps I should have done, but
 14 I think it is clear from my reports that all remming
 15 errors I believe get corrected by TCs --
 16 Q. Pausing there, Dr Worden. It would have been helpful to
 17 the court in identifying the errors which had
 18 a potential to have an impact on branch accounts.
 19 A. In my mind they didn't have the potential -- didn't
 20 have -- had a small potential of having a lasting effect
 21 on branch accounts. Certainly they had a transient
 22 effect, there is no question of that.
 23 Q. In terms of simply identifying whether they had the
 24 potential to have an effect without your gloss of
 25 lasting on it, it would be important, wouldn't it, for

8

1 the court to have an understanding of how many
 2 branches -- what's the magnitude, order of magnitude of
 3 the number of branches affected by that bug?
 4 A. Yes, indeed, I could have for instance mentioned that
 5 112 branches were affected by this bug versus 20,000
 6 branches a year which are affected by manual remming
 7 errors, but my opinion is that they are all corrected
 8 quite rapidly. I'm sorry if I did not mention it there,
 9 but the prevailing background of my opinion on the
 10 remming issues is that there are large numbers of
 11 remming errors during the year and they get corrected by
 12 a TC which does not involve a huge element of human
 13 judgment to see a discrepancy between two figures and
 14 say this has to be corrected.
 15 Q. But it is a striking figure, 88 branches, isn't it?
 16 A. Well, compared with 20,000 it is not.
 17 Q. And you are prepared to mention anything but you are not
 18 prepared to mention that?
 19 A. No, I'm saying if I failed to mention it here it is
 20 an oversight and I apologise to the court.
 21 MR JUSTICE FRASER: When you just said not compared to
 22 20,000, where do you get your 20,000?
 23 A. I get the figure of 20,000 from the table of TCs which
 24 says -- quoted in my first report, which says there are
 25 100,000 per year approximately and, of those,

1 approximately 20,000 are remming errors.
 2 MR GREEN: Now, Dr Worden, can we now do an exercise of
 3 going through the bugs table in joint 2?
 4 A. Yes.
 5 Q. And that begins at --
 6 A. Shall I get joint 2 up?
 7 Q. -- {D1/2/3}.
 8 A. I have got joint 2. Okay.
 9 Q. And if we look at -- if we go forward, please, we have
 10 on page -- there are the first two, receipts and
 11 payments and Callendar Square?
 12 A. Yes.
 13 Q. Then we go over the page to the suspense account bug.
 14 A. Yes.
 15 Q. Now, you accept that that's one of your branches that
 16 had the potential to have a lasting impact?
 17 A. Yes.
 18 Q. We dealt with Dalmellington just now, that's number 4.
 19 A. Yes.
 20 Q. If we go to number 5, please {D1/2/5}. That is remming
 21 in?
 22 A. Yes.
 23 Q. And your view in the "Worden Opinion" column is:
 24 "As for the Dalmellington bug, above - PO had a
 25 robust process for detecting and correcting remming

1 errors, whatever their origin.
 2 "So, there were no lasting effects on branch
 3 accounts."
 4 A. Yes, we have just been over that.
 5 Q. And that is the reason for not including them in lasting
 6 errors --
 7 A. Yes, that's why they are not in my 12, if you like.
 8 Q. Now, I'm going to have to take all these not at a huge
 9 level of detail, as you will understand.
 10 A. Yes, sure.
 11 Q. But can I ask you this question: there was a KEL in
 12 relation to this bug, wasn't there? Can you remember?
 13 A. Well, we have got acha4221Q, yes.
 14 Q. Yes. Did you look at the PEAK that was mentioned in
 15 that KEL?
 16 A. I cannot recollect, honestly. I probably did because
 17 when a KEL -- I mean, when I look at KELs, if it seems
 18 to me that the KEL is clear as to what happened, the KEL
 19 is a kind of distillation whereas the PEAK is
 20 a long-running diary, if you like. So if the KEL is
 21 clear I don't go on to the PEAK, but if the KEL leaves
 22 me some room for doubt then I will go on and look at the
 23 PEAK.
 24 Q. Could we look at this on your own response at
 25 {D3/2/170}, please, in your expert's report?

1 A. D3. That is a supplemental report, is it?
 2 Q. This is actually in the appendix to your first report.
 3 A. Right, okay.
 4 Q. It is at {D3/2/170}.
 5 A. Both my reports are D3. Sorry. Anyway, let's go to it.
 6 Yes.
 7 Q. So we can see your view in relation to this KEL?
 8 A. And this is part of the table where I analyse the 62
 9 KELs that Mr Coyne had cited, is that right?
 10 Q. Yes, there are two tables, aren't there? There is what
 11 you call the pound table --
 12 A. Yes.
 13 Q. -- and the Coyne table?
 14 A. That is right.
 15 Q. Yes? And we are here looking at -- the bottom box is
 16 acha4221Q.
 17 A. That is the one.
 18 Q. Which is the KEL at {F/794/1}. And you have referred to
 19 it there, you have summarised your view of it --
 20 A. Yes --
 21 Q. "The clerk went into --"
 22 A. Can I just clarify, I believe the next to left-hand
 23 column is kind of quotations out of the KEL and the
 24 PEAK, or a PEAK, and the right-hand column is my
 25 analysis.

1 Q. I'm grateful. So you quoted from the KEL. We can
 2 actually see that made good, just to be fair to you,
 3 Dr Worden, at page {D3/2/164} if you want briefly to --
 4 so if we go up to page 164.
 5 A. Go to my first report at 164? Or in the appendix or ...
 6 Q. No, page 164 of this {D3/2/164}.
 7 A. Sorry. D3/2 ... get used to this convention.
 8 Q. This is in the same table, Dr Worden.
 9 MR JUSTICE FRASER: Why are we going to 164?
 10 MR GREEN: Just in fairness to Dr Worden, to remind him of
 11 the --
 12 A. Page number again, sorry?
 13 Q. Let's stay on this page. Dr Worden, your heading for
 14 that middle column, the large column, is "Quotes from
 15 KEL and PEAKs"?
 16 A. Yes.
 17 Q. So what you have done is selected what you regarded as
 18 relevant quotes from the KELs and PEAKs to include
 19 there?
 20 A. That is right.
 21 Q. And we see what you have included. You say:
 22 "The clerk went into the Delivery menu and scanned
 23 two pouches (one of currency and one of coins)."
 24 A. Sorry, are we back on the --
 25 Q. Yes, we are back here on this page, which is {D3/2/170}.

13

1 A. On screen I don't have it.
 2 MR JUSTICE FRASER: Okay, I'm just going to intervene to try
 3 and streamline this. We should have 170 on the common
 4 screen now.
 5 A. 170. We do, yes.
 6 MR JUSTICE FRASER: And you are being asked about the
 7 quotation in the main substantive column.
 8 A. Okay.
 9 MR JUSTICE FRASER: The heading to that column being "Quotes
 10 from PEAKs and KELs".
 11 A. Yes. So we saw the heading and now we are looking at
 12 the ...
 13 MR JUSTICE FRASER: Yes, Mr Green.
 14 MR GREEN: I'm most grateful. On the left-hand side we see
 15 acha4221Q in the second lower box.
 16 A. Yes.
 17 Q. And in the main substantive column there is your quote
 18 from the KELs and PEAKs.
 19 A. Yes.
 20 Q. It says:
 21 "The clerk went into the Delivery menu and scanned
 22 two pouches (one of currency and one of coins). The
 23 second pouch was recorded twice on the system, resulting
 24 in a loss of £80."
 25 A. Yes.

14

1 Q. Did you look at the PEAK that was referred to in that
 2 KEL?
 3 A. I'm not sure if I did but I would suspect I didn't,
 4 because my views on remming in and remming out errors
 5 have been clear for some time and therefore I would have
 6 probably found what I wanted in the KEL.
 7 Q. I understand. Let's look, if we may, at that PEAK which
 8 is {F/588/1}. A hard copy will be handed up by
 9 Ms Donnelly.
 10 A. Thank you.
 11 Q. The PEAK number is PC0195380.
 12 A. Can I just start at the top:
 13 "Rem in transaction appears twice right."
 14 Yes, right.
 15 Q. Can you turn to page {F/588/2}, please.
 16 A. Yes.
 17 Q. And you have got the reference to the loss of £80 in the
 18 penultimate box at the bottom.
 19 A. The Anne Chambers grey box?
 20 Q. Yes.
 21 MR JUSTICE FRASER: 2nd March 2010 at 51.21.
 22 A. Got that.
 23 MR GREEN: Exactly, 15.21.46. Second paragraph:
 24 "This has caused them a loss of £80. They cannot
 25 reverse this transaction."

15

1 Do you see that?
 2 A. Yes.
 3 Q. Did you know why they couldn't reverse the transaction?
 4 A. I don't know the detail of that, but ...
 5 Q. I understand.
 6 A. Obviously this is one of two ways it can be corrected,
 7 by reversal or a TC.
 8 Q. Let's go over the page, if we may, to {F/588/3}. When
 9 we look there you can see halfway down the page at
 10 3 March 2010, 10.56.59, Anne Chambers.
 11 A. Yes.
 12 Q. Do you see halfway across the first line:
 13 "This problem can cause losses which are hard for
 14 the branch to identify, so it does need to be fixed."
 15 Do you see that?
 16 A. Yes.
 17 Q. And you hadn't seen this text because you don't think
 18 you looked at the PEAK, that is right?
 19 A. I do not think this text yet would change my opinion.
 20 Q. But on my question --
 21 A. In other words, I saw enough from the KEL, and this PEAK
 22 has not yet changed my --
 23 Q. I think the court has got your answer on the reason.
 24 But it's factually correct, you hadn't seen this text?
 25 A. I don't recall these words.

16

1 Q. Look at the box almost at the bottom, 3 March 2010,
2 18.15.47, Anne Chambers.
3 A. Sorry, 3 March 18.15. Yes:
4 "Just seen another example ..."
5 Q. "... of this in live ... this time they scanned the bar
6 codes, then pressed Previous instead of Enter after the
7 last barcode, and then went forward again. They now
8 have a loss of £25,000."
9 A. Yes.
10 Q. You would accept that that reference to £25,000 conveys
11 a very different order of magnitude of the potential
12 loss here, doesn't it?
13 A. I would. Obviously a remming error can be remming
14 an error. If you double up a rem then you double up the
15 amount of cash and that can be big or small depending on
16 lots of factors.
17 Q. And as you didn't look at this I'm not going to take you
18 to further parts of that.
19 Can we move forward now, please, to the other PEAK
20 referenced in the same KEL.
21 A. Yes.
22 Q. It is {F/695.1/1}. Did you look at this PEAK?
23 A. I don't think I did because, as I say, I feel
24 I understand remming TCs and I feel I understand --
25 generally the KELs give me --

17

1 Q. You can just say "for the same reason" each time. You
2 don't need to do it each time.
3 A. Yes, "for the same reason" is fine. Yes. I do not
4 think I have looked at the PEAK but --
5 Q. {F/695.1/3}, if we go there.
6 A. Page 3. Yes.
7 Q. If you look --
8 A. Sorry, could I just check the header of this PEAK and
9 get the problem statement. So it is remmed into
10 counters again. Okay. PM scanned it.
11 Right, thank you. Sorry.
12 Q. If you look, you see there is a large box in the bottom
13 half of the page --
14 A. Yes.
15 Q. -- which is 17th August 2010 at 15.48.59.
16 A. Yes.
17 Q. If you go halfway down that box --
18 A. This explains why rem reverse -- you can't reverse the
19 transaction. It says "rem reversal isn't allowed".
20 Q. Indeed. But look immediately under that.
21 A. "This is NOT another example ..."
22 Q. "This is NOT another example of the duplicate rem
23 problem that we have seen in the past, where use of the
24 Prev key accepted the same pouch twice. In this case
25 the pouch was processed on both counters ..."

18

1 Do you see that?
2 A. Yes. So one case was twice on one counter and the other
3 case was -- sorry, is that right?
4 Q. Yes.
5 A. The other case was two counters. Yes.
6 Q. If we go over the page {F/695.1/4}.
7 A. Yes.
8 Q. And we look at 18th August 2010, two-thirds of the way
9 down the page, 18.35.20, Anne Chambers.
10 A. Sorry, 18.35 and ...
11 Q. 20 seconds. It is a yellow box for you. Do you see
12 that?
13 A. This is about the BAL OSR logs?
14 Q. Yes. Immediately under that you will see the sentence
15 that says:
16 "Gareth Jenkins thinks that it should not be
17 possible to complete the rem in on both counters.
18 Please investigate."
19 A. Yes.
20 Q. Now, if he was right that it shouldn't be possible to
21 complete a rem in for the same pouch on two different
22 counters -- because they have unique barcode IDs, don't
23 they?
24 A. Yes.
25 Q. If he was right that it shouldn't be possible to do

19

1 that, that aspect was a bug in the system, wasn't it?
2 A. Yes.
3 Q. And if he was wrong in his understanding, it was
4 a defect in the system in allowing it to do it?
5 A. I see. Something shouldn't have happened.
6 Q. Yes.
7 A. Absolutely.
8 Q. But my question is a fair one, isn't it?
9 A. It is a fair one, yes --
10 Q. Even if you wouldn't say it in the same words.
11 A. Yes.
12 Q. And the consequence of that is that you get an error in
13 branch accounts as we have seen?
14 A. You get a transient error.
15 Q. Let's move on to the next one in the table which is 6.1.
16 A. Sorry, I have too much paper here.
17 Q. I will trace it through for you, Dr Worden, in the same
18 way as I did for number 5.
19 A. This is remming out, yes?
20 Q. We are going to go to {D1/2/5}.
21 A. Right. Can we just get it on the screen?
22 Q. Yes. This is just where it is in the --
23 A. Right, okay, I'm there --
24 Q. -- in the table of bugs. So we have done 5?
25 A. Yes, and we're doing 6(i) --

20

1 Q. We have done the first four above, and we have done 5,
 2 now we are moving on to 6(i) which is at the bottom of
 3 the page.
 4 Your answer on 6(i) is:
 5 "As for the Dalmellington bug, above – PO had a
 6 robust process for detecting and correcting remming
 7 errors, whatever their origin."
 8 A. Yes.
 9 Q. That is a direct paste from above, isn't it? It is the
 10 same reasoning as number 5?
 11 A. I don't -- I probably typed those words again, but ...
 12 Q. Okay. But it is the same words and the same reason?
 13 A. Very similar words because a very similar case, really.
 14 Q. The words are identical. Anyway, it doesn't really
 15 matter, they are the same.
 16 A. No.
 17 Q. And then underneath:
 18 "So, there were no lasting affects on branch
 19 accounts."
 20 If we go over the page {D1/2/6}, that bit is not
 21 there for that but we can see it pops back in on 6(ii)
 22 underneath?
 23 A. Oh yes, I missed that out on 6(i).
 24 Q. That's just a mistake on 6(i)?
 25 A. I think so, yes.

21

1 Q. You would have meant presumably to include the same --
 2 A. I think I would, yes.
 3 Q. -- test for all three. That's why I was asking you
 4 about the pasting.
 5 A. It wasn't -- yes, I do not think I kind of do that,
 6 really.
 7 Q. When we look at 6(i), did you look at the KEL for this
 8 one, which is acha508S?
 9 A. I believe I did, yes.
 10 Q. Do you remember?
 11 A. I believe I did. I would have done.
 12 Q. Do you remember that it suggested that calls about
 13 inconsistencies in stock rem outs should be redirected
 14 to NBSC?
 15 A. I don't recall that at this moment, no, but again I do
 16 start with a strong prior expectation that remming
 17 errors get fixed.
 18 Q. I understand. And that's the basis on which you
 19 approached your report?
 20 A. That is right.
 21 Q. And we all understand that.
 22 Paragraph 96 -- sorry, there is a PEAK referred to
 23 in that KEL, yes? Did you look at the PEAK, can you
 24 remember --
 25 A. No, I wouldn't have. I suspect not.

22

1 Q. Let's have a quick look at it, if we may. It is at
 2 {F/384/1}. You have got a hard copy of that.
 3 A. Right.
 4 Q. Just in the interests of time, Dr Worden, let me take
 5 you to page {F/384/3} of that, if I may?
 6 A. Can I just read -- get the problem statement.
 7 (Reads to self)
 8 So I don't see -- cash problem reversing, sorry,
 9 yes, let's get to that.
 10 Q. If I can take you to page 3.
 11 A. Yes.
 12 Q. And we come down, it will be the third yellow box for
 13 you.
 14 A. Right.
 15 Q. It is 15 February 2007 at 14.04.08.
 16 A. Yes.
 17 Q. It says there:
 18 "Have talked to PM about the problem and
 19 consequences, which she understands. POL will be
 20 informed of the transaction correction required to
 21 remove the excess cash in pouches (along with the 50 or
 22 so similar branches)."
 23 Do you see that?
 24 A. Yes.
 25 Q. And you hadn't read this, you think?

23

1 A. No. But, again, it doesn't -- reading it now doesn't
 2 change my opinion.
 3 Q. Your opinion we find in relation to that one is in the
 4 table at {D3/2/165}.
 5 A. Can we go there?
 6 Q. It is the top box which is referring to acha508S.
 7 A. Yes.
 8 Q. The PEAK is referred to there, the PEAK we have just
 9 seen at {F/384/1}.
 10 A. Yes.
 11 Q. And the quotes you have chosen to take from the KELs and
 12 PEAKs doesn't give any hint that there were 50 other
 13 affected branches, does it?
 14 A. That is correct.
 15 Q. Let's move on now, if we may, to the next one in the
 16 bugs table in the joint report, which is 6(ii), which is
 17 going back to {D1/2/6}.
 18 Dr Worden, I'm only going to do the first ten
 19 because time won't allow me to do 27 of these.
 20 A. Right, okay.
 21 Q. So we are looking at 6(ii).
 22 A. Yes. So again my standard wording comes in.
 23 Q. That's it. You will see there:
 24 "'Remming out' (ii) Bug (not acknowledged)."
 25 This isn't one that you had in either of your tables

24

1 in your appendix originally .
 2 A. No.
 3 Q. Did you have a look at the KEL in that case?
 4 A. I believe I did, yes.
 5 Q. Can we look at it now, please. This is at {F/276/1}.
 6 A. Rem out ... Yes.
 7 Q. This is the GMaxwell3853P KEL. If we look at the bottom
 8 where it says "Solution - Atos".
 9 A. Bug in the code, yes, right .
 10 Q. "Development have identified a possible bug in the
 11 counter code. However, due to the frequency of the
 12 problem & the risks involved in making the necessary
 13 changes it has been decided that a code change will not
 14 be made."
 15 A. Yes.
 16 Q. You hadn't noticed that, had you?
 17 A. I believe I had, but again the point about permanent
 18 effects , lasting effects , on branch accounts is not
 19 altered by that .
 20 Q. And the point about this is there was a lasting bug?
 21 A. There may have been a lasting bug, but they took
 22 a decision based on its frequency and the difficulty of
 23 making the change, perhaps the risk of making the
 24 change, that it was not worth addressing. That actually
 25 the remming process would pick it up and its

25

1 frequency -- they took a decision, I don't know what the
 2 details were of their trade off. They took a decision
 3 that fixing the code was not worthwhile.
 4 Q. I'm just asking you: it is a lasting bug?
 5 A. It is a lasting bug, yes.
 6 Q. Let's go to number 7 now, if we may, please.
 7 A. Sorry, it might have been fixed in the next release, for
 8 instance, one doesn't have the history, but there we go.
 9 Q. That is speculation in favour of the Post Office .
 10 A. Absolutely. I'm sorry, I shouldn't have done that.
 11 MR DE GARR ROBINSON: My Lord, I just wonder whether there
 12 is a potential confusion in the question my learned
 13 friend has asked. It may be my confusion.
 14 Where my learned friend said "lasting bug", bearing
 15 in mind the emphasis I placed during my submissions and
 16 indeed in cross-examination on bugs with lasting effect ,
 17 it might be helpful if my learned friend could
 18 distinguish between a bug that lasts and a bug which has
 19 lasting effect . I believe he is putting the first
 20 point, not the second.
 21 MR GREEN: I think you knew what I meant, Dr Worden, didn't
 22 you?
 23 A. I did. And I'll clarify what I mean: it's a bug that
 24 was not fixed, we cannot see was fixed, but it was a bug
 25 without lasting effects in my opinion.

26

1 Q. For all the reasons we have heard?
 2 A. Yes.
 3 Q. Let's go to number 7. I'm grateful to my learned
 4 friend. {D3/2/173} is your ...
 5 MR JUSTICE FRASER: Number 7, "Local Suspense Issues".
 6 Q. Local suspense issues, which are not the same as the
 7 local suspense bug. This was a bug that occurred in
 8 April 2010.
 9 A. Mm.
 10 Q. And if we look at the joint table for a moment at
 11 {D1/2/6}, and we look under your opinion, it says:
 12 "The KEL ... implies that PO and Fujitsu were able
 13 to identify all occurrences of the problem, without
 14 being notified by any Subpostmaster I would therefore
 15 expect them to have corrected any impact on branch
 16 accounts as part of normal error correction processes."
 17 A. Yes.
 18 Q. Then you say:
 19 "I would not expect evidence of all corrections to
 20 accounts to have survived to the present day. Peaks and
 21 KELs are not used to record corrections of financial
 22 impact."
 23 A. Yes.
 24 Q. Fujitsu, in fairness, analysed the KEL, you say here,
 25 and said:

27

1 "... 'Temporary financial impact which would have
 2 been cancelled out in the following period by
 3 a corresponding discrepancy.'"
 4 Do you see that?
 5 A. Yes.
 6 Q. Now, did you look at the KEL?
 7 A. Well, I infer from that Fujitsu did it, but I had done
 8 it previously.
 9 Q. Let's go, please, to {F/637/1} which is the KEL
 10 aha5259Q.
 11 A. Right. Sorry, can I remind myself of the ...
 12 "... local suspense cleared ... balance report ...
 13 cash ..."
 14 Q. Do you see if we look at the problem --
 15 A. Yes.
 16 Q. -- the summary was that the PM was forced to clear local
 17 suspense several times resulting in the cash figure on
 18 the balance report changing and possibly a discrepancy
 19 in the new trading period.
 20 A. Yes.
 21 Q. So that certainly had the potential to cause an impact
 22 on branch accounts at the time, subject to later
 23 correction?
 24 A. Yes.
 25 Q. And probably did, yes?

28

1 A. I think it did, yes.
 2 Q. If we look at the problem, please, at the bottom of the
 3 page?
 4 A. Counter logs.
 5 Q. "Looking at the counter logs, after they pressed the
 6 Stock Balancing/Report button the first time, there was
 7 a ClassCastException ..."
 8 A. Yes. I could explain, that is a Java thing that
 9 shouldn't happen.
 10 Q. So a Java error that shouldn't happen.
 11 "... system error 0437 (trying to process a corrupt
 12 ReportingService response), forcing them to start again.
 13 "The reason for this exception is understood ..."
 14 And it refers to --
 15 MR JUSTICE FRASER: You have gone over to the next page.
 16 MR GREEN: Sorry, I do apologise, yes.
 17 MR JUSTICE FRASER: You don't have to apologise, we just
 18 have to turn the page so we can see what you are
 19 reading. {F/637/2}
 20 "The reason for the exception is understood ..."
 21 And there is a reference to a PEAK and a KEL.
 22 "This problem particularly affected branches in the
 23 first 2-3 weeks of April, and could start occurring
 24 again."
 25 Did you notice that?

29

1 A. I believe I did, and obviously that doesn't state the
 2 number of branches affected.
 3 Q. Do you remember whether there was an indication of the
 4 number of branches?
 5 A. No, I have no idea of the number of branches.
 6 Q. Okay.
 7 A. But --
 8 Q. Let's look just below that, under "Solution - Atos",
 9 second paragraph under that heading --
 10 A. Oh, it says lower that 33 branches had this problem.
 11 Q. Yes.
 12 A. So I probably was aware of that at the time.
 13 Q. Yes:
 14 "33 branches which had this problem between 7th and
 15 15th April have been identified."
 16 A. Yes.
 17 Q. So pausing there. We know that the problem particularly
 18 affected branches in the first two to three weeks of
 19 April --
 20 A. And --
 21 Q. -- not exclusively?
 22 A. Yes.
 23 Q. And could start occurring again, and for an eight day
 24 period which they tested for, they had actually already
 25 identified 33 branches?

30

1 A. Yes, so we are looking at a number bigger than that,
 2 basically .
 3 Q. We are. But you had not spotted that magnitude of
 4 branches --
 5 A. Well, my analysis was not about the number of branches
 6 affected, it was about the lasting effect. I mean --
 7 Q. And --
 8 A. -- I think -- sorry, to state the obvious, there are
 9 bugs in Horizon that have no affect on branch accounts
 10 and they are very wide in scope.
 11 Q. I think we have got your answer on the corrections so
 12 let's just focus, if we may, just on this .
 13 A. Sorry.
 14 Q. Can you remember if you looked at the PEAK that's
 15 referred to for that?
 16 A. I doubt I would have again because ...
 17 Q. So on the first page of that KEL you will see PEAK
 18 PC0198077, do you see that?
 19 A. Coming back again?
 20 Q. Go back a page very kindly {F/637/1}. That's it .
 21 You can see the PEAK --
 22 A. Yes, there we go.
 23 Q. -- 0198077. If we look at that PEAK, please, it is at
 24 {F/630/1}. Ms Donnelly will give you a copy.
 25 A. Thank you.

