

OPUS 2

INTERNATIONAL

Horizons Issues - Alan Bates & Others v Post Office Limited

Day 19

June 13, 2019

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Phone: 0203 008 6619

Email: transcripts@opus2.com

Website: <https://www.opus2.com>

1 Thursday, 13th June 2019
2 (10.30 am)
3 DR WORDEN (continued)
4 Cross-examination by Mr Green (continued)
5 MR DE GARR ROBINSON: My Lord, housekeeping. Bundle of
6 PEAKs and KELs referred to during Mr Coyne's
7 cross-examination with, I believe, an index. Could
8 I hand that up to your Lordship?
9 MR JUSTICE FRASER: Of course. Thank you very much.
10 (Handed)
11 So that's those referred to last week.
12 MR DE GARR ROBINSON: Last week.
13 MR JUSTICE FRASER: The one that I handed back, which was
14 referred to in the evidence of fact, what's happening
15 with that?
16 MR DE GARR ROBINSON: My Lord, that was handed up I think to
17 your clerk at close of business on Tuesday. So you
18 should have that.
19 MR JUSTICE FRASER: I see, yes.
20 MR DE GARR ROBINSON: My instructing solicitors went through
21 it and put in a proper index.
22 MR JUSTICE FRASER: You are right --
23 MR DE GARR ROBINSON: So you should now have --
24 MR JUSTICE FRASER: So I have now apart from this week,
25 which one wouldn't necessarily expect. That's very

1

1 helpful. Thank you very much.
2 MR GREEN: My Lord. Just one very quick point before we
3 resume, if we may. There was a letter that I think may
4 have been copied to the court sent by Wombles yesterday
5 about the status of the recently disclosed documents
6 which include information from the MSC spreadsheets
7 which were disclosed on 21 December.
8 MR JUSTICE FRASER: Yes.
9 MR GREEN: And what is being said there is that from the
10 email that I sent the court --
11 MR JUSTICE FRASER: Well, I have read the email and I have
12 read the letter.
13 MR GREEN: I'm most grateful.
14 MR JUSTICE FRASER: Do we need to pursue this now rather
15 than at the end of the day, given we have Dr Worden
16 there, or do you want to --
17 MR GREEN: I'm happy to do it at the end of the day.
18 MR JUSTICE FRASER: If it is not going to affect what
19 happens during today, I think the best thing, if you
20 have any points arising on that, we will revert to it at
21 the end of the day. Let's get on with the
22 cross-examination of the witness.
23 MR GREEN: I'm most grateful.
24 MR JUSTICE FRASER: All right.
25 MR GREEN: Dr Worden, could we look first please at {C1/1/1}

2

1 which is the Common Issues.
2 A. The Horizon Issues, right.
3 Q. Sorry, the Horizon Issues, I do beg your pardon. The
4 Horizon Issues agreed list.
5 A. Sorry, could I just put in one thing first? I would
6 like at some stage, at your convenience, at any time, to
7 make two corrections to the evidence I gave on Tuesday.
8 MR GREEN: My Lord, is it convenient to do that now?
9 MR JUSTICE FRASER: I would have thought it is quite
10 important to probably deal with them first.
11 A. Right. The corrections are concerned with the issue of
12 claimant branch sizes, which if you remember we spent
13 some time on, and there are two points in which, looking
14 back at my evidence, I think it needs to be corrected or
15 improved. Those points are in the transcript at
16 pages 183 and 181 {Day18/181:1}. You will recall that
17 at the time I said I was not very clear about what I had
18 done because the history is, as you well know, that
19 I addressed the issue of claimant branch sizes both in
20 my first report and in my supplemental report and the
21 calculation of claimant branch sizes for my first report
22 was done about nine months ago, and for my supplemental
23 report, I have looked it up, and the calculations were
24 done six months ago. And I will admit, I had not gone
25 back and refreshed my memory about these before Tuesday

3

1 but obviously I did so yesterday.
2 There are two issues on which I would like to
3 correct my evidence. One is the factor 1.7 where, as
4 you recall, we were discussing the distinction
5 between -- what are they called -- customer sessions and
6 transactions, and I mentioned I was uncertain about this
7 factor 1.7. And I shouldn't really have mentioned that
8 because the uncertainty I had about the factor 1.7 was
9 some time earlier than my first report, and by the time
10 of my first report I had satisfied myself in my mind
11 what the factor 1.7 was and it has nothing to do with
12 the distinction between transactions and customer
13 sessions.
14 Now, my opinion at the time of my first report was,
15 and it is now, that there are three terms in use. There
16 are customer sessions, there are transactions and there
17 are baskets, and my opinion is they all refer to the
18 same thing. And particularly if you look at all the
19 stuff there is about recoverable transactions and
20 cancellable transactions, it becomes quite clear to me
21 that a customer session is the same thing as
22 a transaction.
23 Now, the figure 1.7 was a figure I had come across
24 earlier in a document which I think is TD Arc 0039, and
25 I think it is called Horizon Architecture Summary, or

4

1 something. We could go to that. But the reference to
 2 that is 1.7 is the average number of products which
 3 a customer buys in a basket and we could find that
 4 reference if you like .
 5 MR JUSTICE FRASER: So the first correction is the 1.7 that
 6 you referred to on Tuesday is the average number of
 7 products which a customer buys in a basket.
 8 A. Yes, it is nothing to do -- and I believe that customer
 9 session and transaction is the same thing. So that is
 10 the first correction.
 11 MR JUSTICE FRASER: And the second correction?
 12 A. The second correction is a sort of history one, that
 13 Mr Green took me to the Angela Van Den Bogard
 14 spreadsheet and pointed out that there are only I think
 15 496 lines in the spreadsheet whereas there are 561
 16 claimants, and so this would make a difference of
 17 approximately factor 10 -- 10%, sorry, a difference of
 18 10% approximately to the answer.
 19 Now what I would like to clarify there is that in my
 20 first report I did make a mistake. I did not take
 21 account of the fact that there were only 496 lines in
 22 the spreadsheet but there are 561 claimants. Now,
 23 I have since gone back and looked at the calculation
 24 which I made on December 28th, I got the spreadsheet for
 25 the supplemental report, and it is evident from that

5

1 spreadsheet that I did the summation of the number of --
 2 it is a different calculation because it is three
 3 different years and it is done differently and so on,
 4 but it is evident from the spreadsheet that for each of
 5 those years I actually did the sum of the number of rows
 6 in the spreadsheet, so I corrected that error.
 7 So the result was that while I thought the
 8 difference, the change in my answer from 0.37 to 0.45,
 9 which is a 21% change, I think, while I thought that
 10 change arose from my change of method, in fact it arose
 11 partly