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1 Q. Now, once you have got your eye in on page 1 ...
 2 A. (Reads to self)
 3 Yes. Just to say, "discrepancy" is not highly
 4 specific. Carry on.
 5 Q. Will you forgive me, Dr Worden, if we just try and
 6 focus, because I'm quite tight on time to get through so
 7 many --
 8 A. I'm sorry, I just like to get the problem statement.
 9 Q. And I want to be fair to you to do that.
 10 On {F/630/2}, which is the second page of this PEAK,
 11 there is a large box --
 12 A. Right.
 13 Q. -- occupying most of the top half of the page. If you
 14 come just short of halfway down that, you can see --
 15 maybe a third of the way down, do you see 2010-04-15 at
 16 14.11.53, do you see that?
 17 A. Yes.
 18 Q. Martin White. It says:
 19 "LOG: On logging on 15/04/2010 ..."
 20 Do you see that?
 21 A. Yes.
 22 Q. "... produced a balance snapshot that showed nil
 23 discrepancy and again the inflated cash figure."
 24 Yes?
 25 A. Yes.

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1 Q. Now, it then says:
 2 "The spmr had logged a couple of incidents with
 3 NBSC, and was referred to the HSD ..."
 4 With a reference number.
 5 A. Yes.
 6 Q. "The spmr was bounced back to NBSC as a balancing error
 7 rather than a system problem."
 8 A. Yes.
 9 Q. So we know this was in fact a bug, and what happened
 10 when this SPM was put through to the Horizon support
 11 desk is they were bounced back and it was suggested that
 12 it was a balancing error, yes?
 13 A. Yes.
 14 Q. And you would accept that from what we now know, that
 15 judgment was incorrect?
 16 A. It appears to be the case, certainly .
 17 Q. And that shows us, doesn't it, at least the -- that's at
 18 least consistent, in your meaning of the word
 19 consistent, with Angela Van Den Bogard accepting that
 20 there was sometimes user error bias, at least on
 21 Post Office's behalf?
 22 A. It is not to my mind a question of bias. What this
 23 tells me is that HSD on this occasion made a mistake.
 24 Q. And they made a mistake against the subpostmaster?
 25 A. Yes, absolutely.

33

1 Q. And on your definition of consistent, that is consistent
 2 with UEB?
 3 A. Sorry, that is right.
 4 Q. Now, if we go down to the bottom of this PEAK, this page
 5 of the PEAK, it is 21 April 2010 at 10.18.57.
 6 A. Yes.
 7 Q. Bottom box, it is a yellow one on the page:
 8 "NBSC has just advised that another office had
 9 a similar problem, although the discrepancy has now been
 10 sorted out. Details of the site and problem are below
 11 for information."
 12 A. Yes.
 13 Q. So that is an example of your idea of the
 14 countermeasures working effectively --
 15 A. Well --
 16 Q. -- on the face of it?
 17 A. -- if they say it was sorted out --
 18 Q. Exactly.
 19 A. -- it looks as if it was sorted out.
 20 Q. That is consistent with your view that there are lots of
 21 occasions when it is sorted out?
 22 A. Yes.
 23 Q. Let's read on:
 24 "Office: Hucclecote ..."
 25 And look at the bottom paragraph:

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1 "Office was dealing with the discrepancy in the
 2 office following the TP rollover, and selected settle
 3 centrally. The office reports that nothing happened and
 4 they ended up doing this a further 2 times before they
 5 could proceed. This has resulted in the office settling
 6 the loss centrally 3 times. This showed as such as the
 7 total on the final balance. The Trading Statement and
 8 suspense account seemed to be correct though. On Monday
 9 19th April the office reported they showed a cash gain
 10 of double the original loss and after further
 11 investigation a suspense account was produced that
 12 showed 2 clear loss from local suspense entries."
 13 {F/630/3}:
 14 "We have cleared this by clearing gain from logical
 15 suspense, which should clear the gain in the office."
 16 A. Yes.
 17 Q. So that is the resolution?
 18 A. That appears to be, and it is a bit complicated, isn't
 19 it?
 20 Q. But at least it appears to be the resolution?
 21 A. Yes.
 22 Q. Let's look at the immediate entry below that on page 3.
 23 A. "... solution we thought ... not resolved the problem
 24 ..."
 25 So they thought they had fixed it, they hadn't.

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1 Q. Let's take it in stages. Top of page 3, first new box
 2 on page 3. 22 April 2010, 11.26.12.
 3 A. Yes.
 4 Q. "The solution we thought we had for Hucclecote SPSO, FAD
 5 186523, has not resolved the problem, but has actually
 6 doubled the discrepancy."
 7 A. Yes. So it appears they again made a mistake, and this
 8 perhaps illustrates that PEAKs are this kind of train of
 9 investigation and there are false starts, whereas the
 10 KEL usually distills what comes out of the end of it.
 11 Q. You didn't find a reference to the fix going wrong and
 12 doubling the SPM's discrepancy in the KEL, did you?
 13 A. No, but frequently these things happen in PEAKs. They
 14 do (inaudible) investigations, it is a false -- it's
 15 a -- the trail leads nowhere, they start somewhere else
 16 and so on. You have to read through the whole PEAK to
 17 get the whole picture, whereas a KEL distills out what
 18 was learnt eventually. And so that is why I have --
 19 when the KEL tells me what happened, I generally don't
 20 pick the way through all the PEAKs.
 21 Q. Let's look at page {F/630/8}, if we may. Just two last
 22 references on this PEAK and then we will move on to the
 23 next bug. We come down to the second yellow box which
 24 is 16th June 2010 at 9.37.08.
 25 A. Sorry, I haven't fixed the time. Could you repeat it?

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1 Q. It is the second yellow box.
 2 A. Yes:
 3 "... general issue ... error handling ..."
 4 Yes.
 5 Q. Second part of that box:
 6 "There is a wider, general issue in relation to
 7 error handling that is still not addressed, hence which
 8 can and will still cause roll-over and subsequent
 9 discrepancies."
 10 A. Yes.
 11 Q. You didn't see this either because you didn't look at
 12 the PEAK?
 13 A. No, I didn't look at the PEAK.
 14 Q. "This wider issue is outstanding, and can also
 15 contribute to screen freezes and double settlements and
 16 hence further discrepancies."
 17 A. Yes.
 18 Q. "The wider issue can occur when any unhandled exception
 19 occurs in the early stages of the roll-over process ...
 20 this was just one example."
 21 A. Yes. Sorry, are we still on the PEAK --
 22 Q. Yes, still on the same PEAK.
 23 A. -- where the KEL said it was a Java exception?
 24 Q. Yes.
 25 "The wider issue is addressed by the fix for this

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1 PEAK."
 2 That is in June.
 3 A. Yes.
 4 Q. Okay. Let's just go now to, finally, page {F/630/10} of
 5 the same PEAK, it is the last reference on this one. If
 6 you look, it is 17th September 2010, 16.31.53.
 7 A. Yes. This quote does sound familiar to me, actually.
 8 Q. "This problem has happened intermittently since April
 9 but never at the levels seen then. Being investigated on
 10 PC0204396. The good news is that no instances have been
 11 seen since this fix was applied. Closing call."
 12 A. Yes.
 13 Q. So we have a period there that we can identify over
 14 which it was happening intermittently as well?
 15 A. Yes.
 16 Q. And you had no feeling for any of that because you
 17 hadn't read the PEAK?
 18 A. My feeling was I'd read the KEL and I think I'd formed
 19 the opinion it was a transient effect, and Fujitsu had
 20 done that, so I didn't drill down.
 21 Q. For the reasons you have given before?
 22 A. Yes.
 23 Q. Let's move if we may now to number 8 and we find that --
 24 just to do it the same way again, if we go back to the
 25 joint statement 2 table and we look at {D1/2/7}.

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1 A. Row 8.
 2 Q. It is row 8. The recovery issues are identified there.
 3 A. Mm.
 4 Q. Mr Coyne has made references to the text in certain
 5 PEAKs.
 6 A. Yes.
 7 Q. And you have given your opinion there, you say they are
 8 not indicative of errors in Horizon, they provide
 9 guidance on how to correct discrepancies caused by human
 10 errors or other errors.
 11 A. Yes.
 12 Q. You say:
 13 "Because there were many such errors, there were
 14 many calls to the help desk and many PEAKs and KELs."
 15 Then it is basically your same theory, that:
 16 Normally, correction of errors involved back office
 17 reconciliation and issuing TCs."
 18 And that's accurate.
 19 A. It is a different theory really. Recoverable
 20 transactions are a big subject and they are complicated
 21 because the point at which a recoverable transaction can
 22 go wrong is very variable through the sequence, and
 23 therefore the number of recovery actions, the type of
 24 recovery actions is complicated. Horizon was designed
 25 so that with the assistance of the postmaster most of

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1 these could be recovered, but there are things called
 2 failed recoveries, which again were part of the design
 3 of Horizon, and those were the failed recoveries but
 4 particularly the ones where Fujitsu had to get involved.
 5 But failed recoveries means the recovery process had
 6 failed, that's the way Horizon was designed because
 7 these things are so complicated you can't handle them
 8 all automatically. So it is a big subject but there is
 9 plenty of useful evidence about it.
 10 Q. You say in your table at {D3/2/124}.
 11 A. This is the 959T KEL, is it?
 12 Q. Yes. You say:
 13 "This is another complex KEL with strong overlap
 14 with previous KEL."
 15 A. Yes. This KEL is cited in a large number of PEAKs.
 16 Q. And in fact when we go back to the table at {D1/2/7},
 17 Mr Coyne has actually quoted from one of the PEAKs we
 18 see there, the first one he quotes from. Do you see
 19 "PC0198352"?
 20 A. Yes.
 21 Q. And he has quoted:
 22 "This problem caused a loss at the branch for which
 23 they should not be liable."
 24 Pausing there. This did have the potential to cause
 25 the type of discrepancy which you have given evidence

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1 about being later corrected, didn't it?
 2 A. The word "problem" doesn't imply a bug in Horizon.
 3 Q. You didn't read these PEAKs yourself, did you?
 4 A. I have read a fair sample of recovery PEAKs. Maybe not
 5 these ones, but I have read a fair sample.
 6 Q. If we go over the page {D1/2/8}, do you see Mr Coyne
 7 points out there that this KEL is referred to by 2,473
 8 PEAKs --
 9 A. Yes, that's --
 10 Q. -- from 2010 to 2018.
 11 MR JUSTICE FRASER: Where are we looking?
 12 MR GREEN: At the top of that page under the "Coyne Opinion
 13 as to branch account impact", my Lord.
 14 MR JUSTICE FRASER: Yes.
 15 A. That is correct.
 16 Q. Just pausing there, Dr Worden. If something is handled
 17 by NBSC and corrected straightaway, it doesn't make it
 18 necessarily up the line to SSC, does it?
 19 A. No. I mean there are various levels of recoverable
 20 transactions. There is a recoverable transaction that
 21 the subpostmaster can follow the instructions and can
 22 fix it himself, there is the ones where he needs help
 23 from NBSC, there's ones where he needs help from further
 24 down, and there are failed recoveries where PEAKs are
 25 involved. All of those things happen.

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1 Q. In the case of a failed recovery, it can be sorted by
 2 NBSC in some way or by a transaction correction without
 3 referring to SSC?
 4 A. That's a good question. I think the failed recovery
 5 port usually involves not just NBSC, it involves MSU,
 6 and there is quite a complicated process of guiding the
 7 transaction through various states until it gets to the
 8 F99 state.
 9 Q. Can I just invite you to look at what Mr Coyne said --
 10 A. Yes.
 11 Q. -- having actually tried to identify through the
 12 available disclosure how many PEAKs were referenced and
 13 set them out. He says it is referred to by 2,473 other
 14 PEAKs from over that range:
 15 " ... each of these may (but may not) indicate a
 16 similar issue with the horizon recovery process and
 17 potentially creating a discrepancy within branch
 18 accounts."
 19 If we accept his definition of discrepancy and not
 20 yours, yes?
 21 A. This is all about temporary discrepancies in branch
 22 accounts.
 23 Q. Park the temporary discrepancy point about which we have
 24 heard a lot.
 25 A. Yes.

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1 Q. What he has said there is correct in the number of PEAKs
 2 as far as you know?
 3 A. It is correct, yes.
 4 Q. And it is scrupulously fair in how he has described it?
 5 A. Well, "issue with the Horizon recovery process",
 6 I believe these issues are how Horizon was designed.
 7 Q. But what he's said there, he has carefully put "issue",
 8 leaving open the availability of an argument between
 9 experts about what the nature of the issue is, but what
 10 he has scrupulously done there is perfectly fair, isn't
 11 it?
 12 A. I think so. I mean the difference between the experts
 13 is that, to summarise something Mr Coyne said in his
 14 oral evidence, he believes that these recovery processes
 15 can be automatic. Now, I don't believe that. I believe
 16 recovery of recoverable transactions is very complicated
 17 and needs human intervention and things like failed
 18 recoveries are inevitable.
 19 Q. We can come back to that.
 20 Can we look at now over the page -- I apologise,
 21 stay on page 8, if we may.
 22 MR JUSTICE FRASER: Are we going on to number 9?
 23 MR GREEN: We are going on to number 9 at {D1/2/8}.
 24 A. Reversals.
 25 Q. Now, the description Mr Coyne gives is fair one, isn't

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1 it, where he says:
 2 "In April 2003 due to a failure in regression
 3 testing, Horizon version S30 was released by Fujitsu and
 4 this introduced a bug where the value of transactions
 5 reversed by subpostmasters was shown twice in the amount
 6 of the reversal in branch accounts."
 7 That's a fair summary?
 8 A. I think that's correct, yes.
 9 Q. And --
 10 A. Sorry, can I --
 11 Q. You have said, beside it:
 12 "Transaction reversals are a complex area which,
 13 like recoverable transactions are less familiar to
 14 subpostmasters and are more prone to human error."
 15 A. Yes.
 16 Q. "They lead to many calls to the helpline and to many
 17 KELs and PEAKs - not necessarily related to any fault in
 18 Horizon."
 19 A. Yes.
 20 Q. Now, you then refer to Mr Coyne's supplemental report at
 21 3.99 to 3.101. He refers there to cash remming reversal
 22 issue, and you say:
 23 "Whether or not this was caused by a fault in
 24 Horizon, all remming errors are detected by Horizon and
 25 corrected by TCs ... therefore ... no lasting effect on

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1 branch accounts."
 2 So a slightly different context but the same point
 3 about correcting remming errors is your response to what
 4 he said?
 5 A. That is my response to those paragraphs of his report.
 6 Q. And the correction by transaction corrections is a point
 7 that we can trace all the way back to Dalmellington?
 8 A. Dalmellington is an example of it, yes.
 9 Q. Then if we go over the page {D1/2/9}, we get to number
 10 10, which I think is one that you accept in your list?
 11 A. I do, yes.
 12 Q. Can I just ask you about the entry in your appendix
 13 table at {D3/2/129}, 5.93.
 14 A. Obeng.
 15 Q. This is a Catherine Obeng KEL.
 16 A. Yes.
 17 Q. And what you say about it, you have given your opinion
 18 there. You say:
 19 "This is further evidence of the failed recovery
 20 report doing its job ..."
 21 A. Yes.
 22 Q. ... alerting Fujitsu -- "
 23 MR JUSTICE FRASER: "Allowing".
 24 MR GREEN: I'm so sorry.
 25 MR JUSTICE FRASER: Or is it --

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1 MR GREEN: My Lord, I think in 5.93 I think it says
 2 "alerting".
 3 MR JUSTICE FRASER: I'm so sorry. Yes.
 4 MR GREEN: "... alerting Fujitsu to failed recoveries, so
 5 they can investigate them and make any necessary
 6 corrections to accounts."
 7 A. Yes. Perhaps I should have said have "guided the
 8 transactions to the correct state".
 9 Q. Then you say:
 10 "This was caused by a complex 'grey' communications
 11 failure which could not be reproduced ..."
 12 A. I presume I got the word "grey" from somewhere, but the
 13 meaning I would mean is intermittent, come and go.
 14 Q. Is this your wording, Dr Worden?
 15 A. "Grey" is not my natural choice of terminology so I must
 16 have got it from the KEL or the PEAK or something.
 17 Q. Let's have a look at where you may have got it from.
 18 Let's look at the appendix to Mr Parker's statement,
 19 {E2/11/43}.
 20 A. This is Fujitsu's analysis?
 21 Q. The words here are:
 22 "This is further evidence of the failed recovery
 23 report doing its job ..."
 24 A. Yes.
 25 Q. Just to give you the wording you had in yours:

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1 "This is further evidence of the failed recovery
 2 report doing its job."
 3 A. Yes.
 4 Q. Mr Parker has the word "and", you have a dash.
 5 And then:
 6 "... alerting Fujitsu to failed recoveries to enable
 7 them to investigate them and make any necessary
 8 corrections ..."
 9 A. Yes.
 10 Q. And then a couple of lines down, you see:
 11 "The incident was caused by a complex 'grey'
 12 communications failure ..."
 13 You took that from Mr Parker's appendix, did you?
 14 A. No, I wrote my bit before that.
 15 Q. So he may have taken it from you, we don't know?
 16 A. He may have taken it. He definitely would know if they
 17 took it from me.
 18 Q. I see. But you are not sure where you got it from,
 19 "grey"?
 20 A. I think I must have got it from a KEL or PEAK somewhere.
 21 Q. You are pretty sure that Mr Parker got it from you
 22 rather than --
 23 A. Absolutely, because I know the chronology. I only saw
 24 the witness statement when it was issued, I had written
 25 my report, and it is obvious from the terminology that

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1 they use that they sometimes picked up my wording.
 2 Q. I understand.
 3 MR JUSTICE FRASER: And "grey" means intermittent?
 4 A. To me, yes.
 5 MR JUSTICE FRASER: And is that correctly -- or does that
 6 match your understanding of what the words in brackets
 7 of Mr Parker mean, where he I think describes grey?
 8 A. "... network kept switching between good and bad; not
 9 solid good or solid bad ..."
 10 So that is very much the sense, yes.
 11 MR JUSTICE FRASER: That's the same as your intermittent?
 12 A. Yes, intermittent, yes.
 13 MR GREEN: Can we look at a discrete issue in relation to
 14 Drop & Go, if we may, for a moment, please, and look
 15 please at {F/1848.8.2/1}. This is one of the more
 16 recent PEAKs disclosed, this was disclosed on
 17 30 May 2019. We are going to provide you with a copy.
 18 I think we may have a copy of that.
 19 A. Drop & Go I think is a business parcel service where you
 20 can somehow jump the queue if you have got a card.
 21 (Handed) Thank you.
 22 Q. If we get that up on the common screen.
 23 Sorry, do you want a tab, Dr Worden?
 24 A. All right, thank you.
 25 Q. To be fair to you, Dr Worden, this was only disclosed on

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1 30 May. Do you know if you have had a chance to look at
 2 this?
 3 A. I do not think I have seen this PEAK. I have gone and
 4 looked at what Drop & Go is, but not this PEAK.
 5 Q. I understand. We can see it is created on
 6 21st August 2018. You see it is opened just under the
 7 "Progress Narrative", the start of the main box, date
 8 21st August 2018, 15.43.56.
 9 A. Yes, it is "Failed Drop & Go & Go Top Up". I understand
 10 that is you have a card for Drop & Go and you top it up,
 11 and some process decrements it when you send parcels and
 12 it enables you to do them quickly.
 13 Q. Now could we go over the page, please, to
 14 {F/1848.8.2/2}, and you will see there:
 15 "The mystery is how a top up of £30 came to be in
 16 the Horizon basket without having been credited to any
 17 Drop & Go account."
 18 A. Yes.
 19 Q. "We have heard anecdotal of other such occasions, but
 20 never with adequate information to be able to
 21 investigate."
 22 A. Yes.
 23 Q. You are aware, aren't you, I think, one of the closure
 24 codes for SSC was that they didn't have adequate
 25 information to investigate?

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1 A. Yes, and that was a kind of a black mark for the low
 2 level support, I think.
 3 Q. If we go over the page to {F/1848.8.2/3}, please, this
 4 is an instance of KEL cardc235Q. Do you see that?
 5 A. Yes.
 6 Q. Then it says:
 7 "As stated in the KEL 'This may be an issue with
 8 script ADCScript-CDBalanceTopUp or a user error ...'"
 9 A. Yes. So they don't know if it is reference data error
 10 or user error.
 11 Q. They don't know whether it is a problem with the script
 12 or a user error.
 13 A. That is right, yes.
 14 Q. And then immediately under that, Dr Worden, do you see
 15 it says:
 16 "Here are the keystrokes and messages from the
 17 counter ..."
 18 A. Yes.
 19 Q. "... which might help Atos."
 20 A. Yes.
 21 Q. And we can actually see individual keystrokes being
 22 entered?
 23 A. Yes.
 24 Q. And set out there?
 25 A. Yes.

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1 Q. And whatever we might have made of those lines of text
 2 before, we can see they are actually described as
 3 "keystrokes and messages from the counter"?
 4 A. Yes.
 5 Q. So:
 6 "Button: WS-F-Home ..."
 7 Etc. Do you see:
 8 "Button: enter ..."
 9 A. Yes.
 10 Q. "Button: 0/OK to continue."
 11 A. Yes.
 12 Q. So, if you had understood from Post Office's evidence at
 13 some point that keystrokes would have been available to
 14 Post Office, this is the sort of thing that that would
 15 look like, isn't it?
 16 A. Yes, it is. But I do not think that is what it is.
 17 Q. What do you think this is?
 18 A. I think in frontline support Fujitsu had an operation
 19 called TED, which I can't remember what the initials
 20 stand for, but they look at event logs, and I think
 21 keystrokes are in event logs and used by Fujitsu when
 22 they are investigating a bug or a mystery of some kind.
 23 Q. So you think that somewhere in the system through event
 24 logs you can find these keystrokes?
 25 A. I think so. I'm pretty sure of it.

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1 Q. Pretty sure, thank you.
 2 A. Yes.
 3 Q. Now, what we see in relation to this, if I can refocus
 4 your attention on the script that was identified in the
 5 KEL.
 6 A. Yes, the ADC script.
 7 Q. Yes, it is the ADC script. It is the CD balance top up
 8 script, isn't it?
 9 A. Yes.
 10 Q. If we go please to the fix, we find that at {F/1787.1/1}
 11 A. Sorry, are we -- have we got there?
 12 Q. That will come up in a minute. It is a document on
 13 {F/1787.1/1}.
 14 A. Right, okay.
 15 Q. You will see here "Drop & Go Top Up Live Issue Fix".
 16 A. Yes, that seems to be the same thing ... date and ...
 17 yes.
 18 Q. If we go over the page, please, you will see there is
 19 a contents page?
 20 A. So this is --
 21 Q. Okay?
 22 A. -- an Atos ...
 23 Q. Then we go over the page to page {F/1787.1/3}. And this
 24 was also disclosed on 30 May, so you may not have seen
 25 this before?

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1 A. No, I haven't seen this before. It is interesting .
 2 Q. But if we look at page {F/1787.1/3}.
 3 A. We're on page 3, yes.
 4 MR JUSTICE FRASER: Can you just tell me the date of this
 5 document?
 6 MR GREEN: This document, my Lord, is dated 6th April 2018.
 7 If we look under the table "Branch: Hasland":
 8 "The Balance & Top Up APADC script ..."
 9 And then in brackets we can see a number, and then:
 10 "... CDBalanceTopUp ..."
 11 So it is the same script, isn't it?
 12 A. Yes. It is interesting that the fix report is concerned
 13 with the specific branch where the problem came up.
 14 There we are.
 15 Q. Let's just take it in stages, if we may. It says that
 16 the script had a bug in it --
 17 A. Yes.
 18 Q. -- and that it incorrectly allowed the transaction to
 19 progress after an unrecoverable time out had been
 20 identified?
 21 A. Yes.
 22 Q. This is resolved in version 6.12.
 23 A. Yes.
 24 Q. Do you see that?
 25 A. Yes.

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1 Q. They had also noticed a problem, immediately under that,
 2 issue 2, that the same logic had been used for another
 3 transaction, the open account transaction?
 4 A. Right. I don't know what the open account transaction
 5 is.
 6 Q. Let's leave that on one side for a moment.
 7 What we notice about this, Dr Worden, is that this
 8 document, with quite a detailed explanation of having
 9 identified the bug in the fix, is dated 6th April 2018,
 10 isn't it?
 11 A. I believe so.
 12 Q. Then if we go back to {F/1848.8.2}, which is the PEAK
 13 that we were looking at.
 14 A. It is later, yes.
 15 Q. It is later.
 16 A. Yes.
 17 Q. It is 21st August 2018.
 18 A. Yes.
 19 Q. And at that point we can see, if we go back to page 1 of
 20 the PEAK, very kindly, we can see that Henk Bakker at
 21 the Post Office, this is all a mystery to him
 22 {F/1848.8.2/1}.
 23 Because if we go over the page --
 24 A. "... Accenture's finding ..."
 25 Yes, right.

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1 Q. -- he says {F/1848.8.2/2}:
 2 "The mystery is how a top up of £30 came to be in
 3 the Horizon basket without having been credited to any
 4 Drop & Go account. We have heard anecdotal of other
 5 such occasions, but never with adequate information to
 6 be able to investigate ."
 7 So, Dr Worden, what we see from that is that
 8 something for which there had been a detailed fix
 9 description set out in a document in April was still
 10 a mystery to Post Office dealing with that and other
 11 anecdotal in August of the same year?
 12 A. Well, could we go back to the beginning of the fix
 13 report. The fix report obviously involves a different
 14 branch from the branch here.
 15 Q. Indeed.
 16 A. And the question is whether it is the identical problem
 17 or -- but it seems a closely related problem certainly.
 18 Q. They both have a problem with Drop & Go top up, yes?
 19 A. And that's presumably one or two --
 20 Q. In the same script?
 21 A. Do we know it is the same script in each case?
 22 Q. We looked at the script. Do you remember I showed you
 23 the script, it is the CD balance top up script in both
 24 cases.
 25 A. We haven't looked at the actual script.

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1 Q. No, we looked at the name of the script in both cases.
 2 A. The name is the same, is it?
 3 Q. Yes, "APADC script CDBalanceTopUp script".
 4 A. Yes. So a fix was made to the script which did not fix
 5 that -- some problem subsequently emerged.
 6 Q. Dr Worden, can I suggest to you it is not wildly
 7 reassuring, is it?
 8 A. Fixes sometimes go wrong, there is no question,
 9 especially with reference data, which is not a Fujitsu
 10 thing, it is Atos/Post Office. Fixes do go wrong
 11 sometimes.
 12 MR GREEN: I'm most grateful. Would that be a convenient
 13 moment, my Lord?
 14 MR JUSTICE FRASER: We will have a 10-minute break. If we
 15 come back just a couple of minutes before 12 o'clock,
 16 please.
 17 (11.48 am)
 18 (A short break)
 19 (11.59 am)
 20 MR GREEN: Dr Worden, we have now looked at ten example KELs
 21 and in your first report --
 22 A. Sorry, do you mean example ...
 23 Q. Ten example bugs, we have just been through the first
 24 ten, and we have seen your approach. On the basis of
 25 the approach you have taken overall you derived some

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1 figures for the maximum possible number of bugs
 2 corrected for KEL sampling, creation and retention?
 3 A. I do yes.
 4 Q. And that was on the basis obviously of your approach?
 5 A. Yes, my limited sample that I was able to take in my
 6 first report and in my second report.
 7 Q. Understood. If we look at {D3/1/173}.
 8 A. Right.
 9 Q. There is a table there. At the bottom we see in row E2
 10 you have given a label, the bottom row:
 11 "Maximum possible number of bugs, corrected for KEL
 12 sampling, creation, and retention."
 13 A. I think actually there may be a typo in the formula.
 14 The calculation is actually done right, but I think if
 15 you look at the formulae it is not quite ...
 16 Q. There is no R, it is obviously referring to L.
 17 A. L, that's right. You have identified it precisely.
 18 Q. While we are on errors in the table, did you notice at
 19 all that the figure at the top row is wrong?
 20 A. Top row?
 21 Q. The mean number of branches in PO.
 22 A. Shall we correct that?
 23 Q. Well, did you notice it was wrong?
 24 A. I think that was an average I did based on some kind of
 25 trend from -- because there were a lot at one stage and

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1 it came down.
 2 Q. It is not a huge deal, Dr Worden, but would you accept
 3 from me that to get the number you derived you actually
 4 have to add in the figures for 1999 in the source data
 5 by accident and average over 20 years? That's the only
 6 way we were able to derive the same figure you derived.
 7 A. Okay, fine.
 8 Q. It is correctly done on the approach you have stated you
 9 are doing. It is 13,317, so not a huge difference.
 10 A. Okay.
 11 Q. I only mention it because you mentioned, where is R? So
 12 it is the other minor --
 13 MR JUSTICE FRASER: So am I right, bottom right-hand corner
 14 should be $E2 = L/X$?
 15 A. Yes, I think that's right.
 16 MR GREEN: And if we focus on the figures you have come up
 17 with, you say your conservative estimate is 672 bugs.
 18 A. Yes -- no, my conservative one, yes, correct.
 19 Q. Is 672. And what you call your central estimate is 145?
 20 A. Yes, right.
 21 Q. Now if we turn there, please, to the way you have
 22 derived those two.
 23 A. Yes.
 24 Q. The formula you have got is $E2 = R/X$?
 25 A. And it should be L/X .

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1 Q. It should be L/X , we know that. No problem there.
 2 A. Yes.
 3 Q. You say the probability that a KEL is created and not
 4 archived given that a bug occurs, and you have got two
 5 different probabilities of that happening, 0.69 and
 6 0.30?
 7 A. Yes.
 8 Q. And just translating that into real life, the
 9 conservative one would be more likely to be right if
 10 there was a greater headwind or inefficiency in the
 11 creation of KELs?
 12 A. That is right. The conservative one says this process
 13 is really pretty inefficient.
 14 Q. Yes. And because you don't know about the facts of all
 15 that, you have given two examples?
 16 A. Yes. And indeed the whole table, if you like, is my
 17 assumptions, which are only assumptions of fact, and if
 18 the court finds different on any entry of the table it
 19 is designed so that the court can put its own finding in
 20 and recompute.
 21 Q. But even on your approach, which fed into the figures,
 22 yes, we have got 672 bugs conservative estimate and
 23 central estimate of 145?
 24 A. Yes. And the key thing that drives that is the size of
 25 the sample of KELs I was able to sample.

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1 Q. Dr Worden, we understand that it is a prisoner to your
 2 approach but I'm just clarifying.
 3 A. Yes.
 4 Q. And in terms of number of affected branches by
 5 particular bugs, could we look at {D1/2/3}, please.
 6 Let's just have a glance at the numbers in the first few
 7 fields there to get our eye in.
 8 Receipts and payments mismatch affected about 60,
 9 possibly 62 branches?
 10 A. Yes.
 11 Q. Callendar Square, 30.
 12 A. Yes.
 13 Q. Local suspense, 14.
 14 A. Yes.
 15 Q. And Dalmellington, 88. So that gives us a feel for
 16 the --
 17 A. Well, Dalmellington 88 I would put on a separate
 18 category because, as I say, Dalmellington was not
 19 something that came to Fujitsu's attention and so it
 20 went on for a long time.
 21 Q. Okay.
 22 Bug 6(i) on page 5, 57 branches?
 23 A. Well, that's not a bug as far as I see.
 24 Q. Okay. {D1/2/5}
 25 If we take an average of the first four bugs, which

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1 I appreciate you disagree with Dalmellington, but the
 2 average of that is 48 affected branches per bug of the
 3 first four bugs?
 4 A. Yes. I mean I should just say briefly it is not the
 5 approach I took.
 6 Q. I understand. I'm just following through the maths,
 7 that's all, on an assumption.
 8 A. Yes.
 9 Q. And if we were to take that approach, 144 bugs affecting
 10 48 branches each.
 11 A. This is the central estimate?
 12 Q. Yes, if we look at your central assumption of 145 bugs
 13 affecting 48 branches per bug.
 14 A. Yes.
 15 Q. On average.
 16 A. Yes.
 17 Q. If that were a reasonable average, that would result in
 18 6,960 incidents?
 19 A. Yes.
 20 Q. And if we looked at 672, which is what you describe as
 21 your conservative estimate.
 22 A. Yes.
 23 Q. And we multiply that by 48, that would be 32,256 --
 24 A. I agree with those figures.
 25 MR JUSTICE FRASER: You are going really quite quickly.

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1 MR GREEN: I'm so sorry, my Lord. The first one was 148 --
 2 MR JUSTICE FRASER: So you multiply that by the 48 and you
 3 get to the 6,960. And then your second one was taking
 4 the 672, multiplying it by 48, and getting to 32,000.
 5 MR GREEN: 256.
 6 MR JUSTICE FRASER: Yes.
 7 A. This is not a calculation I have made, of course.
 8 MR GREEN: I understand, Dr Worden.
 9 MR JUSTICE FRASER: That's rather why I'm trying to get
 10 Mr Green to go a bit more slowly.
 11 MR GREEN: I'm grateful, my Lord.
 12 MR JUSTICE FRASER: Right.
 13 MR GREEN: And if we used an average more favourable to the
 14 Post Office of 40, we would get a figure of 5,800 for
 15 the 145 and we'd get a figure of 26,880 incidents for
 16 the conservative estimate of 672.
 17 A. Yes.
 18 Q. There are only 550 claimants and even with few multiple
 19 branches and a few people having been affected by more
 20 than one instance, on your definition of consistent, the
 21 figures we have just been looking at are consistent with
 22 the complaints made by the claimants in this case?
 23 A. Let me think about that. In the sense of the
 24 calculation you have done, I hesitate to comment.
 25 Q. No, I'm just asking the question. Those figures are

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1 consistent on your definition?
 2 A. They are not consistent in terms of financial impact
 3 which is the only thing I calculated.
 4 Q. We have got your point on being corrected. Let's leave
 5 that to one side.
 6 A. Yes.
 7 Q. On actual incidents of bugs affecting branch accounts,
 8 we have got your point on subsequent correction, but
 9 those figures are totally consistent --
 10 A. Well, let's work it out. Which figure do you want to
 11 take?
 12 Q. Well, there are -- let's take 32,256.
 13 A. Let's take the 32,000, okay. Then what I would say is
 14 that claimants were in branches and held branches for
 15 52,000 months, I think.
 16 Q. So you do the average incidents across everyone and
 17 scale it back?
 18 A. What I would say is over the whole population of
 19 Post Office there were 3 million monthly branch
 20 accounts, and claimants had 50,000 of them, so we have
 21 to do that division and I can't do it on the spot.
 22 Q. We are back to Penny Black on that point, aren't we?
 23 A. No, we are not. We are doing a multiplication, a plain
 24 multiplication.
 25 Q. Okay.

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1 A. I would have to write it down. So what we are saying is
 2 you start with 32,000 occurrences of a bug, and I say
 3 claimants held branches for 50,000 months --
 4 Q. This is branches hit, not occurrences, so this is --
 5 A. Yes, absolutely. But each branch was hit in a month --
 6 Q. At least once.
 7 A. Yes. And we have to take 50,000, we divide it by
 8 3 million, and what I get from that is I can cancel all
 9 the thousands out and I get $32 \times 50/3$, so that is about
 10 500. So it is consistent with one occurrence of a bug
 11 to each claimant branch during their tenure.
 12 Q. Thank you, Dr Worden. Consistent with a branch with one
 13 occurrence of a bug -- one or more occurrence of a bug,
 14 but at least one bug affecting a claimant branch and
 15 that bug being a bug of a type that impacts branch
 16 accounts?
 17 A. What we have calculated is the mean, so some branches
 18 are affected by more, some less etc, and that's what
 19 that calculation would suggest, the conservative one.
 20 I think that's one of the conservative numbers, isn't
 21 it? The central estimate would give a smaller number.
 22 Q. Yes.
 23 Can we move forward to audits, please. Now, can we
 24 look, please, at {D1/4/5} which is the joint report
 25 number 3. If we look at paragraph 3.23.

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1 A. Yes.
 2 Q. You explain that your opinion in relation to
 3 countermeasures is based on the fact that Horizon is
 4 a tightly run ship -- sorry, you base your opinion that
 5 Horizon is a tightly run ship:
 6 "... on the high quality of documentation, design
 7 review, and testing evident in many of the documents I
 8 have read; on the Ernst & Young service audits of
 9 Fujitsu which found a high level of controls to be
 10 effectively implemented ..."
 11 Yes?
 12 A. Yes.
 13 Q. That's salient because high level of access controls is
 14 one of your robustness features?
 15 A. Yes. There's something in the joint statement about if
 16 there is a poor level of access controls that is a black
 17 mark against robustness.
 18 Q. Indeed. Are you aware that the type of audit that EY
 19 was carrying out that I think you are referring to is --
 20 there's one management letter for 2011 and then there
 21 are the other service audits which you have referred to?
 22 A. Yes.
 23 Q. From 2012 onwards?
 24 A. Yes.
 25 Q. But there was nothing before -- there were no service

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1 audits before 2012?
 2 A. None have been disclosed certainly, yes.
 3 Q. What we have, I will show you, is nothing on this before
 4 2010, then we have the 2011 audit, and then we have
 5 service audits which you have referred to from 2012
 6 onwards.
 7 A. That is right, yes.
 8 Q. Now, let's look first if we may at the 2010 audit, it is
 9 at {F/646.1/1}. This is a Royal Mail document.
 10 If we go to page {F/646.1/2}. If you look at the
 11 second paragraph?
 12 A. "In order to make our audit approach ..."
 13 Q. " ... we seek to rely on SAS 70 audits. These audits
 14 are independent audit reports over the control
 15 environments of the group's IT suppliers. Whilst we
 16 were able to ..."
 17 MR JUSTICE FRASER: Where are you reading from?
 18 MR GREEN: The second paragraph, my Lord.
 19 MR JUSTICE FRASER: The one that starts "In order to"?
 20 MR GREEN: Exactly, my Lord:
 21 "In order to make our audit approach as efficient as
 22 possible, we seek to rely on SAS 70 audits. These
 23 audits are independent audit reports over the control
 24 environments of the group's IT suppliers. Whilst we
 25 were able to place reliance on this third party testing

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1 for one of the Group's suppliers, CSC, we were unable to
 2 place reliance on Fujitsu, due to a SAS 70 audit report
 3 not being available."
 4 Yes? And we see there:
 5 "The Fujitsu control environment is bespoke to POL
 6 and therefore the cost of a SAS 70 is borne entirely by
 7 POL, whereas for CSC the control environment is similar
 8 for a number of companies and therefore the cost is
 9 shared."
 10 You see?
 11 A. Yes.
 12 Q. "The cost of Fujitsu obtaining a SAS 70 audit was
 13 prohibitive; therefore we have performed our own
 14 independent audit procedures to obtain assurance over
 15 the Fujitsu IT general control environment."
 16 Now, pausing there, the SAS 70 audit, do you know,
 17 is a predecessor of the service audit that you are
 18 referring to?
 19 A. Well, it seems that the SAS audit is a general kind of
 20 audit that many suppliers go through, yes.
 21 Q. Do you know as a matter of your expertise and experience
 22 in IT whether or not the SAS 70 audit was later
 23 superseded by the ISAE 3402 audit?
 24 A. I don't particularly know that.
 25 Q. You don't know that?

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1 A. I don't.
 2 Q. If we just go back up for a moment, do you see in the
 3 top paragraph halfway down on the right-hand side
 4 towards the right-hand side, "Key individuals"? Halfway
 5 down the first paragraph on the right-hand side?
 6 A. Yes, right:
 7 "... Group IT function ..."
 8 Yes.
 9 Q. "Key individuals within the Group IT function are
 10 responsible for managing third party suppliers,
 11 particularly the outsourced service provided, CSC, and
 12 delivery of our audit information requests."
 13 A. Yes.
 14 Q. "Whilst some improvements were noted in the POL IT audit
 15 process, we continue to face difficulties in obtaining
 16 accurate information from Fujitsu, one of the outsourced
 17 providers of POL IT systems."
 18 A. Yes.
 19 Q. Now, had you considered this document at any point?
 20 A. I certainly considered this document. I must admit that
 21 the introductory paragraphs -- I tended to go straight
 22 down to the table of observations.
 23 Q. I understand. But this one doesn't actually have
 24 a table of observations.
 25 A. Sorry. Well, this is just a letter, is it?

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1 Q. Well, this is what we have got from Royal Mail as
 2 a result of Royal Mail providing disclosure that was
 3 invited by the court.
 4 A. Right. I'm confused a bit. I thought it was the
 5 management letter that --
 6 Q. No, no. We will take it in stages. This is 2010.
 7 A. Okay, yes. Sorry, I was confused about that.
 8 Q. That's all right. If we come down, "Control
 9 observations"?
 10 MR JUSTICE FRASER: Have you seen this document before or
 11 can't you remember?
 12 A. I do not think I have if that's the case.
 13 MR JUSTICE FRASER: All right.
 14 Go on, Mr Green.
 15 A. Obviously I'm thinking about the Ernst & Young
 16 management letter which has the table and all that.
 17 MR GREEN: Okay. Well, let's take it in stages because
 18 there is a distinction between an audit and a service
 19 audit, we will come to that.
 20 A. Yes.
 21 Q. Let's focus on this one, if we may. In relation to
 22 control observations, it says:
 23 "POL has made significant changes to its IT
 24 environment in 2010."
 25 A. So this is a year earlier really than the Ernst & Young

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1 letter.
 2 Q. Yes.
 3 A. No, I haven't seen it.
 4 Q. And it is reporting that:
 5 "Post Office Limited has made significant changes
 6 ... resulting in the inclusion in scope of the Credence
 7 application for the first time."
 8 A. Yes.
 9 Q. So from this we learn that Credence was outside any
 10 scope of reporting prior to that?
 11 A. Outside the scope of certain previous audits?
 12 Q. Yes.
 13 A. It seems so, yes.
 14 Q. So not only do we not have any service audits prior to
 15 this, but we also know that Credence itself wasn't part
 16 of any audits if any were taking place.
 17 A. Yes, whereas for instance POLSAP may have been.
 18 Q. Exactly. It says:
 19 "During 2010 POL also worked with Fujitsu to deliver
 20 a new version of the Horizon application used at and in
 21 support of Post Office branches."
 22 A. Sorry, I'm not ...
 23 Q. In the same paragraph.
 24 A. Which paragraph are we on, sorry?
 25 Q. Under "Control Observations" --

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1 A. Yes.
 2 Q. -- there is a paragraph immediately below that heading
 3 and three lines down.
 4 A. "POL also worked with Fujitsu ..."
 5 Yes.
 6 Q. It says:
 7 "This new version of Horizon was also included in
 8 scope."
 9 So it is not clear from that whether the old version
 10 of Horizon was included in any scope of previous audits.
 11 A. That is right.
 12 Q. Then it says:
 13 "Following difficulties in performing the IT general
 14 control procedures with Fujitsu in 2009 a new key
 15 contact was identified to assist in the management of
 16 the IT general controls procedures with Fujitsu.
 17 However, challenges were again experienced in obtaining
 18 audit evidence in a complete and timely manner from
 19 Fujitsu, resulting in significant delays in completion
 20 of the IT general control procedures."
 21 Now, pausing there. If you are keeping proper
 22 records of access controls, for example, those should be
 23 readily available and collated in real time, shouldn't
 24 they?
 25 That's not meant to be a controversial question.

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1 A. I do not think it is controversial.
 2 Q. It is pretty clear they weren't?
 3 A. Well, the challenges were experienced, and I don't know
 4 what challenges they were.
 5 Q. If we go to the next page {F/646.1/3}, please. At the
 6 top of the page "Status on 2008-09 management letter
 7 points":
 8 "In 2008 and 2009 we noted third party users with
 9 SAP_ALL access (unlimited access to the SAP systems). In
 10 2010 we found that only select individuals and user-ids
 11 had this access and controls had been established to
 12 monitor actions of users with SAP_ALL access and to
 13 periodically review the requirement ..."
 14 So there had been a dramatic improvement on the face
 15 of that to the prior situation, had there not?
 16 A. It seems that before that certain third party users,
 17 I don't know which third parties, had some SAP_ALL
 18 access, which sounds a bit powerful, and in 2010 some
 19 improvement was made. I don't know about dramatic but
 20 certainly there was an improvement, yes.
 21 Q. "Sounds a bit powerful", is that like Emperor Hirohito
 22 saying "the war has developed not necessarily to Japan's
 23 advantage" before surrendering?
 24 A. Again, I don't know whether SAP_ALL access is read-only
 25 access, for instance, or has some permissions to do

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1 things. I don't know what SAP_ALL access is.
 2 Q. Is there a clue in the brackets:
 3 "... (unlimited access to the SAP systems)."
 4 A. It doesn't tell me immediately that changes could be
 5 made. Somebody could get in and look at things.
 6 Q. But it is consistent with the possibility --
 7 A. Absolutely.
 8 Q. -- that that is the case?
 9 A. Yes, it is consistent with that.
 10 Q. If we look at "2010-11 Challenges":
 11 "The challenges the Group faces in 2010-11 will be
 12 the continued transformation of IT and the delineation
 13 of IT services provided by CSC and Fujitsu."
 14 A. Sorry, could I just skip back very briefly, about these
 15 challenges getting stuff out of Fujitsu. This was the
 16 time when Fujitsu were in the throes of (a) maintaining
 17 old Horizon and getting new Horizon tested and so on, so
 18 that might have something to do with the challenge.
 19 Q. So you are trying to thinking up an excuse for
 20 Fujitsu --
 21 A. No, I'm not, I'm just trying to think about what was
 22 going on.
 23 Q. Let's go forward if we may, please. We are going to
 24 look at the 2011 audit. Now, let's look first at the
 25 management letter. This isn't a service audit, we will

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1 have a look --
 2 A. No, this is the management letter, fine.
 3 Q. The management letter. Do you understand the difference
 4 between an audit and a service audit under SAS 70 or
 5 ISAE 3402?
 6 A. Obviously they are very different kinds of audits. One
 7 was the management of POL and it was part of their
 8 overall audit, whereas the service audit was
 9 specifically what it said it was and we have read all of
 10 that.
 11 Q. Yes, service audits are a bit different to audits
 12 generally?
 13 A. Yes.
 14 Q. This is a management letter, 2011. It is on {F/869/1}.
 15 You were here for Mr Coyne's re-examination?
 16 A. Yes.
 17 Q. And you heard his evidence about what was raised in this
 18 audit?
 19 A. Yes.
 20 Q. If we look at page {F/869/2}, the purpose of the
 21 management letter was not focused on IT systems because
 22 this is a general audit?
 23 A. Yes.
 24 Q. "Our review of the company's systems of internal control
 25 is carried out to help us express an opinion on the

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1 accounts of the company as a whole."
 2 A. Yes.
 3 Q. "This work is not primarily directed towards the
 4 discovery of weaknesses, the detection of fraud or other
 5 irregularities ..."
 6 A. I haven't got this. Where are we?
 7 Q. At the beginning of the paragraph:
 8 "This work is not primarily directed towards the
 9 discovery of weaknesses, the detection of fraud or other
 10 irregularities (other than those which would influence
 11 us in forming that opinion) and should not, therefore,
 12 be relied upon to show that no other weaknesses exist or
 13 areas require attention."
 14 If we look at the next page {F/869/3}, the executive
 15 summary.
 16 A. Yes.
 17 Q. If you come down to the second paragraph, the end of the
 18 second paragraph says:
 19 "The recommendations we have made in this report
 20 should be seen as refinements rather than fundamental
 21 control deficiencies in comparison."
 22 Yes?
 23 A. Yes.
 24 Q. Then it says:
 25 "The main area we would encourage management to

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1 focus on in the current year is improving the IT
 2 governance and control environment."
 3 A. Yes.
 4 Q. So this was a concern at this point and I think that's
 5 common ground now?
 6 A. A ...?
 7 Q. This was a concern they were expressing?
 8 A. Yes, absolutely. There are two separate concerns. "IT
 9 governance" seems to me to go to the recommendations
 10 about POL controlling things, and "control environment"
 11 is access to systems and so on and so forth, and there
 12 are both of those there.
 13 Q. Okay. We see this is the passage that Mr Coyne set out
 14 in his -- referred to in his report and was
 15 cross-examined about extensively?
 16 A. Yes.
 17 Q. And you heard both the cross-examination and
 18 re-examination?
 19 A. Yes.
 20 Q. I'm not going to take you through all that, Dr Worden,
 21 but you heard that there were a number of concerns
 22 expressed in relation to generic accounts and certain
 23 other things, yes?
 24 A. Yes.
 25 Q. And we are going to go now to the PEAK about the use of

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1 APPSUP and have a look at that at {F/768/1}, if we may.
 2 A. Right. I will get the PEAK folder.
 3 Q. If we just look at that here. We have seen this several
 4 times before.
 5 A. Yes.
 6 Q. If you see it starts -- in the "Progress Narrative", it
 7 starts on 1st February 2011.
 8 A. Yes.
 9 Q. It says:
 10 "Details entered are:
 11 "Summary: SSC database users do not have correct
 12 permissions."
 13 A. Yes.
 14 Q. Underneath "Impact Statement", we have user and date.
 15 A. Sorry, where is impact?
 16 Q. Just go up.
 17 A. Yes, I see impact there.
 18 Q. Would you like a hard copy of that PEAK?
 19 A. I was expecting one but I may be able to get on with the
 20 screen.
 21 (Handed) Thank you.
 22 Q. We will give you one anyway in case you prefer a hard
 23 copy.
 24 You can see about 40% of the way down the page the
 25 "Impact Statement" box?

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1 A. Yes.
 2 Q. There's user, Dave Haywood. Date, 6th May 2015. Do you
 3 see that?
 4 A. Yes.
 5 Q. So this is spanning a period from 1st February 2011 to
 6 May 2015.
 7 A. Yes.
 8 Q. You didn't actually deal with APPSUP in your reports,
 9 did you?
 10 A. No, that is right, I didn't.
 11 Q. And it is a very powerful tool?
 12 A. What's a powerful tool?
 13 Q. APPSUP. It is a very powerful --
 14 A. APPSUP is a powerful -- well, it says here APPSUP is
 15 a powerful role.
 16 Q. Yes, it is a very powerful role, I should say.
 17 A. Yes.
 18 Q. And Mr Coyne identified it --
 19 A. Yes.
 20 Q. -- through his enquiries. And if you look underneath
 21 Dave Haywood's name there is a box with four points
 22 listed?
 23 A. Yes. Number one is --
 24 Q. Number one is:
 25 "SSC users affected have more access than is

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1 required to database resources. This is contrary to
 2 security policy."
 3 A. Yes.
 4 Q. Your robustness measure has two facets to it. It is to
 5 have an appropriately typed security policy and to
 6 follow it?
 7 A. That's part of it. And as I say, if there is great lax
 8 in security policy that poses a threat to robustness.
 9 Q. Indeed.
 10 A. But I would emphasise if security policy is really flaky
 11 then you start worrying about robustness.
 12 Q. If you have an inadequate security policy, that poses
 13 a threat to your robustness countermeasure?
 14 A. And it is proportional in the sense of the more
 15 inadequate it is, the bigger the threat.
 16 Q. Yes. And if you have a perfectly acceptable security
 17 policy but it is not followed, you have got the same
 18 problem?
 19 A. Yes, I mean security policies change over time and
 20 sometimes --
 21 Q. It is a simple question.
 22 A. Yes.
 23 Q. And if the matter upon which the security policy is not
 24 followed is effectively an incredibly powerful role,
 25 that amplifies the significance of the security policy

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1 not being followed?
 2 A. It does amplify it. If you are calculating impact, then
 3 impact is something to do with how much more powerful
 4 the role is and how much you trust the people that have
 5 that role, and I think SSC were fairly trustworthy.
 6 Q. You haven't actually met them?
 7 A. No, I haven't, but I have read loads of PEAKs and KELs
 8 by them.
 9 Q. Number 2:
 10 "There is currently no 'cost' to this issue."
 11 A. Cost is in inverted commas, I don't know quite what that
 12 means.
 13 Q. Let's leave that.
 14 MR JUSTICE FRASER: Where are you?
 15 MR GREEN: Just under "Impact Statement" in that 1 to 4
 16 list:
 17 "3. Perceived impact: the customer is not aware of
 18 this problem or change."
 19 A. Yes.
 20 Q. So Post Office is not aware of this?
 21 A. It seems so.
 22 Q. So they might be proceeding on the footing -- or would
 23 be proceeding on the footing that the security policy
 24 was being followed and there were not inappropriate or
 25 incorrect permissions being given to SSC?

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1 A. That is correct.
 2 Q. If we look at this, the yellow box at the bottom on your
 3 hard copy or on the screen, 1st February 2011, 11.57.35.
 4 Mark Wright is the user:
 5 "Development have delivered scripts to allow SSC
 6 users to perform certain tidyup tasks (like clear failed
 7 recoveries). However they have been delivered to work
 8 against an SSC role which SSC users have not been
 9 granted as SSC users have the APPSUP role."
 10 A. Yes.
 11 Q. So what had actually happened was there was a tiny
 12 tidyup task script produced by development, which was
 13 usable by SSC role.
 14 A. Yes.
 15 Q. The problem was that the people in SSC were using the
 16 much wider APPSUP role and hadn't been granted the SSC
 17 role because they didn't need to use it?
 18 A. Yes. I mean I don't know how many different roles there
 19 were in play.
 20 Q. Yes, but --
 21 A. Certainly APPSUP was powerful. SSC didn't have the role
 22 for this script. That's clear here.
 23 Q. But the significance of it, Dr Worden, is this, isn't
 24 it, there is a rather small tidyup script -- I don't
 25 mean to disrespect the ambit of that script -- but it is

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1 not the largest sounding task, is it, tidyup? I mean it
 2 might mean making some changes?
 3 A. Well, failed recoveries, we have seen all these PEAKs
 4 about failed recoveries, so it is significant.
 5 Q. So it is significant?
 6 A. Yes.
 7 Q. And that has been assigned, a specific script has been
 8 developed for that specific task which needed to be
 9 addressed?
 10 A. Yes.
 11 Q. And the development had provided that script on the
 12 footing that the permission was the SSC role would be
 13 able to use it?
 14 A. Yes.
 15 Q. And the reason that there is a problem that we see
 16 throughout this PEAK is because the people in SSC didn't
 17 have the SSC role. They were using the APPSUP role?
 18 A. "... delivered scripts ... However they have been
 19 delivered to work against ..."
 20 "An" SSC role, it says. So there may be several
 21 different SSC roles.
 22 MR JUSTICE FRASER: But whichever -- on the face of it,
 23 whichever role the script has been designed to work
 24 against --
 25 A. They haven't got it.

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1 MR JUSTICE FRASER: They haven't got it.
 2 A. No, I think that is right.
 3 MR GREEN: The next paragraph:
 4 "Either SSC user creation/configuration needs to be
 5 amended to make sure we have ALL required permissions of
 6 the scripts will need amending to match how our users
 7 are set up in live."
 8 A. I think it is a typo.
 9 MR JUSTICE FRASER: Should it be "all" and not "of", do you
 10 think?
 11 A. I think so.
 12 MR JUSTICE FRASER: It does read like that. But there are
 13 two options and they are in that line, is that right?
 14 A. Yes.
 15 MR JUSTICE FRASER: You either change the role so it matches
 16 what the script has been designed to work against or you
 17 change the scripts?
 18 A. Yes.
 19 MR GREEN: Exactly.
 20 A. I think later in this PEAK there is concern about
 21 development doing one thing with scripts and it takes
 22 time. There is concern about delays in the process
 23 getting the permissions right for the scripts, I think.
 24 MR GREEN: Yes, quite. There is discussion of that in the
 25 email -- discussion of that below.

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1 A. In the PEAK?
 2 Q. In the PEAK. It says:
 3 "Please see email details below describing in more
 4 detail."
 5 Then we have the detail of the problem.
 6 A. Sorry, where are we now?
 7 Q. Still on the first page:
 8 "(1) The user creation scripts provided by
 9 development offer the option to create each user type
 10 ...
 11 "(2) When we created SSC users for BDB/BRS etc. we
 12 used ?appsup? as that is what ssc have always been and
 13 what they migrated as on Horizon databases."
 14 A. Yes, I'm not quite --
 15 Q. So it looks as if APPSUP has been used throughout.
 16 A. It looks like it, yes.
 17 Q. "(3) It became clear that there is also an ssc role
 18 which we now know is a requirement for the scripts you
 19 refer to."
 20 A. Yes.
 21 Q. The scripts you refer to lose any permissions that are
 22 in the APPSUP role and not in the SSC role?
 23 A. These two sentences appear to imply that although it is
 24 "an" SSC role, it is really referring to one SSC role.
 25 Q. It looks like it, doesn't it.

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1 Then:
 2 "(5) We could grant you the ssc role as well and a
 3 call could be passed to development to include in the
 4 user creation script when ?ssc? is chosen as the group
 5 but that seems wrong as well."
 6 Then it says:
 7 "It all comes down to user administration and the
 8 incorrect assumption that adding a user is obvious and
 9 doesn't need some more detailed documentation other than
 10 the current doc which says just add the user with the
 11 relevant roles and on the relevant servers ? head, brick
 12 wall and all that."
 13 A. Yes.
 14 Q. "We can certainly add the SSC role to all users on
 15 BDB/BRS in the short-term but I would need to be sure
 16 that a call was with development for a formal review and
 17 rethink."
 18 Then there is discussion of this throughout the PEAK
 19 and you are obviously quite familiar with this PEAK
 20 because you have been referring to what happens later?
 21 A. Yes, not massively but I have reviewed it.
 22 Q. If we go to page {F/768/2}, Andrew Gibson at the top of
 23 page 2 says:
 24 "I thought the original issue was why have the SSC
 25 users not had the SSC role granted? If it is a bug in

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1 the creation scripts then yes, needs dev to fix but I
 2 thought something was said the other day about the SSC
 3 users not being set up correctly at the start?"
 4 He is right about that in the sense that this is in
 5 February 11, there may be some concern about whether it
 6 was right for SSC users to have been set up in the
 7 APPSUP role, yes?
 8 A. Well, I mean, just more generally -- I don't disagree
 9 but more generally this illustrates that it is
 10 a complicated area and that PEAK is a kind of stream of
 11 consciousness and it is quite difficult to pull the
 12 right things out of it.
 13 Q. Well, look at what Anne Chambers says on page 2, halfway
 14 down. 1st February, Anne Chambers to Andrew Gibson.
 15 She makes it pretty clear. She says:
 16 "Unfortunately development write their scripts
 17 explicitly to use ssc. So I think we're stuck with it
 18 unless they deliver new scripts (which would not be a
 19 popular or quick option)."
 20 A. That is a reference to delays in it.
 21 Q. Yes. Then look what she says there:
 22 "When we go off piste we use APPSUP. Can we have
 23 both?"
 24 A. Yes.
 25 Q. What do you think she meant by off piste?

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1 A. Well, there is two possible things I think she might
 2 have meant. One of them is when we do things we are not
 3 supposed to do, and one of them is when we do things
 4 that are abnormal and difficult and tricky and we have
 5 to not use the usual tools, may have to do something
 6 special, like going off piste in deep snow, not doing
 7 what we usually do.
 8 Q. And would you accept that your two categories are not
 9 necessarily hermetically sealed?
 10 A. Absolutely. It is complicated. Yes.
 11 Q. I won't take you through this in too much detail but if
 12 we go over the page to {F/768/3}, briefly. The third
 13 yellow box down. There is no difference between you and
 14 Mr Coyne in that the optional APPSUP role is extremely
 15 powerful?
 16 A. Yes.
 17 Q. If we go to the bottom of the page --
 18 A. Sorry, I was just trying to read the rest of this
 19 paragraph again before we move down.
 20 Q. Do you mind if we --
 21 A. Sorry, go on.
 22 Q. Because part of it is repeated where I'm taking you at
 23 the bottom:
 24 "As per the previous PEAK comments", do you see in
 25 the bottom yellow box?

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1 A. Yes.
 2 Q. "As per the previous PEAK comments, the role 'APPSUP' is
 3 extremely powerful and should only be used under extreme
 4 circumstances and under MSC supervision. As such the
 5 Branch Database design was that 3rd line support users
 6 should be given the 'SSC' role, which is effectively
 7 read access."
 8 Yes?
 9 A. Yes.
 10 Q. And then next line down:
 11 "SSC team members should only have to [access] BRSS
 12 for normal support investigations unless the information
 13 has not replicated in time. SSC should only given the
 14 optional role 'APPSUP' temporarily (by Security Ops
 15 authorisation/emergency MSC) if required to make
 16 emergency data amendments in BRDB Live."
 17 A. Yes.
 18 Q. Then it says:
 19 "It is a security breach if any user write access is
 20 not audited on Branch Database, hence the emergency MSC
 21 for any APPSUP role activity must have session logs
 22 attached under the MSC."
 23 Pausing there. You hadn't picked up on APPSUP
 24 itself as a role in your reports?
 25 A. I do not think it is mentioned in my first report, no.

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1 Q. Or in your second, can you remember?
 2 A. I'm not clear, I'm afraid.
 3 Q. And you weren't aware that there was in fact a standing
 4 MSC for particular changes to be made, were you?
 5 A. A standing MSC, what do you mean by that?
 6 Q. Were you here what we looked at the MSC at {F/1844/1}?
 7 We won't go to it now because it is a huge document.
 8 Were you aware of what the position on the MSCs was
 9 when you were writing this report about this APPSUP --
 10 A. The discussion of standing MSCs and so on I believe is
 11 quite recent.
 12 Q. Yes, but you weren't aware of it when you wrote your
 13 report?
 14 A. No, not then, no.
 15 Q. If we go please to page {F/768/7}, you can see that in
 16 April -- 10 April 2013, Andy Beardmore?
 17 A. 11.20, yes?
 18 Q. At 11.20.18:
 19 "The initial motive for this PEAK was to ensure all
 20 SSC users had the SSC role assigned to be able to
 21 execute the data correction toolset on BRDB."
 22 That is the tidyup one.
 23 "Initially the SSC users were manually set up
 24 incorrectly ... being given the same permissions as per
 25 Horizon, and had too many privileges via the APPSUP

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1 role."
 2 Pausing there, we can see that this is a reference
 3 to them all having the privileges of the APPSUP role --
 4 A. He seems to be recapping what we have been through.
 5 Q. Yes. And then if you see -- let's just follow it
 6 through:
 7 "Host-Dev have delivered the live scripts to ensure
 8 new SSC users have the correct permissions, but a
 9 follow-on MSC is required to adjust the privileges of
 10 existing users. Graham Jennings rejected this response
 11 as the approach is not consistent across the older
 12 Horizon DB's. The fact is that HNG-X did not include
 13 this change to these Horizon environments, so I believe
 14 this to be a mute point for this PEAK but more of an
 15 interest for PCI and other Audits. As such I am
 16 transferring this PEAK to the new security architect
 17 Dave Haywood for further consideration of tidying up any
 18 existing SSC users on BRDB with APPSUP role, only to
 19 have RESOURCE & SSC roles."
 20 A. Yes.
 21 Q. Now, it looks as if there's tidying up going on at that
 22 stage but we can see immediately above that box there is
 23 a 5th October 2012 release?
 24 A. A reference to the release PEAK, yes.
 25 Q. Do you see that release PEAK?

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1 A. Yes.
 2 Q. Will you accept from me that that release PEAK actually
 3 stopped new people at SSC having the APPSUP role but not
 4 existing, or do you not know about it?
 5 A. I don't know, no.
 6 Q. If we go to the bottom of the page, the last yellow box,
 7 2nd July 2014, 11.17.20:
 8 "Only new users are given the correct permissions.
 9 Existing user permissions are copied into the new builds
 10 and hence will not be corrected by Belfast Refresh.
 11 Suggest an audit of Live and Test is required to:
 12 "(1) identify existing AD accounts of Oracle users.
 13 "(2) identify SSC users from (1).
 14 "(3) run a one-time script (based on the permission
 15 scripts already delivered) to set the SSC user
 16 permissions correctly."
 17 So July 2014 they are still looking at that. It
 18 says:
 19 "The above activity can be performed under MSC but
 20 must be trialled in the Test environment before being
 21 changed in Live to ensure no adverse side-effects are
 22 encountered. Given the existing permission change
 23 scripts for new users were delivered some years ago, the
 24 probability of the change causing any unforeseen issues
 25 is thought to be low."

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1 Then at the bottom Mr Haywood, 6th May 2015:
 2 "The Business Impact has been updated:
 3 "1. SSC users affected have more access than is
 4 required to data resources. This is contrary to
 5 security policy."
 6 A. So he is currently repeating what's at the top of the
 7 PEAK.
 8 Q. Well, that's come from the top of the PEAK. What
 9 happens is the PEAK is updated, do you see? Go back to
 10 page 1. The peak is updated --
 11 MR JUSTICE FRASER: Just wait until we get to page
 12 {F/768/1}. Yes.
 13 MR GREEN: On the first page, the PEAK is updated by
 14 Mr Haywood in May 2015.
 15 A. Yes, the same date on both.
 16 Q. Yes. So we can see by the statement:
 17 "SSC users affected have more access than is
 18 required to data resources. This is contrary to
 19 security policy."
 20 Has come from his entry on 6th May 2015 on page 7?
 21 A. It certainly looks like it, yes.
 22 Q. That suggests, doesn't it, very clearly, that even in
 23 2015 the security policy was still being breached as we
 24 have seen?
 25 A. It seems to have run through that period, yes.

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1 Q. You haven't picked up on that because you hadn't read
2 that PEAK when you did your reports?
3 A. My report doesn't acknowledge that it ran for that long,
4 that is correct.
5 Q. And you hadn't picked up on it before then, or had you?
6 A. The final date -- no, I hadn't spotted it.
7 Q. And you hadn't actually reported on APPSUP itself?
8 A. I hadn't -- no, APPSUP I haven't --
9 Q. Okay. Can we just go quickly back, with that in mind,
10 to {F/869/1}, which is the EY audit 2011.
11 A. The Post Office general audit.
12 Q. That's it. The general audit, not the service audit.
13 I would like you to look at page {F/869/32}, please.
14 You can see -- do you see at the bottom ...
15 Let me just find -- sorry, can I do this slightly
16 differently. At the top of 32 -- sorry, can you come
17 and show me where it is because I was going to go to
18 a different one. (Pause) Thank you very much.
19 Sorry, do you mind if we just start at page
20 {F/869/33}.
21 A. Right. So 32 was POLSAP and 33 is HNG-X.
22 Q. Let's just come down, if we may, from -- because it is
23 the way the pages are paginated. HNG-X is in the middle
24 of 33, and underneath it says:
25 "There are inappropriate system privileges assigned

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1 to the APPSUP role ..."
2 A. Yes.
3 Q. That's specifically what we have just been talking
4 about.
5 A. Yes.
6 Q. "... and the SYSTEM_MANAGER role at the Oracle database
7 level ..."
8 A. Yes.
9 Q. And then it says:
10 "There is inappropriate privileged access at the
11 Oracle database level on the Transaction Processing
12 System server ..."
13 Yes?
14 A. Yes.
15 Q. And the comment alongside that in the recommendation on
16 the right is:
17 Where it is unavoidable to remove SAP_ALL and
18 SAP_NEW access, it is recommended that a periodic review
19 of the activities executed by the accounts granted
20 permanent SAP_ALL and SAP_NEW access is performed to
21 gain assurance that no inappropriate or unauthorised
22 activity has been performed which may adversely impact
23 the financial statements."
24 Do you see that?
25 A. It seems to me the two columns have got out of sync here

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1 because HNG-X is not to be lined up with a SAP
2 recommendation.
3 Q. Okay. So that appears to relate to what we have on page
4 {F/869/32}.
5 A. Yes, I think the SAP relations have come down from 32.
6 Q. Let's look at page 32.
7 A. Yes.
8 Q. What they are saying alongside that is they have
9 identified those profiles, and I will show you about
10 that a bit more in a minute. And across to the right on
11 page 32 you see, under "Recommendation":
12 "Where access is deemed to be inappropriate this
13 access should be revoked immediately."
14 A. That's way up the top.
15 Q. Yes.
16 A. Does that refer to the previous page, for instance?
17 Q. It is not immediately clear. That's why I was trying to
18 be fair, Dr Worden, by showing you both together.
19 A. No, but I'm saying we've had this hang-down of that thin
20 column from one page to the next. This one on 32 might
21 be a hang-over from 31. I'm just ...
22 Q. Well, the way it seems to work is if we look at the
23 bottom of 32, 32 is dealing with POLSAP.
24 A. And POLSAP is bleeding onto the next page.
25 Q. And it is bleeding onto the top of page 33. So the

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1 bottom of 32 says:
2 "The SAP account was not locked. This does ..."
3 Then when we look at the next page:
4 "... not meet recommended practice of removing all
5 profiles from SAP and locking the account."
6 A. Yes. It seems SAP goes right the way to the bottom of
7 33, because it is talking about SAP, all roles.
8 Q. Indeed. So if we go please now to page {F/869/29}.
9 Number 3, just reading down into this section:
10 "Strengthen the change management process.
11 "Rating: high."
12 A. Yes, we are on a different topic now.
13 Q. That is a different topic, okay?
14 A. Yes.
15 Q. And on page {F/869/30} they deal with HNG-X there?
16 A. Yes.
17 Q. This is on the change management topic at the moment.
18 A. Right.
19 Q. And it says:
20 "Based on a testing sample of 15 back end changes,
21 ten counter changes and five manual changes deployed to
22 the HNGX live estate during the audit period we noted
23 the following:
24 "For 15 back end changes, ten counter changes and
25 five manual changes evidence of testing by POL was not

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1 retained.”
 2 A. Yes.
 3 Q. Now if you have got a well documented system that
 4 evidence will be retained, won't it?
 5 A. Well, this is Post Office not doing their job rather
 6 than Fujitsu not doing their job, I think.
 7 Q. Understood. But if Post Office are testing it and
 8 supposed --
 9 A. They should keep proper records and they haven't done.
 10 That's what it seems to say.
 11 Q. -- they haven't. Because the point of retaining the
 12 documentation is you can tell whether something has in
 13 fact been done or not?
 14 A. Yes.
 15 Q. It then says:
 16 "For ten counter changes, evidence of POL approval
 17 of the change to be deployed across the counter estate
 18 was not retained.”
 19 A. Yes, this is getting sign-off and retaining sign-off.
 20 Q. And:
 21 "... manual change, evidence of POL authorisation to
 22 begin development (i.e. a signed off CT document) was
 23 not retained.”
 24 Yes?
 25 A. Yes.

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1 Q. And if we go up to page {F/869/31}:
 2 "For one manual change, approval was not
 3 obtained --"
 4 A. Sorry, I've lost you -- oh, right, we're coming forward
 5 29, 30, 31. Yes.
 6 Q. Yes, 31:
 7 "For one manual change, approval was not obtained
 8 from POL prior to the change being implemented.”
 9 Do you see that?
 10 A. So all of this is saying POL need to be involved or
 11 formally to record stuff.
 12 Q. Yes. Then if we look immediately under that, we see
 13 "All in-scope applications”.
 14 A. "... are not usually involved ..."
 15 Yes.
 16 Q. "... not usually involved in testing fixes or
 17 maintenance changes to the in-Scope applications;
 18 "We were unable to identify an internal control with
 19 the third party service provider to authorise fixes and
 20 maintenance changes prior to development for the
 21 in-scope applications.”
 22 A. And the service provider is Fujitsu, is it?
 23 Q. Yes.
 24 "There is an increased risk that unauthorised and
 25 inappropriate changes are deployed if they are not

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1 adequately authorised tested and approved prior to
 2 migration to the production environment.”
 3 A. Yes.
 4 Q. So that's in relation to the change management point,
 5 yes?
 6 A. Yes.
 7 Q. Then:
 8 "We reviewed privileged access to IT functions
 9 including access to user administration functionality
 10 across all in-scope applications and their supporting
 11 infrastructure.”
 12 A. Can I pause there. "Privileged access" to my mind is
 13 associated with the DBA function rather than the SSC
 14 function.
 15 Q. Yes. So, so far we have hit the control environment
 16 generally, the changes?
 17 A. Change management, yes.
 18 Q. Then this bit you are suggesting relates to the DBA
 19 function rather than SSC?
 20 A. I generally associate "privileged user" with that lot
 21 really.
 22 MR GREEN: Understood. My Lord, is that a convenient
 23 moment?
 24 MR JUSTICE FRASER: I think it probably is.
 25 Just one quick question for my note really, because

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1 I'm pretty sure I know -- I could come up with
 2 a description myself but I thought I would ask you, how
 3 would you describe script to a layman?
 4 A. A script describes a sequence of steps to do a computer
 5 business process.
 6 MR JUSTICE FRASER: I know that. But would you describe it
 7 as a line of code, or a line of instructions, or
 8 a message?
 9 A. Scripts become pretty much code actually, but they are
 10 generally a bit more readable than Java or something.
 11 MR JUSTICE FRASER: It is the sequence of instructions to
 12 the system, isn't it?
 13 A. Yes, and they may include branches and loops etc.
 14 MR JUSTICE FRASER: All right.
 15 Thank you very much. 2 o'clock.
 16 MR GREEN: I'm most grateful.
 17 (1.00 pm)
 18 (The short adjournment)
 19 (2.00 pm)
 20 MR GREEN: Dr Worden, can we look please at {F/869/29}.
 21 A. Yes.
 22 Q. So we are back in the 2011 general audit, I'm going to
 23 say general audit rather than service audit to
 24 distinguish the two.
 25 A. Sorry?

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1 Q. The 2011 audit --
 2 A. Right, okay.
 3 Q. -- that we were looking at before.
 4 A. Sure.
 5 Q. And we are looking at {F/869/29}.
 6 A. Yes.
 7 Q. If we look at page 29, very kindly. So just following
 8 down how it works. The section here is "Strengthen the
 9 change management process", the general section.
 10 A. Yes.
 11 Q. You will see what the rating is, "Rating: High".
 12 A. Rating high, yes.
 13 Q. It says there as a general introduction:
 14 "We reviewed the processes implemented to determine
 15 that all program changes are appropriately authorised,
 16 tested and approved prior to implementation into the
 17 production environment for all applications in scope.
 18 Our examination of this process revealed the following."
 19 And the recommendation on the right-hand side -- it
 20 is slightly odd because the main paragraphs are off to
 21 the right and then the bullet points are to the left.
 22 A. Yes, and the bullets, yes, full out.
 23 Q. You can see it says:
 24 "Management should enhance the current change
 25 management process/policy to include ..."

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1 One of the things is:
 2 "The level of documentation retained ..."
 3 Yes?
 4 A. Yes.
 5 Q. Which we have seen.
 6 Then the way this section works, there are two
 7 headings under this column.
 8 A. The "Recommendation" column?
 9 Q. In the "Background" column.
 10 A. Yes, there is a POLSAP and an HNG-X, is that what you
 11 mean?
 12 Q. Yes. So you have got the general introduction. Then
 13 they deal with POLSAP. If we go on to the next page
 14 {F/869/30}.
 15 A. We have HNG-X.
 16 Q. Yes, HNG-X. And then if you go to the next page
 17 {F/869/31}, they do a section on "All in-scope
 18 applications".
 19 A. Yes.
 20 Q. And that's the bit where we saw increased risk of
 21 unauthorised and inappropriate changes etc, at the
 22 bottom?
 23 A. Right.
 24 Q. The next section we look at in the new box is:
 25 "We reviewed privileged access to IT functions

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1 including access to user administration functionality
 2 across all in-scope applications and their supporting
 3 infrastructure."
 4 A. Yes.
 5 Q. And on the right we see:
 6 We recommend that management conducts a review of
 7 privileged access to IT functions across all in-scope
 8 applications and their ..."
 9 Over the page {F/869/32}:
 10 "... supporting infrastructure to determine whether
 11 the level of privileged access granted is appropriate.
 12 Where --"
 13 A. Can we just --
 14 Q. Let me just read it out.
 15 A. Yes.
 16 Q. "Where access is deemed to be inappropriate this access
 17 should be revoked immediately."
 18 A. Yes. There seems to be a slight implication on the
 19 previous page, if we can turn back. {F/869/31}. It
 20 says:
 21 "... IT functions including access to user
 22 administration functionality ..."
 23 So as I say, my view of privileged access is people
 24 like DBAs, whereas possibly one could consider SSC to be
 25 users.

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1 Q. It looks wider here, doesn't it, yes. The point they
 2 are making there is where the access is deemed to be
 3 inappropriate, this access should be revoked
 4 immediately, if we look at page {F/869/32}.
 5 A. And that is the privileged access, is it?
 6 Q. Yes, it is the end of that paragraph. And we know from
 7 what we have seen in the PEAK that that didn't happen in
 8 relation to the APPSUP role until -- it certainly hadn't
 9 happened by 2015?
 10 A. A slight distinction. The APPSUP role certainly wasn't
 11 fixed by then, but the privileged user thing might have
 12 been separate from that.
 13 Q. But APPSUP is a role with a privileged use, isn't it?
 14 A. Again I'm not clear on that entirely. I think of
 15 privileged users as DBAs and SSC.
 16 Q. Let's look at page {F/869/33} to see whether it comes
 17 into this section or not. When we see that they have
 18 the APPSUP role as the first item --
 19 A. Right. But that is the HNG-X --
 20 Q. This is all under the same box, going down.
 21 A. All under that box, okay, fine.
 22 Q. So we can now be confident that they were thinking of
 23 that. So if we go back --
 24 A. Right, fine.
 25 Q. -- to page {F/869/32}. "Recommendation" is:

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1 "Where access is deemed to be inappropriate this
2 access should be revoked immediately."
3 And what we have seen from the APPSUP PEAK, we have
4 seen that that did not happen. In relation to APPSUP it
5 certainly had not happened by 2015 for existing users?
6 A. Yes, we have seen that delay.
7 Q. Okay. Could we please look at {F/1705/1}. The document
8 you are going to see in a minute on 1705 is
9 a Post Office account user access procedure.
10 A. Yes. Right.
11 Q. Okay?
12 A. "... Post Office ... follow to manage user access to its
13 assets ..."
14 Okay.
15 Q. "... based on its contractual requirements to protect
16 assets, systems and data."
17 A. Yes. And the date?
18 Q. I will just show.
19 A. It is pretty recent, yes.
20 Q. It is an ongoing document. You can see from the foot it
21 is 7 November 2017.
22 A. Yes, and it has a history presumably.
23 Q. Now, let's look at page {F/1705/4}, if we may, and we
24 look at the foot of that table at item 10.1.
25 A. Yes:

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1 "Addition of TESQA & APPSUP access management."
2 Yes.
3 Q. So we can see that a TESQA and APPSUP access management
4 provision has been added into this version of the
5 document.
6 A. Yes.
7 Q. If we go then, please, to page {F/1705/12}, and we see
8 item 4.2.3, "Requests for TESQA & APPSUP access elevated
9 privileges".
10 A. Yes.
11 Q. "The APPSUP role ... are temporarily applied to user
12 accounts when required for investigations into TESQA &
13 BDB queries. The roles are then removed again once work
14 is complete. Temporary access is managed via change
15 control (TfS) and that it should reference an MSC as
16 justification on the requirement for the elevated
17 access."
18 A. Yes.
19 Q. Yes?
20 A. Yes.
21 Q. So that does show, doesn't it, a provision for
22 controlling access in the way that you think would be
23 appropriate reflected at least as a policy in that
24 paragraph there?
25 A. Yes.

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1 Q. Now, we have already touched on the fact that the 2011
2 audit was a normal audit, as it were?
3 A. Yes.
4 Q. A general audit. But we do have service audits from
5 2012 onwards?
6 A. Yes, and we have that period covered now. Yes.
7 Q. Yes. You referred in your expert report to the service
8 audit specifically?
9 A. Yes.
10 Q. And we have got those. The first one is 2012 and that
11 is at {F/1041/1}.
12 A. Yes.
13 Q. While it is coming up, Dr Worden, you are aware,
14 I think, aren't you, that none of those audits
15 identifies a problem with APPSUP anywhere?
16 A. They didn't. They were a lot of clean bill of health
17 stuff.
18 Q. Did you notice that quite a lot of the wording was
19 either very similar or identical?
20 A. Absolutely, yes.
21 Q. There are identical passages, for example, for control
22 objectives in 2013 and 2014 and again in 2015 and 2016.
23 That doesn't surprise you from what you --
24 A. It doesn't surprise me. It seems to me that tests were
25 done each year but they were the same tests.

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1 Q. Precisely. Let's look at the purpose of those audits.
2 Let's look at page {F/1041/9} of that document, please.
3 Now, this is the intended use --
4 A. Yes.
5 Q. -- of the service audit. It says:
6 "This report, including the description of tests of
7 controls and results thereof in the Description of Tests
8 and Results, is intended solely for the information and
9 use of Fujitsu, POL as the user of the IT support
10 processes and controls used by and on behalf of Fujitsu
11 to support the HNG-X and POLSAP applications during some
12 or all of the period 1 April 2012 to 31 December 2012
13 and the independent auditors of POL, who have a
14 sufficient understanding to consider it, along with
15 other information including information about controls
16 implemented by user entities themselves, when assessing
17 the risks of material misstatements of user entities'
18 financial statements."
19 A. Yes.
20 Q. So their focus is on the risks of material misstatements
21 in the user entities' financial statements?
22 A. Yes.
23 Q. That's what the service audits do, isn't it?
24 A. It seems to imply that, yes.
25 Q. And:

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1 "This report is not intended to be and should not be
 2 used by anyone other than these specified parties."
 3 A. Yes.
 4 Q. So it is not for assuring outsiders about this?
 5 A. No.
 6 Q. Then if we go to page {F/1041/67}, please. That's
 7 section 7, "Description of Control Objectives, Controls,
 8 Tests and Results of Tests".
 9 We can see there at paragraph 7.2, it says:
 10 "On the pages that follow, the description of
 11 control objectives and the controls to achieve the
 12 objectives have been specified by, and are the
 13 responsibility of, Fujitsu."
 14 A. Yes.
 15 Q. So the way it works is the control objectives and the
 16 controls, which are the benchmarks for a service audit,
 17 and this is one of the distinguishing features of
 18 service audits rather than general audits, these
 19 benchmarks for these purposes are set by Fujitsu?
 20 A. Yes. Fujitsu's description of the service is the first
 21 half of the document.
 22 Q. Yes.
 23 A. And that's signed off by Fujitsu management.
 24 Q. Yes. Then we see the next paragraph:
 25 ""The service auditor's examination was limited to

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1 the IT general controls relevant to Fujitsu's operations
 2 supporting IT services provided to POL to support the
 3 POLSAP and HNG-X applications. Accordingly the service
 4 auditor expresses no opinion on the operating
 5 effectiveness of any aspects of application processing
 6 and application controls, individually or in the
 7 aggregate."
 8 A. Yes.
 9 Q. Now what do you understand to be excluded by that
 10 phrase?
 11 A. Well, in reviewing these reports I frankly hadn't seen
 12 those words before and it is new to me. And it does
 13 seem to me that this is an infrastructure report, so its
 14 focus -- I mean this says the application processing,
 15 which is probably SSC, is rather outside scope.
 16 Q. And at {D3/6/45}, if we can go to that, which is your
 17 second report, at paragraph 168. Actually if we go back
 18 to page {D3/6/44} to give you the beginning of
 19 paragraph 168:
 20 "The service audit for 2014 consists of
 21 a description by Fujitsu of the services ..."
 22 Which is what you volunteered in your last answer:
 23 " ... signed off by Fujitsu senior management, and a
 24 number of tests of that description carried out by the
 25 auditors."

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1 Yes?
 2 A. Yes.
 3 Q. And the point I was just trying to identify from this is
 4 that tests are identified by Fujitsu, which we have
 5 seen, yes?
 6 A. They are defined by Fujitsu.
 7 Q. Precisely.
 8 A. Right, yes.
 9 Q. Then:
 10 "Section 7.2.10 of this document describes Control
 11 Objective 10, which is that 'Controls provide reasonable
 12 assurance that access to system resources, including
 13 computing platforms and operating systems, is restricted
 14 to properly authorised individuals ."
 15 Yes?
 16 A. Yes.
 17 Q. And:
 18 "In all seven tests of this control objective, there
 19 were 'no deviations noted' by EY."
 20 A. In that year, no.
 21 Q. So that is the premise of the opinion you formed about
 22 this area?
 23 A. Yes.
 24 Q. But you hadn't noticed the content of the APPSUP PEAK
 25 when you reached that view?

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1 A. I can't remember the exact timing. I hadn't noticed the
 2 duration of the APPSUP PEAK, I certainly hadn't noticed
 3 that.
 4 Q. Had you noticed it at all? Because it is pretty
 5 important if you had.
 6 A. I think I had noticed the APPSUP PEAK quite early,
 7 because Mr Coyne raised the issue and I think
 8 I didn't^ notice it quite
 9 early.^chk - did he or didn't he?
 10 Q. But if Mr Coyne raised the issue and it was a very
 11 powerful role, why didn't you address it and follow that
 12 through with the APPSUP PEAK?
 13 A. It is just in my second report I had come across this
 14 piece of evidence of the service audits and I felt that
 15 was an extra piece of information which was useful to
 16 have, and I was talking about the service audits here
 17 which I think don't talk about the APPSUP role, so it
 18 didn't fit in here I do not think.
 19 Q. Well, if it contradicted what was in here then it might
 20 have fitted into that section of your report?
 21 A. Well, I wasn't clear on the timing. I wasn't aware
 22 that -- you know, the service audit was 2011, this was
 23 a later one so, you know, I didn't see a clash at that
 24 time. I didn't realise that the APPSUP PEAK went on to
 25 2015. So there was not an immediate contradiction in my

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1 mind.
 2 Q. Can I suggest to you, Dr Worden, by the time you had
 3 written your second report you had not read the APPSUP
 4 PEAK?
 5 A. I think I had, but exactly when I read what is not
 6 entirely --
 7 Q. If you had, you really should have drawn the court's
 8 attention to it, shouldn't you?
 9 A. I think Mr Coyne had.
 10 Q. Well, why didn't you then? Why didn't you deal with it?
 11 A. Perhaps I did not have anything else to say about it.
 12 I mean I was -- I had to be very selective in my
 13 supplemental report.
 14 Q. Well, we can see the -- if we go back to --
 15 A. I think I did mention it at some stage because I mention
 16 evidence that Fujitsu were taking steps to address the
 17 issues, and that was the PEAK that I think I quoted or
 18 certainly I had in mind when I said there is evidence --
 19 I think somewhere in my first report I said there's this
 20 Ernst & Young audit report and there is also evidence
 21 that at a certain time Fujitsu were taking steps to
 22 address it.
 23 Q. But the short point is you hadn't appreciated the
 24 history on to 2015?
 25 A. I hadn't appreciated the duration, no.

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1 Q. And that changes your opinion, doesn't it?
 2 A. I think it does.
 3 Q. Radically?
 4 A. I'm quite surprised at the duration of that issue. One
 5 would have thought it would have been sorted quicker.
 6 Q. There are two things, duration of the issue and power of
 7 the role, in combination even more striking?
 8 A. SSC needed powerful roles to do what they did.
 9 Q. Hold on, Dr Worden. The problem that we have identified
 10 is basically having a completely open back door, as it
 11 were, with APPSUP?
 12 A. For SSC.
 13 Q. Basically for the whole of SSC.
 14 A. The whole of SSC.
 15 Q. And you are surprised by the duration of it?
 16 A. I'm surprised it took that long to fix the problem, yes.
 17 Q. Are you surprised that it appears to be unknown to
 18 Post Office up to 2015?
 19 A. Yes, I guess I am.
 20 Q. And does the power of the APPSUP role reinforce the
 21 significance of those two last answers?
 22 A. Well, we are aware that the APPSUP role is powerful and
 23 we are aware that the SSC needed a powerful role from
 24 time to time, but the problem was it was allotted rather
 25 permanently rather than temporarily.

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1 Q. The point about it is, Dr Worden, when we contrast it
 2 with the specific balancing transaction tool, which had
 3 specific protections in it, it wrote to a journal for
 4 every time it was used, yes?
 5 A. Yes.
 6 Q. So that you could see exactly when it was used?
 7 A. Yes.
 8 Q. And what for, yes?
 9 A. Yes.
 10 Q. When we contrast it with that, what we are talking about
 11 is taking great care over which window lock you choose
 12 with a balancing transaction tool whilst leaving your
 13 back door wide open with the APPSUP role?
 14 A. I don't entirely accept the analogy. The transaction
 15 correction tool was built to address a specific need,
 16 which actual -- you know, it came up once. But
 17 nevertheless I think both experts have agreed that there
 18 are times when SSC or times when Fujitsu had to do
 19 things which are unanticipated and we can't see the
 20 limits of those.
 21 Q. And there are times when you have to open your back door
 22 of your house, but it is quite sensible to control those
 23 times and do it appropriately rather than leaving the
 24 back door open?
 25 A. Yes, well, I would not have called giving a permission

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1 to experienced and long-term users of SSC opening your
 2 back door.
 3 Q. Let's look at {F/1041/83}. This is Control Objective 10
 4 which you have referred to in that part of your expert's
 5 report I just took you to.
 6 A. Yes.
 7 Q. If we look at 10.3, it says:
 8 "We selected a sample of 12 platforms within the
 9 in-scope applications. The Group Policy on failed access
 10 attempts that manages access to all these servers was
 11 set to disable accounts after 6 consecutive failed
 12 access attempts; the POL setting should be to disable
 13 accounts after 3 failed access attempts. The other
 14 settings tested were in line with the POL requirements.
 15 "No other deviations noted."
 16 A. Yes. It seems to me that failed access attempts is
 17 failed access attempts by anybody.
 18 Q. Yes. So they are not actually -- what they are actually
 19 looking at there is they are focusing on that aspect of
 20 the access attempts, not specifically on who has which
 21 roles?
 22 A. That is right.
 23 Q. If we go to your expert report at {D3/6/12}, you can see
 24 heading 2.2 is "Mr Roll's second witness statement"?
 25 A. Yes.

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1 Q. You were aware Mr Roll wasn't a claimant?
 2 A. Yes, absolutely.
 3 Q. And you deal with Mr Roll's witness statement in this
 4 section of your report.
 5 A. Yes.
 6 Q. Page {D3/6/23} is in the same section, and if we look
 7 at -- if we go back a page {D3/6/22}, do you see at
 8 paragraph 91 you say:
 9 "In his paragraph 22, Mr Roll disagrees with my
 10 paragraph 1144 ..."
 11 A. Yes.
 12 Q. "... where I said that SSC access to the counters is
 13 strictly controlled."
 14 A. Yes.
 15 Q. If we go over the page {D3/6/23} you will see at
 16 paragraph 93 you then move on to Mr Roll addressing
 17 rebuilding of transaction data, which topic we will come
 18 to in a minute.
 19 So you are dealing with Mr Roll in this context.
 20 And at the foot of paragraph 92, you say:
 21 "In section 6 of this report, I describe evidence
 22 from service audits of Fujitsu that these controls were
 23 effective."
 24 A. Yes.
 25 Q. So this is the section where you are responding to

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1 Mr Roll who disagreed with paragraph 1144 of your first
 2 report?
 3 A. Yes. And I made those comments based on the answers
 4 I saw to the assessment by Ernst & Young under Control
 5 Objective 10.
 6 Q. And service audits started in 2012?
 7 A. Ah yes, good point. Yes.
 8 Q. And Mr Roll left many years before that?
 9 A. I'm sorry about that, yes. There is a real timing
 10 problem.
 11 Q. So Mr Roll is probably owed a bit of an apology on that
 12 one, is that fair?
 13 A. Mm?
 14 Q. Mr Roll is probably owed a bit of an apology on that
 15 one?
 16 A. I certainly didn't spot that timing issue, I'm very
 17 sorry, yes.
 18 Q. It doesn't appear either, not only were there no service
 19 audits when Mr Roll was at Fujitsu back in Legacy days,
 20 but also it strongly appears that the service audits
 21 themselves do not deal with the issues of the APPSUP
 22 role itself?
 23 A. Yes. But the service audits do say access to system
 24 resources regardless of who it is.
 25 Q. Now, let's go back to a point from slightly earlier, if

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1 we may.
 2 When we were looking at the keystrokes in the
 3 PEAK --
 4 A. Yes.
 5 Q. -- you suggested that those might be visible in an event
 6 log.
 7 A. I think so, yes.
 8 Q. Do you mean visible to the SPM or visible to
 9 Post Office?
 10 A. Visible to this department TED or whatever they are
 11 called. There is a Fujitsu application support strategy
 12 document that defines the four levels and in front
 13 level, first level, there is HSD, Horizon service desk,
 14 and there are various other departments including TED,
 15 and I can't remember the acronym, exactly what that
 16 means, but they were looking at logs.
 17 Q. Just to clarify, let's look at {F/1468/1}. So that is
 18 the event log that the SPM -- this is Mrs Burke, as it
 19 happens, but this is the event log that the SPM can
 20 print out.
 21 A. I am not talking about that event log.
 22 Q. They are not going to see it.
 23 A. No, I'm not talking about this kind of event log, no.
 24 Q. Are you talking about an ARQ event log?
 25 A. Absolutely not, no.

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1 Q. So there is a third type?
 2 A. There is a third kind, yes. There is lots of logging of
 3 the Horizon system that goes on and there are these
 4 people that spend their time looking at these logs.
 5 There are event logs and transaction logs, for instance,
 6 they look at, and I have probably not got all the kinds
 7 of logs they look at.
 8 Q. But one of the kind of logs they have is a log that has
 9 the keystrokes in it?
 10 A. I believe one of the event logs goes down to that level,
 11 yes.
 12 Q. And you think it is likely to be the source of the
 13 keystrokes we saw there?
 14 A. Yes. Obviously that source was quoted in a PEAK so it
 15 is not a thing that somebody had gone out to a branch to
 16 pick up.
 17 Q. No, of course.
 18 MR JUSTICE FRASER: And it is not an ARQ.
 19 A. It is not ARQ data at all. It is stuff you can look at
 20 on the day.
 21 MR GREEN: On the day?
 22 A. Yes.
 23 Q. So if an individual subpostmaster was very anxious about
 24 how something had happened, that would be very helpful
 25 information, wouldn't it?

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1 A. Obviously sometimes it is, and I think it was used
 2 a great deal because TED was a whole department that was
 3 scanning these things. They were scanning for things
 4 that the subpostmaster didn't see and they were also
 5 presumably called up when somebody said, "Subpostmaster
 6 says this. Could you look at the logs".
 7 Q. I'm not asking you to comment on the evidence of other
 8 witnesses but I'm going to ask you if you can think of
 9 an explanation, because what was said in Ms Mather's
 10 statement was that you could -- Credence recorded
 11 keystrokes, and then we were told that that was wrong,
 12 and indeed Ms Van Den Bogard was re-examined on the very
 13 point.
 14 A. Yes.
 15 Q. That we didn't have access to keystrokes.
 16 A. Yes, but --
 17 Q. So do you have any feel for who ought to know about the
 18 existence of those documents, the keystrokes?
 19 A. Well, the question of keystrokes on Credence is Credence
 20 is a POL system. The question of keystrokes on a PEAK
 21 is Fujitsu having access to keystrokes information. So
 22 I suspect, I strongly think that is from the event logs
 23 that Fujitsu were responsible for looking --
 24 Q. Do you know the extent to which that data which Fujitsu
 25 have in the Horizon system, or from it, is available

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1 through Credence to Post Office?
 2 A. Obviously certain of the same things go in the event
 3 logs and they go in different forms in Credence.
 4 Q. Yes.
 5 A. I don't know the extent of --
 6 Q. Those event logs do go into Credence, but you don't
 7 know --
 8 A. No, not the event logs.
 9 Q. Sorry, the data in the event logs.
 10 A. The data in different forms goes into Credence, yes.
 11 Q. And you don't know which data from those event logs goes
 12 into Credence and which doesn't?
 13 A. I don't. But as I said before, my expectation was that
 14 Credence doesn't go down to keystroke level.
 15 MR JUSTICE FRASER: And the expression you used, and it
 16 doesn't matter if you can't remember what it stands for,
 17 is TED.
 18 A. Yes, and you find this in the application support
 19 strategy document.
 20 MR JUSTICE FRASER: All right.
 21 A. Which defines the four levels of support.
 22 MR JUSTICE FRASER: Thank you very much. And that's the
 23 sort of data that you were shown earlier, you think it
 24 will come from TED.
 25 A. I think it would have come from there, yes.

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1 MR JUSTICE FRASER: Mr Green.
 2 MR GREEN: I'm most grateful.
 3 Can we go to remote access, if we may, Dr Worden.
 4 Can we look at the transcript of {Day18/67:1}, for
 5 a minute. I think the position you reached with
 6 Mr Coyne in the joint statement was that more or less
 7 Fujitsu or Post Office could do anything.
 8 A. Well, we can look at that. That is 10.12. I was asked
 9 to go and look it up and we didn't come back to it. In
 10 joint statement 4, 10.12.
 11 Q. We will come to that. It is literally my next point.
 12 But just have a look at {Day18/67:6} and line 7.
 13 A. 57 or 67?
 14 Q. It is Day 18, page 67. I think it is lines 5 and 6
 15 actually. It says:
 16 "Answer: And we agreed in the joint statement that
 17 more or less Fujitsu or Post Office could do anything."
 18 A. Yes. We can see precisely what we agreed in a minute,
 19 obviously.
 20 Q. In relation to the --
 21 A. We agreed the experts couldn't demonstrate that they
 22 couldn't do everything. I mean, that's sloppy wording
 23 by me there. I think the joint expert statement says it
 24 better.
 25 Q. Okay. You were asked -- I think you were hoping to see

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1 where in the joint report you reflected the position in
 2 relation to Mr Roll and Mr Parker in respect of access
 3 at the counter, which they had in fact agreed to in
 4 their second witness statements?
 5 A. Sorry?
 6 Q. Did you have a look at that? Do you remember the
 7 homework?
 8 A. I thought the homework was to find that statement which
 9 is at 10.12 in the joint statement.
 10 Q. {D1/5/8}, I'm grateful to Mr Miletic. At 10.12.
 11 A. Yes.
 12 Q. "Certain facilities and procedures used by Fujitsu to
 13 repair the more common issues which arose in Horizon
 14 were standardised and evidence of them persists.
 15 However, to repair less common issues which arose from
 16 time to time, standard tools and procedures might not
 17 have been sufficient, and evidence might not persist of
 18 what was done at the time. Even when evidence does
 19 persist, it may be extremely difficult for the experts
 20 to interpret it today, because of the scale and
 21 complexity of Horizon."
 22 That is the point you mentioned about difficulty of
 23 plumbing the depths of the system.
 24 A. That is right.
 25 Q. And the fact it is a bit of a swamp.

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1 A. There are layers and layers and layers which --
 2 Q. Makes it very difficult?
 3 A. Yes.
 4 Q. "Therefore, it is usually difficult for experts to make
 5 categorical negative statements of the form: X or Y
 6 never happened."
 7 A. Yes.
 8 Q. Can we probe that in a tiny bit more detail, if we may.
 9 If we look first at {D3/1/248}, please. We have your
 10 table?
 11 A. Yes.
 12 Q. Just taking that in stages, if we may. The top half
 13 above the horizontal light blue bar is about Post Office
 14 access, isn't it?
 15 A. Yes.
 16 Q. The bottom half is your opinion about Fujitsu access?
 17 A. Yes.
 18 Q. So the first question is whether Fujitsu had the ability
 19 to inject or insert?
 20 A. Yes.
 21 Q. And it is yes, and you explain why.
 22 Then "Fixes", second column, is yes. And "Rebuilds"
 23 is yes.
 24 A. Yes.
 25 Q. And then (b), you say:

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1 "Without the knowledge of the subpostmaster."
 2 You say:
 3 "No. Any changes performed by privileged users
 4 become visible at the branch."
 5 Otherwise on that you say yes and yes.
 6 A. Yes.
 7 Q. Then row (c), "Without the consent of the
 8 subpostmaster", and you say yes?
 9 A. And we have the typo here.
 10 Q. Then across that row, yes and yes.
 11 So can we focus on (b)(i)?
 12 A. Yes. I think that is effectively overridden by the
 13 expert joint statement. In other words, that
 14 categorical "never" statement shouldn't have been there.
 15 Q. Okay. So you can't exclude that. That's where we are
 16 now because of the joint statement?
 17 A. Yes.
 18 Q. And it certainly appears that that may well have been
 19 possible?
 20 A. Well, I think when the experts agreed in the joint
 21 statement that the experts cannot determine whether or
 22 not Fujitsu could do X, and X could have been some form
 23 of remote access. But equally it follows logically that
 24 X could mean doing that form of remote access without
 25 the knowledge of the postmaster. That all follows

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1 logically.
 2 Q. It does.
 3 MR JUSTICE FRASER: So logically is that now a yes?
 4 A. I think that's now a yes.
 5 MR JUSTICE FRASER: All right, thank you very much.
 6 A. Or a don't know.
 7 MR GREEN: There's an issue about how something might become
 8 visible to a subpostmaster.
 9 MR JUSTICE FRASER: Just before you move on, I don't want to
 10 put words in your mouth. So that should be a don't know
 11 or a yes, do you think?
 12 A. Well, I think the don't know follows from the joint
 13 statement, yes.
 14 MR JUSTICE FRASER: So don't know.
 15 A. Yes.
 16 MR JUSTICE FRASER: All right. Mr Green.
 17 MR GREEN: And that the reason for the qualification in that
 18 box, if I can put it in those terms, in your original
 19 report, is the possibility that it would be done in
 20 a way that would become visible at the branch?
 21 A. Yes, and there is some confusion in that paragraph (b)
 22 because it's "changes performed by Privileged Users",
 23 and my view since then is that privileged users aren't
 24 DBAs and therefore they are not the whole story. It is
 25 SSC we are really interested in, I think.

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1 Q. Let's just trace it through, if we may. At the time you
 2 wrote your report you agreed I think that privileged
 3 users could edit and delete in Horizon Online?
 4 A. I think so, yes.
 5 Q. I think that's at paragraph 1122. That was needed for
 6 system maintenance purposes but the same rationale would
 7 apply to Legacy?
 8 A. Yes.
 9 Q. And I think the roles appear to have gone -- I have
 10 a reference I can show you if you want -- but privileged
 11 user roles appear to have gone through from Legacy into
 12 Horizon Online?
 13 A. You would expect DBA people to be around the whole time,
 14 yes.
 15 Q. To carry on?
 16 A. Yes. For instance the Legacy databases in the back end
 17 were preserved, quite a lot of them.
 18 Q. Can we look please at {D3/1/246}, paragraph 1123. So
 19 this is where you say:
 20 "Any change to a transaction performed by a
 21 Privileged User would be visible to branch staff. The
 22 amended transaction would appear in reports and logs
 23 that can be viewed in branch, although it would not be
 24 flagged as a change by a Privileged User."
 25 A. Yes.

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1 Q. You say:
 2 "Theoretically this is a problem, but Privileged
 3 Users cannot change the audit record and so the changed
 4 record in the BRDB would no longer match an audit
 5 extract. This means that a subpostmaster could always
 6 find out about changes made by SSC, via a request to the
 7 helpdesk."
 8 A. Yes.
 9 Q. That assumes, doesn't it, there is a comparison between
 10 the audit store or ARQ data and some data that the
 11 subpostmaster has?
 12 A. There could be. But my view on that paragraph would be
 13 somewhat different now, I think. As we have said, the
 14 audit data was generally used as a backstop and the
 15 whole issue of what is visible to the subpostmaster ...
 16 Q. Is pretty difficult, isn't it?
 17 A. It is difficult, yes.
 18 Q. But also the subpostmaster would not have been
 19 expecting, even if hypothetically they had been provided
 20 with ARQ data and tried to interpret it themselves and
 21 compare it with information they had --
 22 A. I do not think subpostmasters should be provided with
 23 ARQ. I think that's very technical and not the sort of
 24 thing that subpostmasters want to dig around.
 25 Q. Even if Post Office itself had requested the ARQ data to

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1 look at and try and consider --
 2 A. Yes.
 3 Q. -- and to show and explain to a subpostmaster so they
 4 can try and see what happens as well?
 5 A. Yes.
 6 Q. Subpostmaster would need to have in mind the possibility
 7 of remote access in order to be looking for that as
 8 a possible explanation, wouldn't they?
 9 A. I agree, yes.
 10 Q. If we have a look, please, at {F/1422/1}. This is
 11 Post Office's response to the Panorama program which the
 12 BBC showed about this issue, and you can see the bold
 13 points sort of summarising the thrust of what was said?
 14 A. Yes.
 15 Q. "The Post Office does not prosecute people for making
 16 innocent mistakes and never has.
 17 "There is no evidence that faults with the computer
 18 system caused money to go missing at these Post Office
 19 branches.
 20 "There is evidence that user actions, including
 21 dishonest conduct, were responsible for missing money."
 22 So that is the thrust of the response. But if we go
 23 over the page {F/1422/2}, and if you see halfway down
 24 there is a section which is "The Horizon Computer
 25 System" section?

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1 A. Yes.
 2 Q. If you look at the bottom of that section, it says:
 3 "There is also no evidence of transactions recorded
 4 by branches being altered through 'remote access' to the
 5 system. Transactions as they are recorded by branches
 6 cannot be edited and the Panorama programme did not show
 7 anything that contradicts this."
 8 A. Yes.
 9 Q. Even though Mr Roll was actually interviewed on it.
 10 A. I didn't see the programme and indeed I haven't actually
 11 read this document.
 12 Q. But in the face of the fact that that's what Post Office
 13 were saying in response to a reputable bit of
 14 investigative journalism by the BBC, there is no
 15 prospect of a subpostmaster thinking if they were
 16 hypothetically one day to be in the position of
 17 comparing data: oh, I must just see if that was actually
 18 one of those remote access changes, is there?
 19 A. So you are saying that this document from Post Office
 20 came to the attention of a subpostmaster -- is that
 21 what's being put to me?
 22 Q. Dr Worden, 2015, Post Office are denying --
 23 A. Is that the document of this document?
 24 Q. Yes.
 25 A. Right.

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1 Q. Post Office in 2015 are, in response to a BBC
 2 documentary by Panorama, which Mr Roll is on saying
 3 there could have been remote access, they are saying:
 4 "There is also no evidence of transactions recorded
 5 by branches being altered through 'remote access' to the
 6 system. Transactions as they are recorded by branches
 7 cannot be edited and the Panorama programme did not show
 8 anything that contradicts this."
 9 So if that is the Post Office's quite forceful
 10 public position, it is completely unrealistic to expect
 11 that even if a postmaster did get --
 12 A. My reports have not been concerned with Post Office's
 13 public position.
 14 Q. But it is very unlikely that a subpostmaster or
 15 subpostmistress in a difficult situation, even if they
 16 were to get the necessary data provided to them, they
 17 would not expect to look for that, would they?
 18 A. As I say, this document and the considerations of
 19 Post Office's public position have not entered into my
 20 opinions.
 21 MR JUSTICE FRASER: Mr Green, I think you are probably
 22 crossing the line into submissions or arguing the case.
 23 The only question really you could properly put I think
 24 further to Dr Worden is: that statement says:
 25 "Transactions as recorded by branches cannot be

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1 edited ..."

2 On the basis of your expert knowledge as at today,
3 does that statement match your knowledge of the system
4 or not?

5 A. Transactions as recorded by branches go into the audit
6 store and they cannot be edited.

7 MR JUSTICE FRASER: In the audit store.

8 A. Well, they cannot be edited. And if they are edited
9 then -- I mean, the DBA can do anything, and we can't
10 say anything can't be done. So something could go into
11 BRDB, into the audit store, and then the BRDB version
12 could be, in principle -- on the basis of this expert
13 joint statement something like that could happen, but
14 then you see a discrepancy between the BRDB and the
15 audit database.

16 MR JUSTICE FRASER: Yes. But it is the audit database
17 information -- my understanding is, and tell me if I'm
18 wrong, it's the audit database information that can't be
19 edited.

20 A. Yes.

21 MR JUSTICE FRASER: There are different ways that the
22 transactions entered in the branch can be changed on the
23 BRDB, is that right?

24 A. My view is that on the BRDB there has to be somebody who
25 can do anything you like, because if Post Office went to

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1 Fujitsu and said "We have got this problem with BRDB",
2 and Fujitsu said "We can't do that, we have thrown the
3 keys away", that would be wrong. So the experts can't
4 say anything could never be done.

5 But nevertheless the audit database is -- it is
6 a bit of a misnomer, it is not a database, because audit
7 records are sealed and not modifiable.

8 MR JUSTICE FRASER: I understand.

9 Mr Green, I don't see any help to me in you arguing
10 those sorts of submissions with an expert in IT.

11 MR GREEN: I understand, my Lord.

12 In relation to the uses of APPSUP itself, the APPSUP
13 role, just to clarify, the privileged user logs didn't
14 exist pre-2009, that is right, isn't it?

15 A. I'm not aware of any. Some record probably existed of
16 privileged user activity but it has not been disclosed
17 as far as I know.

18 Q. There is no disclosure of any privileged user logs
19 pre-2009?

20 A. Well, "the logs". But I'm saying I don't know that some
21 other form of record didn't exist. Generally I would
22 expect, a DBA doing special things, there to be some
23 record of his doing it.

24 Q. But the APPSUP role is a role that everyone at SSC
25 enjoyed?

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1 A. But that's not DBAs.

2 Q. No, I'm asking you about use of APPSUP by SSC.

3 A. Yes. Fine.

4 Q. And the privileged user logs who would capture that
5 don't exist pre-2009, as far as we know?

6 A. Privileged user logs, do they capture APPSUP use? I'm
7 not sure. Privileged user logs are very difficult to
8 interpret. They are much worse than MSCs.

9 Q. I was coming to that point. But what had been called
10 the Privileged User Logs did not exist prior to 2009.
11 That is not meant to be controversial --

12 A. No, I do not think it is controversial.

13 Q. And they only recorded log in and log off until 2015?

14 A. From the ones I looked at the distinction wasn't so
15 clear, because what you would get in a day's privileged
16 user log was thousands and thousands of accesses, most
17 of which were system accesses, and scattered amongst
18 them you would see one or two accesses obviously from
19 a real person and those accesses would record typically
20 the name of one database table and I found that very
21 difficult to interpret.

22 Q. Well, hitherto it has been thought to be common ground
23 that the only recorded log on/log off until July 2015
24 and thereafter were fuller, and you and Mr Coyne were
25 looking at the ones after that to see what was in them.

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1 Do you know or are you just guessing?

2 A. I can't recall precisely but I thought I had seen these
3 single database table names in all sorts of years, but I
4 frankly haven't gone back to that because I got so
5 little out of the privileged user access logs.

6 Q. If we look at {E2/1/18}, it is Mr Godeseth's second
7 witness statement which you referred to in your expert's
8 report. It is page 18 of that witness statement. If we
9 look at 59.6 when he is explaining how privileged users
10 are recorded, if we start at 59.4 --

11 A. Yes.

12 Q. He says:

13 "Since July 2015 all access and actions carried out
14 by privileged users are recorded on an Oracle audit
15 table. The audit table records information including:

16 "(a) user ID;

17 "(b) action; and

18 "(c) date and time of the action."

19 Yes?

20 A. Yes. That's not quite consistent with what I have seen
21 in privileged user access logs.

22 Q. I'm just going to check whether your memory is right
23 because it is possible to make a mistake if you haven't
24 got them all in front of you.

25 Look at 59.6:

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1 "Prior to July 2015 the log on and log off
 2 activities by Privileged Users were audited. The process
 3 was for a Managed Service Change (MSC) 14 document to be
 4 signed off and for the log on and log off records to be
 5 attached to the MSC."
 6 59.7:
 7 "The reason for the change in July 2015 was that the
 8 BRDB was upgraded to a newer version of Oracle and we
 9 took the opportunity to make the change then."
 10 A. Yes.
 11 Q. That strongly suggests that the privileged user logs
 12 weren't available -- privileged user logs prior to 2015
 13 did not have anything more than log on and log off on
 14 them?
 15 A. That seems to suggest that, yes. But as I say, I really
 16 didn't go much into these privileged user access logs
 17 for two reasons. One is I thought they were to do with
 18 DBA activities rather than SSC and application
 19 activities, and the other is when I looked at them
 20 I would get very little out of them.
 21 Q. If we look at {D1/5/10}, please. Item 11.3 is:
 22 "The logging of Privileged User Access (in PUA logs)
 23 commenced in October 2009."
 24 A. Yes.
 25 Q. And you agreed that with Mr Coyne?

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1 A. Yes.
 2 Q. You also agreed that:
 3 "Between 2009 and 2015 these logs only displayed the
 4 fact that a privileged user had logged on or off but not
 5 what actions they had taken whilst the privileged user
 6 was logged in."
 7 You agreed that?
 8 A. Yes.
 9 Q. And then:
 10 "The use of the transaction correction tool cannot
 11 be seen in these logs."
 12 A. Yes. What I'm saying now is -- I agreed with that. My
 13 memory of what I saw on the pre-2015 ones is unclear.
 14 Q. You and Mr Coyne have agreed also that the privileged
 15 user logs are hard to understand and not a useful source
 16 of information, haven't you?
 17 A. Is that somewhere?
 18 Q. Let's have a look, please, at --
 19 A. It is 11.5.
 20 Q. 10.1 on page {D1/5/4}. Sorry you have agreed; you have
 21 said --
 22 MR JUSTICE FRASER: Where are we going?
 23 MR GREEN: The foot of 10.1 on {D1/5/4}. You say,
 24 penultimate bullet point, or second bullet point down
 25 there:

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1 "The privileged User Access logs are not a useful
 2 source of evidence about remote access, including
 3 balancing transactions."
 4 A. Yes.
 5 Q. You say the same about the managed service change logs?
 6 A. Yes. I'm less clear about that now having looked at
 7 those more recently.
 8 Q. In fact when we saw the problem in the 2011
 9 Ernst & Young letter in relation to the consents to
 10 change not being recorded, do you remember the 10 and
 11 the 5?
 12 A. The 10 and the 5?
 13 Q. Yes, Ernst & Young in 2011 did 10 -- looked for 10
 14 approvals and found they --
 15 A. Right, okay.
 16 Q. -- hadn't been retained, and five others and those
 17 hadn't been retained either?
 18 A. Yes.
 19 Q. The change approvals are supposed to be in the OCPs and
 20 OCRs, aren't they?
 21 A. I'm slightly unclear how the OCPs, OCRs and MSCs
 22 overlapped in time, but generally you're right.
 23 Q. They ought to be somewhere in those records if the
 24 system is being documented properly?
 25 A. I think that is right, yes.

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1 Q. Now no one identified the APPSUP role to Mr Coyne, he
 2 had to find it for himself. And if we look at his
 3 second report at {D3/4.1/85}, it is paragraph 3.279,
 4 page 85. It is 3.279.
 5 A. Right. So this is that PEAK we have been to.
 6 Q. Yes. He set out quite a lot of text there, yes?
 7 A. Yes.
 8 Q. And over the page {D2/4.1/86} at 3.281:
 9 "... I can see that the APPSUP user group was used
 10 2,175 times between 2009 and 2018 with user names
 11 ACHAM01, JCHAR01, CTURR01, GMAXW01 and others."
 12 A. Yes.
 13 Q. And we know, don't we, that those appear to refer to
 14 Anne Chambers and Mr Maxwell and so forth from SSC?
 15 A. Yes, we do. And this is approximate -- I haven't done
 16 a big survey of PUA logs, but the numbers are consistent
 17 actually that one day's PUA log is a huge thing, it
 18 usually has one or two real people in it, and I think
 19 this 2,000 times in ten years is about one person per
 20 working day, so it all fits.
 21 Q. It all fits and you are content with that.
 22 In response Mr Godeseth in his third statement at
 23 {E2/14/6}, paragraph 19, you have at the top of the
 24 page, he confirms there what the APPSUP role allows. He
 25 says:

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1 "Paragraph 3.277 describes the APPSUP role and
2 refers to a Peak in which there is a general discussion
3 on the level of permissions required by SSC staff to
4 fulfil their role. APPSUP is the more technically
5 accurate name for a role with privileged User access to
6 the BRDB and other parts of the system. Although the
7 APPSUP role could theoretically be used to inject, edit
8 or delete transaction data this Peak does not provide
9 any evidence of this actually happening. It is
10 discussing the administration of the APPSUP role rather
11 than its use in a particular situation to change live
12 transaction data."

13 Now, two points. A perfectly fair description of
14 what the PEAK is doing?

15 A. Yes.

16 Q. Which we have looked at, and a perfectly clear
17 description of what the APPSUP role does?

18 A. Yes. I mean I haven't deeply investigated the APPSUP
19 role, so --

20 Q. And if we look at Mr Parker in his third statement at
21 {E2/13/3}, at paragraph 13 he is commenting on its use.

22 A. Yes.

23 Q. He says:

24 "It is not a distinct or new type of remote access
25 ..."

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1 And refers across to Mr Godeseth.

2 A. Yes.

3 Q. And he says at the bottom:

4 "Those logs suggest that the APPSUP role has been
5 used 2,175 times to make emergency ..."

6 And if we go over the page {E2/13/4}.

7 A. Sorry, that's what Mr Coyne said?

8 Q. No, this is what Mr Parker is saying in response.

9 A. I didn't find the 2,000 number before we flipped.

10 Q. Sorry, let's go back. {E2/13/3}

11 A. Ah, "he says", yes, okay. So Parker referring to Coyne.
12 Yes.

13 Q. He says it has been used 2,175 times to make emergency
14 amendments to the BRDB.

15 {E2/13/4}

16 "This appears to assume that APPSUP is only used for
17 emergency amendments - an assumption which appears to be
18 drawn from his reading of Peak PC0208119. However, this
19 is an administrative Peak which concerns one topic
20 (changing the generic role for SSC database users, which
21 affected the running of development delivered scripts).
22 It does not refer to a particular support action on a
23 live branch."

24 Now, it is an administrative PEAK that he has
25 referred to, but neither Mr Godeseth nor Mr Parker had

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1 consulted the transaction logs, we know that -- the
2 privileged user logs?

3 A. Had they not?

4 Q. No. And you tried to and agreed with Mr Coyne that they
5 are not very helpful. That's where we've ended up.

6 A. Yes, but I mean I would understand Mr Parker knows what
7 goes on in the support because he is important in SSC
8 and has a feel for what SSC does.

9 Q. So even in a situation where there is litigation and
10 multiple witness statements have been served, Mr Parker
11 and Mr Godeseth don't look at them, you look and see
12 they are not useful, and that overall situation is
13 because they don't really show clearly an answer to the
14 question of what this was used for?

15 A. Yes, and I was always confused by the fact that most of
16 these privileged user logs were about some system
17 access.

18 Q. I understand.

19 A. System to a system, and I couldn't get to the bottom of
20 what that -- in the time I devoted to it, I couldn't get
21 to the bottom of that.

22 Q. And if there's not a clear documentary record of what
23 the use is, it is very difficult for there to be proper
24 scrutiny or audit of that?

25 A. That's assuming that PUA logs are the only documentary

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1 record.

2 Q. Well, we haven't seen any other, have we?

3 A. We haven't.

4 Q. So that was invented in the hoof?

5 A. I'm not inventing on the hoof, I was simply stating
6 an uncertainty I have. I'm not trying to --

7 Q. There might be all sorts of things but let's focus on
8 the evidence we have got.

9 A. Generally Horizon is big and complicated and there are
10 all sorts of things.

11 Q. If the documentation is the privileged user logs we have
12 got, there isn't really any proper basis, even when they
13 do come after July 2015, properly to scrutinise what the
14 tool is being used for or to audit its use?

15 A. Absolutely. From the disclosed evidence that is
16 correct.

17 Q. Now let's move to DBAs. You have touched on them
18 already. They can edit, delete and add as you have
19 already said. That's obviously both in Legacy and
20 Horizon Online for reasons you have already given.

21 A. Yes.

22 Q. If we go to {Day8/44 12}, if we look at page 44, line 12
23 it says:

24 "Question: You would agree that those people have
25 the role which allows them privileges to update, delete,

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1 or insert into branch database tables whether they are
 2 using the correction tool or not?"
 3 A. Yes.
 4 Q. And he says, this is the DBA role:
 5 "Answer: Those people could log on to the database
 6 and do an awful lot of damage."
 7 A. Yes.
 8 Q. And you agree with that?
 9 A. Yes.
 10 Q. If we look at re-examination on Day 8 --
 11 MR JUSTICE FRASER: Is this of Mr Godeseth?
 12 MR GREEN: Of Mr Godeseth {Day8/112:1}
 13 A. I should say in my experience DBAs can do an awful lot
 14 of damage.
 15 Q. Yes. Page 112 at line 14:
 16 "Question: And 'UNIX user', who would the UNIX user
 17 be?
 18 "Answer: Oh, sorry, UNIX user would be one of the
 19 guys in Ireland."
 20 A. Yes.
 21 Q. So the DBA's role is the guys in Ireland as referred to
 22 by Mr Godeseth?
 23 A. Yes. This implies to me that some of the DBAs are in
 24 Ireland, I don't know if they all are.
 25 Q. You don't know where they are really?

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1 A. No.
 2 Q. And you haven't met them?
 3 A. Certainly not.
 4 Q. You don't know how trustworthy they are?
 5 A. I just do not know them as individuals. I presume that
 6 to get to that job you have to be pretty good.
 7 Q. And one of the guys in Ireland, if you look down, you
 8 can see that on the top of page 113:
 9 "Question: Who are the 'guys in Ireland' exactly?
 10 Could you just clarify -- I appreciate that this may not
 11 be your daily fare but ~...
 12 "Answer: They are the people who support the
 13 hardware, so UNIX is an operating system so they work at
 14 a pretty low level on the systems.
 15 "Question: When you say 'low level', I mean what do
 16 you mean by that? Do you mean they have powerful user
 17 rights, or they have weak user rights or ..?
 18 "Answer: They have pretty powerful user rights, but
 19 they are very -- very much driven by process as to how
 20 they use them."
 21 A. Yes, I should say here that they are the people who
 22 support the hardware. That feels to me like a different
 23 level from the DBAs.
 24 Q. So that might be another -- so the UNIX people might be
 25 on another level from the DBAs?

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1 A. Yes.
 2 Q. In a sense we may have three layers?
 3 A. Yes, I am sure we do.
 4 Q. Now, just before we break for the stenographer who has
 5 asked to go a little later, can we just deal briefly
 6 with OCPs and MSCs. You heard Mr Coyne say he had
 7 reviewed the OCPs and identified that 7% were created
 8 retrospectively, did that come as a surprise to you?
 9 A. It was, and I have since investigated myself.
 10 Q. Was that about right?
 11 A. The investigation I have made, I did a search of the
 12 OCPs for all those that mentioned "retrospective" and
 13 there are 1,600 of them, that's about 7%. I also did
 14 a search for all those that mentioned "retrospective"
 15 and "FAD" and you come to about 40. So the OCPs
 16 referring -- of these 7% of OCPs, I drew the conclusion
 17 that the great majority were back end, and I checked
 18 a few of them they are back end changes, and only the 40
 19 referred to changes made at the branch.
 20 Q. And you understood that OCPs would be raised by one
 21 person and I think monitored by a different person, so
 22 you have four eyes?
 23 A. There is a lot of this separation of duties, four eyes
 24 thing, yes.
 25 Q. Let's look quickly at {F/292.4/1}. This is an OCP on

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1 1st September 2005.
 2 A. Yes.
 3 Q. You can see, although we do see different names under
 4 "Other details" on other OCPs, on this one we can see
 5 Martin Harvey and Martin Harvey at the bottom.
 6 A. Raised by, monitored by.
 7 Q. So he is monitoring himself it looks like?
 8 A. It appears to be.
 9 Q. Let's just look and see what this actually is. It is a
 10 "Bulk insert to tps_pol_fs_summaries_incomp table".
 11 A. Yes.
 12 Q. It says:
 13 "Products 2542 & 2541 had missing mappings which has
 14 caused several hundred branch details to not balance to
 15 zero."
 16 A. Yes.
 17 Q. "The ref data has now been corrected and the balancing
 18 transactions have been extracted and now need to be
 19 loaded into to tps_pol_fs_summaries_incomp so the BLE
 20 file can be generated and sent to POLFS."
 21 A. Yes.
 22 Q. He is correcting a balancing problem because of missing
 23 mappings which is affecting several hundred branches?
 24 A. Yes. The table named "tps_pol_fs summaries" implies to
 25 me it is to do with TPS transaction processing system

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1 which is pushing stuff over to Post Office , not directly
 2 affecting branch accounts.
 3 Q. Well, on any view, it says there that it is caused
 4 several hundred branch details to not --
 5 A. Yes, but the branch details are not in the BRD. Branch
 6 details are held all over the place, including back end
 7 and POL systems. By the reference to "tps",
 8 I understood this to mean branch details in the back end
 9 or in POL.
 10 Q. But on any view, it is hundreds of branches and he
 11 appears to be monitoring himself?
 12 A. Yes, I --
 13 MR GREEN: My Lord, is that a convenient moment?
 14 MR JUSTICE FRASER: Let's have the answer.
 15 MR GREEN: Sorry, I thought he said yes.
 16 MR JUSTICE FRASER: I thought you were about to add
 17 something.
 18 A. Nothing real, just it does appear to say he is
 19 monitoring himself.
 20 MR GREEN: Is that a convenient moment?
 21 MR JUSTICE FRASER: Yes, we will have the 10-minute break.
 22 Come back in at 3.20 pm.
 23 (3.10 pm)
 24 (A short break)
 25 (3.20 pm)

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1 MR GREEN: Dr Worden, could we look please at {F/485.2/1},
 2 that's an OCP for 2nd March 2009.
 3 A. Yes.
 4 Q. It is to insert corrective transactions at a branch,
 5 yes?
 6 A. Yes.
 7 Q. That's the title . Just look over the page, please, at
 8 {F/485.2/2}. This is under "Other details". And
 9 Dr Worden, I acknowledge that there are lots where the
 10 people are different , but you can see there "Raised by:
 11 Anne Chambers" and "Monitored by: Anne Chambers"?
 12 A. Yes.
 13 Q. If we look at {F/540.01/1}.
 14 A. "Purge Migration Prep Data". That is familiar .
 15 Q. And if we look at page {F/540.01/2} of that, we see it
 16 is "Raised by: Anne Chambers" and "Monitored by:
 17 Anne Chambers"?
 18 A. Yes.
 19 Q. Last one, {F/616.1/1}. This is an OCP for
 20 14th April 2010. This is the branch "unable to
 21 rollover". If we kindly turn to page {F/616.1/3} of
 22 that OCP, do you see --
 23 A. Here we go again, yes. Right, same person.
 24 Q. -- "Raised by: Mr Ramachandran" and "Monitored by:
 25 Mr Ramachandran"?

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1 A. Yes.
 2 Q. And so it is certainly not recording the four eyes that
 3 are involved in that respect in the way that you'd
 4 expect it in all cases, is it?
 5 A. No, it isn't.
 6 Q. If we look at Mr Godeseth's statement in relation to the
 7 balancing transaction tool {E2/1/16}. Do you see there
 8 at paragraph 58.5 he says:
 9 "As far as I am aware there has only been one usage
 10 of the tool."
 11 A. Yes.
 12 Q. Now, if we look at {F/425/1}, we have got the low level
 13 design --
 14 A. Yes.
 15 Q. -- in draft. Do you see "Document status: draft",
 16 halfway down?
 17 A. Yes, absolutely.
 18 Q. Can we just pause there. This is a more general
 19 question about IT system documentation generally. What
 20 is in your experience the significance of developing
 21 drafts and then having identified approved versions of
 22 the documents?
 23 A. Well, it is general good practice to do that.
 24 Q. Why does it matter?
 25 A. Well, a draft implies a review process and a refinement

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1 process. An approval implies that review has taken
 2 place.
 3 Q. By the people who ought properly to review it?
 4 A. Well, depending on how their system is, yes. There is
 5 some structured system that says: here's how we do it
 6 and here's how we review it and approve it .
 7 Q. Would it be fair to say that in a well documented system
 8 there shouldn't be frequent occurrences of people
 9 working from draft documents that have not been
 10 approved?
 11 A. I think that's broadly true, yes.
 12 Q. Let's look at this --
 13 A. But -- well, IT life cycles are increasingly -- they
 14 used to be a waterfall where you went through very
 15 serious document stages and signed off each stage and so
 16 on. IT life cycles have become much more iterative and
 17 the overlap between the phases means that people do
 18 things on a draft. For instance, there is much more
 19 iterative development where you develop a prototype you
 20 and refine it. So the style of IT development has
 21 changed over the years to the extent that one overlaps
 22 the phases much more than the old-fashioned waterfall
 23 life cycle.
 24 Q. That's probably changed quite a bit over the last ten
 25 years, is that fair?

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1 A. Yes, depending on different organisations, they have
 2 taken it up in different ways. But the modern tenure is
 3 actually 20 years really.
 4 Q. This document is from 2007 and this is the low level
 5 design for the transaction correction tool?
 6 A. Yes.
 7 Q. And if we go to page {F/425/8}, please. It says:
 8 "This document provides the low level design for the
 9 branch database transaction correction tool module."
 10 A. Yes.
 11 Q. "The utility will allow SSC to correct transactions by
 12 inserting balancing records to
 13 transactional/accounting/stock tables in the BRDB
 14 system. It will also audit the changes made. There
 15 will be no updating/deleting of records in the branch
 16 database."
 17 A. Yes.
 18 Q. And then underneath:
 19 "Warning: the use of this powerful tool has inherent
 20 risks. If the SQL statement is incorrect or badly
 21 written, it is possible to cause unintended
 22 consequences, some of which may cause serious problems
 23 to the branch database. It is expected that only
 24 a small number of skilled staff will run this tool and
 25 that they will have detailed guidance as to when and how

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1 to use the tool."
 2 A. Yes.
 3 Q. So pausing there. The existence of this document and
 4 the development -- careful development we see here of
 5 the tool shows, firstly, that there was a need for the
 6 tool?
 7 A. Yes.
 8 Q. Secondly, there was a recognition that it was a powerful
 9 tool?
 10 A. Yes.
 11 Q. Thirdly, that because it was a powerful tool there was
 12 a need for protections?
 13 A. Yes.
 14 Q. In the form of a limited number of people able to use
 15 it, yes?
 16 A. Yes.
 17 Q. And clear guidance?
 18 A. Yes.
 19 Q. We also see, I think you know, that there is a table,
 20 journal table to which it writes so its use can also be
 21 audited?
 22 A. Yes.
 23 Q. We have seen from the Anne Chambers' comment about
 24 wanting to go off piste with APPSUP that the APPSUP role
 25 was valued by SSC, including by Anne Chambers. We have

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1 seen that from the PEAK?
 2 A. They felt they had to use it, yes.
 3 Q. And the APPSUP tool was even more powerful because it
 4 was unbounded as to which tables it could access?
 5 A. I think so, yes.
 6 Q. And it didn't have those protections?
 7 A. I think you are right, yes.
 8 Q. And Mr Coyne identifies this in his second expert report
 9 at {D2/4/244}.
 10 MR JUSTICE FRASER: Do you mean 4 or 4.1?
 11 MR GREEN: My Lord, actually I have got the wrong reference
 12 here but I think it is the same in both.
 13 The short point is that we can see that -- perhaps
 14 the easiest place to look at it is {F/594/1}. This is
 15 a 2010 PEAK --
 16 A. This is a BT, is it?
 17 Q. -- which was to be created. This is a PEAK to amend the
 18 tool.
 19 A. Yes.
 20 Q. And --
 21 A. Well, more precisely to amend the templates, I think.
 22 Q. To amend the templates. Well, the point is if there was
 23 no perceived use for the tool in future it would be
 24 surprising to spend a lot of time and effort developing
 25 a template for its use?

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1 A. Well, there are lots of templates, there are several
 2 templates, and the previous document was referring to
 3 the precision required in the SQL. That was the
 4 precision in the templates rather than the tool itself
 5 which just ran the templates.
 6 Q. The short point is that a tool was -- the transaction
 7 correction tool was carefully designed to meet a need,
 8 it is common ground that that specific tool was only
 9 used once?
 10 A. Yes.
 11 Q. And it is fair to infer that there would have been
 12 occasions when that tool could have been used and the
 13 APPSUP tool was used instead?
 14 A. I want to be careful about that because they would only
 15 go off piste, as Anne put it, when they really had to.
 16 Q. How do you know that? That's speculation.
 17 A. In one of the two interpretations, I think Fujitsu/SSC
 18 staff would not want to do a labour intensive support
 19 task if they had a tool to do the job, or templates to
 20 do the job. That's the inference I'm making.
 21 Q. The APPSUP role gave them a freedom they didn't enjoy
 22 with using the transaction correction tool itself,
 23 didn't it?
 24 A. And it gave them a freedom that I infer they didn't want
 25 to use more than they had to.

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1 Q. Let's look at Mr Coyne's revised report at {D2/4.1/247},
 2 please. If we look at paragraph 5.438.
 3 A. Yes.
 4 Q. He says in his opinion:
 5 " ... it is my opinion that more than one BT has
 6 been conducted ... for the following reasons."
 7 Yes?
 8 A. Yes.
 9 Q. And he says the tool was created on 12th March.
 10 A. The PC was created -- the PEAK was created.
 11 Q. I'm so sorry, the PEAK was created on 12th March which
 12 relates to the transaction tool. He says it has now
 13 been used in live :
 14 "The templates for use with this tool need to be
 15 updated to correct some details. Gareth Seemungal is
 16 aware of the corrections needed ..."
 17 A. Yes.
 18 Q. ..." The proposed fix would correct and update the BRDB
 19 transaction correction tool templates, making it less
 20 likely that mistakes will occur when SSC are trying to
 21 resolve problems with transactions in BRDB."
 22 Yes?
 23 A. Yes.
 24 Q. He says:
 25 "This suggests that modifications and balancing

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1 transactions conducted by Fujitsu support staff within
 2 the BRDB is not unusual."
 3 A. Well, I think that the transaction correction tool was
 4 made to make a number of changes with different
 5 templates to the branch database, most of which were not
 6 transaction corrections.
 7 Q. And you wouldn't disagree that it is a fair opinion for
 8 Mr Coyne to have formed, what he said there?
 9 A. As I said, the uncertainty in my mind is that there were
 10 several templates and they were doing different things
 11 and you only need one template to do a transaction
 12 correction.
 13 Q. We have seen what the purpose --
 14 A. The low level design says it can do this table and that
 15 table and so on.
 16 Q. And the tables we saw would affect branch accounts?
 17 A. No, there are a lot of tables there different from the
 18 ones used in the one BT.
 19 Q. You were able to use it to access tables that would
 20 impact branch accounts, weren't you --
 21 A. Certainly.
 22 Q. And he says in his report, at (ii) he says:
 23 "Fujitsu were able to insert balancing transactions
 24 outside of utilising the branch correction tool referred
 25 to above."

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1 Yes?
 2 A. I'm not sure what he is referring to there.
 3 Q. If they used the APPSUP role they could do so. We have
 4 agreed that.
 5 A. We have agreed but if they have got a tool to do it, to
 6 hand-craft some SQL to do it would be very time
 7 consuming, and why would they want to do it if they had
 8 a tool?
 9 Q. What do you infer from the fact that a tool was not only
 10 carefully developed to meet a need but also had its
 11 templates revised but only appears to have been used
 12 once for that purpose?
 13 A. It was only used once for a balancing transaction, but
 14 I think it was used other times for these other purposes
 15 involving other tables.
 16 Q. Is that something you specifically have seen or
 17 conjecture?
 18 A. It is not conjecture. Unfortunately my memory is a bit
 19 unclear but I have seen -- I mean, for one thing the low
 20 level design talks of other tables, other than the ones
 21 used in the BT. That's the first piece of evidence.
 22 And it talks about templates in the plural whereas one
 23 template would have been needed to do a balancing
 24 transaction. So that is the second piece of evidence.
 25 Now the third one, I think somewhere I looked at

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1 some records of how it was used and found there were
 2 these other uses not to do with affecting branch
 3 accounts.
 4 Q. You are not sure what that was?
 5 A. I'm not sure of the third piece of evidence. I am sure
 6 of the first two.
 7 Q. What we can say fairly is from the discussion in the
 8 PEAK, the APPSUP PEAK, they clearly did very much value
 9 having the APPSUP role?
 10 A. Yes, they needed it sometimes.
 11 Q. Can we look at a document which is dated 24th May 2019,
 12 so it is obviously a recent document. It is at
 13 {F/1848.8.3/1}.
 14 There is absolutely no complaint whatsoever about
 15 this being provided on 30 May, because it is a document
 16 dated 24th May, but I mention the date it was
 17 provisioned. Dr Worden, had you had a chance to look at
 18 this or not?
 19 A. I haven't looked at this. I do not think I have. It is
 20 not familiar. I have tried to read a lot lately.
 21 Q. It is a global user process management document.
 22 A. Yes.
 23 Q. It says:
 24 "A process called Global User was brought in to
 25 replace the One-Shot (single use) password process used

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1 on Horizon. It allows roles in the business, such as
 2 auditors, to be able to go out to any branch and use the
 3 same log on to access any Horizon kit in Branch without
 4 having to request a single use password at each branch.”
 5 A. Yes.
 6 Q. "The individual requiring a Global User account has to
 7 be approved by a Manager showing on the Global User
 8 requester and approver list ."
 9 Yes?
 10 And you see "Issue identified" by PwC. It says:
 11 "PwC identified during an audit that the current
 12 Global User list inherited from Fujitsu contained
 13 employees who had left the Business. This raised
 14 concerns over the security of access to Horizon.
 15 Although this is a low risk in terms of Horizon access
 16 (the individual would have to gain access into a Branch
 17 first), it is still a risk and needed to be mitigated."
 18 Do you see that?
 19 A. Yes.
 20 Q. Then the actions taken, second bullet point:
 21 "32 individuals were identified as having left the
 22 business."
 23 But to be fair , half of these had only recently left
 24 in April 2019. Yes?
 25 A. Mm.

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1 Q. Then under "Next Steps":
 2 "There is no current owner of the process. NBSC
 3 administer it but the actual Global User process to
 4 maintain the data has not been owned by any area for
 5 some years."
 6 A. Yes.
 7 Q. Pausing there. Let's start at the top, is that ideal?
 8 A. It doesn't sound ideal, no.
 9 Q. It is not great access control, is it?
 10 A. Something has fallen between the cracks, yes.
 11 Q. Dr Worden, just a more general point. It is right,
 12 isn't it, that when something has been identified
 13 correctly as a system problem and fully investigated , we
 14 are likely to see more documentation about that than we
 15 would otherwise?
 16 A. Do you mean a system problem or a process problem like
 17 this?
 18 Q. Ignore process. We are back into system.
 19 A. Right, okay.
 20 Q. So on a PEAK or something like that. And I think to be
 21 fair to you, I think there are circumstances in which
 22 PEAKs will be generated by SSC where their own records
 23 tell them that there has been a problem like a failed
 24 reversal or something like that?
 25 A. You are talking about records other than the PEAK?

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1 Q. PEAKs or KELs, yes.
 2 A. Yes.
 3 Q. And the broad point is the more investigation that's
 4 done and the better the problem is recognised as
 5 a system problem, the more documentation we are likely
 6 to see about it?
 7 A. Well, I mean, Fujitsu's incentive when a problem arises
 8 is to fix it as soon as possible. If they can fix it
 9 simply then we won't see as much documentation as if it
 10 is difficult and takes a lot of different investigation .
 11 Often in PEAKs we see investigations going around the
 12 houses and so on.
 13 Q. Finally , Dr Worden, can we just look at your declaration
 14 at the end of your first report, please. It is on
 15 {D3/1/260}. At 1194 you have referred to guidance in
 16 a case at the end of that paragraph.
 17 A. Yes.
 18 Q. Was that something that -- was that case something you
 19 had looked at on your own initiative ?
 20 A. Not on my own initiative , no. I was pointed towards it .
 21 Q. Did you identify the reference to that case and the case
 22 report reference?
 23 A. No, the document was supplied to me.
 24 MR GREEN: Thank you very much. My Lord, I have no further
 25 questions.

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1 MR JUSTICE FRASER: All right. Mr de Garr Robinson, some
 2 re-examination?
 3 MR DE GARR ROBINSON: Yes, my Lord.
 4 Re-examination by MR DE GARR ROBINSON
 5 MR DE GARR ROBINSON: I would like to start, Dr Worden, by
 6 asking you a few questions about your scaling
 7 calculation .
 8 A. Yes.
 9 Q. This was covered on Tuesday. You were taken to
 10 {F/1837/1}, so I would like to look at that, please.
 11 A. Yes.
 12 Q. The questions you were asked focused on columns E and F
 13 of that table. Do you remember?
 14 A. E and F, "2007" and "2007 Gaps".
 15 Q. Yes. You explained, when you were asked how you had
 16 arrived at your calculation in your first report, that
 17 you took a column for 2007 which you knew had gaps,
 18 having looked and seen that the gaps were not
 19 significant , do you remember that?
 20 A. That is right, yes.
 21 Q. I think you called it eyeballing?
 22 A. Yes.
 23 Q. For your Lordship's note, this is at {Day18/196:1} to
 24 page 198.
 25 And at one stage it was put to you that you had

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1 given false evidence about what you had actually done in
 2 that calculation, and the premise upon which this was
 3 put to you is that ...
 4 This is different from the table I have just seen
 5 (Pause)
 6 What I asked to look at was {F/1837/1}.
 7 A. The gaps has gone. It seems to be empty now.
 8 Q. There we are. So we are at 1837. You see there is
 9 a column which says "2007" and there is a column which
 10 says "2007 Gaps". One of those columns is complete and
 11 one of those columns has gaps in them. And what was
 12 suggested to you was that given there were two columns
 13 with these figures, with this configuration, one
 14 complete and the other with some gaps in, you cannot
 15 possibly have chosen to take the one with the gaps in
 16 without making a mistake. Do you remember that?
 17 A. I remember that, yes.
 18 Q. And it was suggested that your explanation as to what
 19 you had done couldn't be right. I would just like to
 20 explore that surprising suggestion briefly.
 21 As Mr Green said at page 176 of the transcript, the
 22 spreadsheet we are looking at is an amended version of
 23 the original spreadsheet that Mrs Van Den Bogard
 24 actually referred to in her original statement. Do you
 25 remember that?

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1 A. I do yes.
 2 Q. And the amended version, the version we are looking at
 3 now, was produced in January.
 4 A. Yes.
 5 Q. So when you were doing your first report the spreadsheet
 6 was different and it was disclosed with Mrs Van Den
 7 Bogard's witness statement in November. For
 8 your Lordship's note, that is at {H/137/1}.
 9 Can we now go, please, to the document you may have
 10 taken me to, which is {F/1837.1/1}. If we could go to
 11 the top of that document, please.
 12 You will see that column E says "2007" and column F
 13 says "2007 Gaps", and it is column F that every now and
 14 then contains an item.
 15 A. Yes. And when there is a gap in E there is an item in
 16 F.
 17 Q. Perhaps we can scroll down a little bit until we see
 18 one. There are not very many of them. We can stop now.
 19 If we look at row 74 there is a figure of 6.
 20 A. Yes.
 21 Q. Is this the document that you used at the time you
 22 produced your first report?
 23 A. I think it was, yes.
 24 Q. And when you said you eyeballed these columns, do you
 25 recall what columns you eyeballed?

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1 A. All columns, I presume, I think I eyeballed all columns.
 2 And what is evident to me now is that where there is
 3 a gap in 2007, the figure in "2007 Gaps" is taken over
 4 from 2001 or whatever it may be. But my impression on
 5 eyeballing was that there weren't many gaps.
 6 Q. There weren't any gaps or --
 7 A. There weren't many gaps.
 8 Q. So you chose to take the figures in column E?
 9 A. This was a long time ago and it has kind of been
 10 superseded by the supplemental report where I did it
 11 more properly.
 12 Q. Can I just ask you what your reaction is to the
 13 suggestion that you made a stupid mistake and should
 14 actually have taken column F as your means of
 15 calculation?
 16 A. Well, obviously column F is not the column to take,
 17 that's blindingly obvious.
 18 Q. Thank you.
 19 Now I would like to ask you about some questions you
 20 were asked yesterday regarding ARQ requests. You gave
 21 evidence, and this is at {Day19/17:1} onwards, that you
 22 have always been aware that cost of requests over the
 23 annual allowance of 720 ARQ requests was in the ballpark
 24 of £250, do you remember that?
 25 A. Yes.

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1 Q. Now several things were suggested to you when you said
 2 that. First of all, it was suggested that, in fact, the
 3 true cost was £450. Secondly, it was suggested that
 4 this is important because, as far as I could understand
 5 from the line of questioning, £200 plus cost involves no
 6 particular disincentive to make ARQ requests but a £450
 7 cost creates a disincentive, and because of that it was
 8 suggested it was quite misleading to talk of a figure of
 9 over £200.
 10 Stopping there, Dr Worden, I do not think you had
 11 talked about a figure of £200. Is that something you
 12 discussed in either of your two reports?
 13 A. I do not think I did. The point which always occurred
 14 to me and seemed to me obvious is if you are doing
 15 100,000 TCs a year, to do any cost of £250 for each one
 16 of them is ludicrous.
 17 Q. I actually think that the point was intended to be
 18 a criticism of me because I put that figure to Mr Coyne
 19 in cross-examination and he agreed it.
 20 The fourth point is that it was suggested to you
 21 that when you said you thought the cost was in the
 22 region of £250, you had no foundation for that figure
 23 and you were simply giving answers which you thought
 24 were consistent with Post Office's case rather than the
 25 true facts, do you remember that?

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1 A. I do I think, yes.
 2 Q. So it is a serious allegation, an attempt to impugn your
 3 veracity. You said that you had seen documents but
 4 could not remember the particular document.
 5 A. Yes.
 6 Q. I don't know what documents you have seen but I wonder
 7 whether the document I'm about to take you to might be
 8 the one. Could we go to {F/1659.2/1} please. This is
 9 a document which has been added to the trial bundles
 10 overnight. There was no expectation that there be any
 11 line of questions on this particular issue, so no one
 12 thought to put this in the trial bundles originally.
 13 Dr Worden, this is part of a contract between
 14 Fujitsu and Post Office. If you look at page 1 you can
 15 see the various different versions of that contract.
 16 The earliest one on this version is 31st August 2006.
 17 If we go over the page to {F/1659.2/2} we see what
 18 I think is the current version, 12.0 on 3rd July 2017.
 19 Now, I'm not aware of any clause in a contract between
 20 Fujitsu and Post Office saying: if you go over the 720
 21 ARQ allowance you pay X. Instead what I'm aware of is
 22 an option to increase the allowance so as to allow you
 23 to go over the 720 threshold. That option is provided
 24 for on page {F/1659.2/689} perhaps we could look at
 25 that.

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1 MR JUSTICE FRASER: Have you seen this document before
 2 Dr Worden?
 3 A. I have not seen this, no.
 4 MR DE GARR ROBINSON: Have you not?
 5 A. No.
 6 Q. If we look at paragraph 5.5 perhaps I could ask you to
 7 read that Dr Worden.
 8 (Pause).
 9 A. Yes, read it.
 10 Q. So you will see that there is a reference there to
 11 a cost, if Post Office wishes to increase its allowance
 12 of 720 ARQ request, you will see that the cost is
 13 provided for £222 odd a day.
 14 A. Yes.
 15 Q. That was where my question to Mr Coyne came from, the
 16 question which he accepted when I put it to him. But
 17 the question I want to ask you, and it may be that you
 18 have already answered it, is that might this be the
 19 document from which you formed the impression?
 20 A. I do not think it was actually. I think I have seen it
 21 in several places, numbers of that ballpark and I'm
 22 afraid I can't recall what those documents were.
 23 Q. Very good. Let's move on to --
 24 MR JUSTICE FRASER: I didn't mean to steal your thunder by
 25 asking him if he had seen it before.

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1 MR DE GARR ROBINSON: My Lord, I'm in a very forgiving mood,
 2 so we will say nothing more about it.
 3 Callendar Square. I will just ask a few questions
 4 about Callendar Square. Mr Green took you to the
 5 original Callendar Square PEAK with a view to looking at
 6 how the story developed.
 7 That was a PEAK that was I think started -- it was
 8 opened on 15 September 2005. Then he asked you about
 9 how long the Callendar Square bug had been in the system
 10 and you agreed with him that it was since about 2000.
 11 Do you remember that?
 12 A. I agreed that the cause in Riposte had been May.
 13 Q. The impression may have been given that the bug lay
 14 undetected until the Callendar Square PEAK appeared and
 15 I would like to ask you about that.
 16 First of all, Mr Green drew your attention to
 17 a document at {F/312.1/1} if we could go to that. You
 18 will see at the top of the page this refers to
 19 Callendar Square. It is dated 16/11/05. It refers to
 20 Alan Brown, who I think is the subpostmaster of that
 21 branch.
 22 He says:
 23 "PM HAS £3,800 THAT SYSTEM IS TELLING HIM HE MUST
 24 SETTLE BEFORE HE CAN ROLL OVER. THIS IS FROM 8 WEEKS AGO
 25 & IS DUE TO A WELL DOCUMENTED HORIZON SYSTEM PROBLEM.

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1 CAN AIO CONTACT WITH REGARD TO THIS? SAYS AIO KNOWS
 2 ABOUT IT HAVE TOLD PM HE MUST SETTLE."
 3 The reference to "this is due to a well documented
 4 Horizon system problem", what do you infer from that
 5 about whether this bug was undetected or not?
 6 A. This confirms other evidence I have seen that Fujitsu
 7 were getting at Escher to fix this Riposte problem and
 8 that was an ongoing debate between Fujitsu and Escher
 9 and at one stage Escher said they had fixed it and it
 10 turned out it wasn't fixed, and so that went on for five
 11 years.
 12 Q. I see. If we go to your first report please. That's
 13 {D3/1/155}. If you look at paragraph 660 at the bottom
 14 of the page, this is where you start your analysis of
 15 the Callendar Square bug. You indicate it is described
 16 in two KELs and several PEAKs and you identify them
 17 there.
 18 A. Yes.
 19 Q. "First arose in 2000 and was not fixed until Release S90
 20 in 2006."
 21 I notice you refer to a number of PEAKs there. Some
 22 questions have been asked of you over the last three
 23 days which might have given the impression that you have
 24 only been looking at KELs. When you produced your first
 25 report to what extent had you had regard to PEAKs?

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1 A. In this bug particularly so because one wanted to trace
 2 the timeframe, time progression and you can see from
 3 these PEAK numbers that they are rather early ones going
 4 back to 0075 and so on and so forth. PEAK numbers
 5 (inaudible). So, yes, I have looked at PEAKs in this
 6 respect.
 7 Q. Just extending further beyond just the Callendar Square
 8 issue, did you look at PEAKs relating to other issues?
 9 A. All sorts of issues. I have done a lot of surveying of
 10 PEAKs to get the feel for the bulk of them, the balance
 11 of population and so on, and I have general views about
 12 this type of PEAK, that type of PEAK and so on. There
 13 are PEAKs about harvester exceptions, that's one sort of
 14 thing. There is PEAKs about receipts payments
 15 mismatches and I have looked at a large number of these.
 16 Q. Have you looked at large numbers of PEAKs when you
 17 produced your first report?
 18 A. Not large numbers at the time of my first report, no.
 19 It has been more recent.
 20 Q. What sort of scale of numbers had you looked at at that
 21 stage?
 22 A. In my first report?
 23 Q. Yes.
 24 A. I would say I have looked at the ones Mr Coyne had
 25 raised in his report and I had looked at probably

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1 a couple of dozen in connection with KELs.
 2 Q. Now, one of the KELs that's referred to here in the
 3 context of Callendar Square is J Ballantyne 5245K.
 4 That's at {F/285/1}. For your Lordship's note, KEL is
 5 cited in row 2 of the bug table in JS2 which is at
 6 {D1/2/3}. You see that?
 7 A. J Ballantyne, yes. "Time out waiting for lock." It is
 8 I believe the Riposte cause; another symptom of the
 9 Riposte problem.
 10 Q. You will see halfway down:
 11 "Original date 2000-11-02."
 12 So the KEL was created on 2nd November 2000, is that
 13 right?
 14 A. Yes.
 15 Q. You say another symptom of the Riposte problem. Perhaps
 16 you could explain a little bit what you mean by that?
 17 A. Well, I did explain and I will explain it again. That
 18 there is a problem in Riposte which leads to a failure
 19 to replicate -- failures to release a lock I think --
 20 and then on certain occasions that leads to a short-term
 21 failure to replicate. On other occasions there is
 22 a so-called event storm during which there is a longer
 23 term failure to replicate and during these failures to
 24 replicate all sorts of different things may happen, for
 25 instance they double transfer into a stock (inaudible),

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1 a precise Callendar Square phenomenon; whereas other
 2 things such as system freezes, I can't remember all the
 3 other details, but there are many other symptoms of
 4 then underlying Riposte problem and they have been noted
 5 over this whole period.
 6 MR JUSTICE FRASER: This is what you referred to yesterday
 7 as Riposte lock, is that right?
 8 A. Yes.
 9 MR DE GARR ROBINSON: If we go to page {F/285/3} of the KEL.
 10 And we go to the bottom section under the heading
 11 "Solution".
 12 A. Yes, rebooting was the quick fix. Rebooting, Cleardesk
 13 were the sort of recommended things to do.
 14 Q. Now, what does this indicate regarding the question
 15 whether this bug was an undetected bug or not?
 16 A. It was certainly not undetected for a long time. I mean
 17 it was detected very early on and different
 18 manifestations of it came up over this period.
 19 Callendar Square was just one manifestation.
 20 Q. Let's look at a PEAK that relates to the bug. This is
 21 one of the PEAKs that was referred to in Anne Chambers'
 22 2015 spreadsheet. You remember that?
 23 A. Right.
 24 Q. It is at {F/224.1/1}. It starts on 8 October 2004 so
 25 it is a year before the Callendar Square PEAK, yes?

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1 A. Yes.
 2 Q. Now is this a PEAK that you have seen before?
 3 A. I believe it is. I have certainly seen many like it.
 4 On the face of it, it is about something happening in
 5 the host, ie at the back end, but it may well -- some of
 6 these you look at and you find they actually derive back
 7 to the branch.
 8 Q. I see. So this is an indication of what was happening
 9 on the ground some time before the Callendar Square PEAK
 10 itself was produced. If we look at page {F/224.1/1}, do
 11 you see it says in the first box underneath the second
 12 line:
 13 8/10/04, 10.59:
 14 "The host generated cash account line Comparisons
 15 Report.
 16 TPSC256 for processing date 07/10/04 shows a R & P
 17 diff for FAD 162824 in CAP 28 where Receipts =
 18 £1149340.21, Payments = 1148956.69 and Diff = 383.52."
 19 A. Yes.
 20 Q. Could you explain -- are you in a position to explain
 21 what TPSC256 means?
 22 A. It is a back end report. Cash account line comparisons.
 23 It is one of the back end reports to do with TPS, which
 24 is feeding transactions to the Post Office, and
 25 sometimes these transactions have to be fixed in various

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1 ways before they can go to the Post Office .
 2 Q. So this report is generated. To whom is the report
 3 produced?
 4 A. Fujitsu look at the report I think and if there are
 5 problems Fujitsu try and fix them.
 6 Q. If we go down just a few lines , it says about four lines
 7 down:
 8 "This FAD also appears on TPSC268A with a difference
 9 of exactly half the amount."
 10 There is a question as to whether it is related .
 11 Could you say what TPSC268A is?
 12 A. There are several TPS reports and it is quite a long
 13 list , I cannot say precisely which one is which. But
 14 they do give different slices of information which is
 15 going to Post Office .
 16 Q. So this is an example of the Callendar Square bug. If
 17 we could go over the page to page {F/224.1/2}?
 18 A. Sorry, could I just interject there that you see
 19 a smallish receipts/payment mismatch. One of the
 20 manifestations of the Riposte problem was that when you
 21 were doing balancing, one of the counters in the branch
 22 was isolated and say had been isolated for half an hour
 23 or something, so the transactions from that counter
 24 would not get into your balance so you would have
 25 a small payment receipts mismatch and I think this is

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1 probably one of those. Again it is not Callendar Square
 2 exactly, it is the Riposte bug leading to a counter
 3 being isolated for a short while.
 4 Q. I see. If you go to over the page to {F/224.1/2} you
 5 see about two lines down from the top:
 6 "MSU need to inform POL so they can take appropriate
 7 action."
 8 Do you know what that signifies . Who is MSU?
 9 A. Management Support Unit and obviously because this is a
 10 TPS problem there will be some discrepancy in POL and in
 11 the stuff going to POLSAP, for instance, that has to be
 12 fixed .
 13 Q. We will see that the PEAK is closed on 12 October, which
 14 is four days later . What does this tell us about what
 15 was happening on the ground in relation to
 16 manifestations of problems relating to the
 17 Callendar Square bug even before the Callendar Square
 18 PEAK was --
 19 A. It shows that some of them were being detected by
 20 routine monitoring and, for instance, I would also
 21 suspect that any manifestation of the Riposte bug which
 22 led to a double stock transfer in and a single stock
 23 transfer out, that is a double entry accounting failure
 24 and that would certainly be picked up at some stage. So
 25 there are a lot of ways in which this phenomenon would

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1 be automatically detected or easily detected at the back
 2 end.
 3 Q. Let's look at that very point. If we can go to
 4 {F/253/1}, this is another PEAK referred to in the JSC2
 5 bug table in relation to Callendar Square, it is fourth
 6 on the list . It is PC0116670. This PEAK starts on
 7 24th February 2005. It is a good number of months
 8 before the Callendar Square PEAK. We can see at the top
 9 right-hand side "call logger/deleted user/MSU". Can you
 10 explain what that means?
 11 A. Yes. This is somebody in the Management Support Unit
 12 has raised this problem. It is to do with this
 13 reconciliation report which is another of these TPS
 14 reports about what's going to Post Office .
 15 Q. Then we can see that, can't we, in the first box, four
 16 lines down:
 17 "Summary TPS reconciliation report."
 18 I was going to ask you what that means but you have
 19 already told me. There is a reference also to some
 20 particular TPSC numbers, 256, 252, 268A. Those are the
 21 reports we have just ---
 22 A. Yes. That's showing the same error is popping up in
 23 several reports.
 24 Q. What does this PEAK tell us about Fujitsu's awareness of
 25 the issue that was --

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1 A. Well, it says that several manifestations of the Riposte
 2 problem were easily detectable by Fujitsu and they would
 3 be. They had systems set up to detect just this sort of
 4 thing.
 5 Q. And the manifestation which produces the symptoms that
 6 we now call Callendar Square, would they be picked up?
 7 A. I said that the symptoms that now we call
 8 Callendar Square are this double stock transfer in,
 9 single stock transfer out. That is a double entry
 10 accounting mismatch failure and that will certainly be
 11 detected at the back end when it gets to POLSAP or if
 12 not before.
 13 Q. Let's have a look at one final PEAK that's relevant to
 14 Callendar Square. This is one that you referred to in
 15 your report and it is in the bug table as well. It is
 16 {F/210/1}. Perhaps we can have a look at that .
 17 What is the date? It starts 3rd June 2004. So we
 18 are more than a year before the Callendar Square PEAK.
 19 If we go to the bottom of page {F/210/2} there is what
 20 I believe is a yellow box.
 21 A. I don't get the colours.
 22 MR JUSTICE FRASER: Do you not get colours on this?
 23 A. Not on the screen.
 24 MR DE GARR ROBINSON: I don't either.
 25 MR JUSTICE FRASER: Really? I didn't know that. I suppose

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1 a bit late to find out during re-examination of the
 2 final witness of a trial that started in March but --
 3 MR DE GARR ROBINSON: My Lord, it is never too late to
 4 enhance the system. I feel that we can all agree that.
 5 MR GREEN: There is colour on the far end.
 6 MR DE GARR ROBINSON: I see that Ms Keating has
 7 a beautifully coloured screen, but I'm not being bitter
 8 about it. My Lord, if we could look at
 9 page {F/210/2} --
 10 MR JUSTICE FRASER: As you said earlier, you are in
 11 a forgiving mood. I'm sorry you don't have colour,
 12 Dr Worden, I didn't realise. Are we going to the bottom
 13 box?
 14 MR DE GARR ROBINSON: Right at the bottom box. I'm going
 15 read the last two lines and then perhaps we could go
 16 over the page when I get to the relevant point:
 17 "Eventlog from node 4 suggests that Riposte
 18 replication had not been successful and so while node 3
 19 had successfully TI the txns, this information was not
 20 apparent to node 4 thus it was perceived by node 4 that
 21 those txns were outstanding waiting to be TI. Therefore
 22 when the user SMU001 logged onto node 4, he was
 23 presented with Outstanding Transfer message which had to
 24 be accepted or declined. The user chose to accept them
 25 even though he tells me that at this stage he was a

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1 little concerned because he was certain that user ASU010
 2 had already TI on node 3. This has created a discrepancy
 3 on their Cash Account £22,290.00. Also the Host has
 4 reported a reconciliation error in TPSC256 for
 5 £44,580.00."
 6 A. I did remark on that I remember noticing the exact
 7 double figure.
 8 Q. It is clearly a function of the different reports, one
 9 picks up the right figure, there is another report which
 10 doubles it for various reasons.
 11 A. Yes.
 12 Q. Now if we go down to the third page {F/210/3}. There is
 13 an entry for 8th June 2004 at 14.48. It says ---
 14 A. Errors in the three reports.
 15 Q. Errors in TPSC reports 252, 256, 268A. This confirms,
 16 I believe, the evidence you have already given, which is
 17 the actual Callendar Square symptom we are talking about
 18 is picked up by these reports, yes?
 19 A. Yes.
 20 Q. Let's see how it was handled. If we go to page
 21 {F/210/5}. Box: 11 June at 16.30. It has been
 22 transferred to MSU. Then if we go down further the
 23 page: 22 June at 15.38 and it has been transferred to
 24 EDSC. Why am I telling you those things?
 25 We go over to page {F/210/6}. 6 July, 11.44:

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1 "I've checked with Mike King; the BIMS report for
 2 this problem was sent to POL on 22/6 and should have
 3 resulted in an error notice being sent to the branch
 4 Mike says he will send a note to POL saying that the PM
 5 has been chasing this issue; I've asked HSH ..." which
 6 I think must be the help desk.
 7 "... to inform the PM that they should have received
 8 an error notice and to check with the department that
 9 issues them."
 10 Then if we go on to page {F/210/7} you will see
 11 5th August 2004 at 11.57.
 12 A. He's confirmed he got it.
 13 Q. That's three boxes down:
 14 "PM [Mr Mogul] has confirmed that POL have issued
 15 him with an Error Notice of £22290.00 which has enabled
 16 him to clear the error from his account. He is happy for
 17 this call to be closed."
 18 Now the evidence you gave when asked about it by
 19 Mr Green is that regardless of procedure in the majority
 20 of cases if there is an R&P mismatch it will be sorted
 21 out eventually. Mr Green queried whether you had any
 22 basis for saying that. Are the PEAKs we have seen
 23 relevant to that view --
 24 A. Yes, they are very relevant particularly this one, it
 25 shows that it is picked up on three reports at the back

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1 end. There is a lot of going back and forth, but end of
 2 the back and forth is the BIMS and Post Office being
 3 alerted and the branch being sorted out.
 4 Q. Thank you. If we could now have another look. It was
 5 suggested by Mr Green that the problem may have
 6 persisted even after it was fixed by Release S90 in
 7 2006. If we could go to the document that Mr Green put
 8 to you for that purpose. It is {F/565/1}.
 9 You will see the original date, it was opened on
 10 10th May 2002, halfway down, do you see that?
 11 A. 10th May 2002, yes.
 12 Q. Immediately below that there is a revision date,
 13 11 January 2010?
 14 A. All right, okay.
 15 Q. Perhaps we can go to the last page of this document now
 16 {F/565/3} and we see what must be the reason for the
 17 update. It is the very last paragraph:
 18 "Update: 11/01/2010."
 19 There is a reference to a PEAK:
 20 "If the message was seen on a Correspondence server
 21 and the source of the message is Riposte then raise a
 22 Peak call and route it to SSC to stop and restart the
 23 Riposte service under OCP. If the errors are seen on
 24 more than one Correspondence server at the same time
 25 then further investigations should be carried out."

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1 It was suggested to you that that update may suggest
2 that the Callendar Square manifestation continued after
3 the fix in 2006. You can take it from me, I have looked
4 at the PEAK that's referred to here, and that is not the
5 manifestation of the Callendar Square bug. But what
6 I want to ask you is whether you were aware of any
7 incident after the fix of the Callendar Square bug, any
8 incidents in which the Callendar Square symptoms
9 occurred again?

10 A. No.

11 Q. Thank you. Now, today we had some rather extraordinary
12 questions about the derivation or where the word "grey"
13 came from and I'm going to ask you about that. It
14 starts in appendix D3 of your first report. Could we go
15 please to -- what is the reference? I'm afraid I have
16 not written it down.

17 It will be {D3/2/129}. You were asked about
18 paragraph 5.93. Do you see that? You were commenting
19 on particular paragraphs of Mr Coyne's first report
20 where he refers to particular KELs, yes?

21 A. Yes.

22 Q. If we go to your analysis, the middle paragraph you say:
23 "This was caused by a complex 'grey' communications
24 failure which could not be reproduced - so diagnosis was
25 not complete."

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1 And you were asked where you got the word "grey"
2 from?

3 A. I imagine it may well be from the KEL.

4 Q. I was going to ask you. If we can go to the KEL, that
5 is at {F/757/1}. I will just let you glance down the
6 heading but I don't really need much of substance, just
7 to refamiliarise yourself.

8 A. Comms became available. Yes.

9 Q. If I could ask you to go to page {F/757/2}. Under the
10 heading "May 2010 Update by Development."

11 A. We have black and white immediately.

12 Q. It says:

13 "When comms are black and white, i.e. always on or
14 always failing, it is fairly straightforward to recreate
15 a particular situation. However the sequence seen in the
16 log files is so complex it is not possible to replicate
17 the conditions."

18 Now, having seen that text, does that refresh your
19 memory as to where the word "grey" might have come from?

20 A. So "grey" is not actually in the KEL, is that right?

21 Q. Yes.

22 A. Well, obviously black and white, grey is between black
23 and white, and it is exactly as I described it, as an
24 intermittent fault. Grey would be one way of describing
25 it and I would probably have made up that word myself.

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1 MR DE GARR ROBINSON: Right. Would you give me a moment
2 please Dr Worden.

3 My Lord, I have no further questions.

4 Questions by THE JUDGE

5 MR JUSTICE FRASER: I have just got a couple.

6 Dr Worden, this afternoon you were asked quite
7 a long sequence of questions about privileged user logs,
8 do you recall that?

9 A. Yes.

10 MR JUSTICE FRASER: It was only at about 3.05.

11 A. Yes.

12 MR JUSTICE FRASER: In the course of that you confirmed,
13 I think, that you found the privileged user logs unclear
14 when you've looked at them, is that right?

15 A. That is right.

16 MR JUSTICE FRASER: In one of your answers you said you
17 couldn't get to the bottom of it in the time that you
18 had devoted to it.

19 A. That is right.

20 MR JUSTICE FRASER: Can you just give me an idea of how long
21 you had devoted to trying to --

22 A. Looking at privileged user access logs, less than a day.

23 MR JUSTICE FRASER: All right. But a reasonable number of
24 hours I imagine?

25 A. Yes.

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1 MR JUSTICE FRASER: I don't want to put words into your
2 mouth if that's --

3 A. What they are is this monster spreadsheet that gives you
4 one day's worth of data and I looked around.

5 MR JUSTICE FRASER: All right. That's very useful. Thank
6 you very much.

7 There are a couple of questions but it relates to
8 the same event. Now, relatively recently you served
9 your third report directly on the court?

10 A. Yes.

11 MR JUSTICE FRASER: I'm not going to be asking you any
12 questions at all about the content of that document.
13 But I just want to ask a couple of questions so that
14 I can understand the sequence because I have already had
15 an explanation from Mr de Garr Robinson and I have also
16 had a witness statement from the Post Office's
17 solicitors.

18 A. Yes.

19 MR JUSTICE FRASER: The documents that you relied on in
20 order to prepare or compile or draft that report are
21 PEAKs, KELs, OCRs, OCPs, etc?

22 A. Yes.

23 MR JUSTICE FRASER: When did you first get access to those
24 documents?

25 A. Well, PEAKs was -- the full set of PEAKs I can't recall

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1 the exact date, but it was way back in 2018 and the OCPs
 2 and OCRs, again I cannot recall the exact date, but
 3 I have had them for some months I think and the idea of
 4 automatically searching them in this way came to me
 5 comparatively recently.
 6 MR JUSTICE FRASER: But the actual documents you had had
 7 a number of months, is that correct?
 8 A. Yes.
 9 MR JUSTICE FRASER: Then, you have been a witness I think,
 10 an expert witness, in a number of other cases?
 11 A. I have.
 12 MR JUSTICE FRASER: Have you ever served one of your expert
 13 reports directly on the court before?
 14 A. I have never done that myself before. I had it done to
 15 me.
 16 MR JUSTICE FRASER: But you have never done it before?
 17 A. A kind of late report, no. I mean the issue of serving
 18 direct on the court rather than through lawyers, I don't
 19 recall how that happened in the past. I suspect it was
 20 all done through lawyers.
 21 MR JUSTICE FRASER: But in this case everyone knows you sent
 22 an email to my clerk?
 23 A. I did, yes. That's what I was advised to do, that was
 24 how I was advised to do it.
 25 MR JUSTICE FRASER: You were advised to do it?

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1 A. By Post Office lawyers, yes.
 2 MR JUSTICE FRASER: All right. And the email -- the
 3 covering email, did you show the drafting of that to
 4 your instructing solicitors before you sent it or did
 5 you just draft it yourself?
 6 A. I just drafted it.
 7 MR JUSTICE FRASER: And did you check or have it approved by
 8 them?
 9 A. No, I think I had been given some advice as to what it
 10 should cover.
 11 MR JUSTICE FRASER: All right. Okay. Well I don't have any
 12 more questions about that, thank you very much. I don't
 13 know if either of you have any follow up questions on
 14 that, but if you do it is not to go to the content of
 15 the third report.
 16 MR GREEN: My Lord, no. My learned friend gave some
 17 evidence about having checked the PEAK himself, I expect
 18 I'm not allowed to cross-examine him on it? Perhaps
 19 I will save that for closing submissions.
 20 MR JUSTICE FRASER: Regardless of how forgiving he might be,
 21 I'm not that forgiving.
 22 MR GREEN: I'm grateful.
 23 MR JUSTICE FRASER: Although I'm relatively forgiving. So,
 24 Dr Worden, that is your evidence at an end. Thank you
 25 very much.

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1 A. Thank you.
 2 MR JUSTICE FRASER: I do however have one point, which is
 3 a point for you, Mr de Garr Robinson, I'm afraid. I'm
 4 not going to go through it in enormous detail but just
 5 to give you the references, yesterday at
 6 page {Day19/204:1} you gave me an explanation about the
 7 recent disclosure that was produced in late May which
 8 concerned OCPs, OCRs etc.
 9 MR DE GARR ROBINSON: It was some OCRs I believe, my Lord,
 10 yes.
 11 MR JUSTICE FRASER: In the course of that, and it is at
 12 page 204, I will just read out what you said, you
 13 described that they were maintained on the Fujitsu
 14 system and you said:
 15 "Much later Fujitsu discovered an old database had
 16 been copied more than ten years previously on the system
 17 somewhere and told the Post Office they had those
 18 collection of documents and then the Post Office
 19 produced them, etc."
 20 Today, at 11.37, Mr Green put a document to
 21 Dr Worden which is {F/1848.8.2/1} which is a PEAK
 22 dealing with the Drop & Go discrepancy, which he said
 23 was disclosed on 30 May 2019 and is a PEAK that is, on
 24 its face, dated 21st August 2018. So it can't fall
 25 within the category of documents on the old database

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1 etc. Can the witness statement please specifically
 2 deal --
 3 MR DE GARR ROBINSON: It can. I asked about that. I knew
 4 nothing about it until it came up. I have asked about
 5 that and there is an account which can be --
 6 MR JUSTICE FRASER: As long as that can also be included.
 7 MR DE GARR ROBINSON: It can.
 8 MR JUSTICE FRASER: Right. Thank you very much. Have you
 9 got some more documents to give me?
 10 MR GREEN: My Lord, we have compiled a bundle of the PEAKs
 11 and KELs referred to during Dr Worden's---
 12 MR JUSTICE FRASER: Thank you very much.
 13 MR GREEN: Apart from re-examination because we didn't know
 14 what was coming.
 15 MR JUSTICE FRASER: Don't worry about that, there has only
 16 been a couple of things. Thank you. So I can with the
 17 exception of re-examination that is my hard copy PEAK
 18 and KEL data complete. Is there anything else
 19 housekeeping, quasi housekeeping, any other points?
 20 MR DE GARR ROBINSON: Not even quasi housekeeping, my Lord.
 21 MR JUSTICE FRASER: Whatever that might be.
 22 So, in terms of timetabling, I think there is a date
 23 already been ordered for your submissions in writing.
 24 We don't need to change that. It is the 1st and
 25 2nd July, a day each. If there are to be any further

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1 authorities , although I imagine even if there are they
 2 would be limited given the subject matter of the Horizon
 3 trial , but if there are if they could just be put in
 4 an agreed bundle and I think for this tranche of the
 5 trial that's it until then. Is that right?

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6 MR DE GARR ROBINSON: My Lord, I hope so.

7 MR JUSTICE FRASER: Well, one never knows. But 1st and
 8 2nd July, I look forward to seeing you all then. You
 9 might have the chance to have your screens swapped.

10 MR DE GARR ROBINSON: I have got rather used it now,
 11 my Lord.

12 MR JUSTICE FRASER: Thank you all very much and until then.

13 (4.26 pm)

14 (The court adjourned until 1 July 2019)

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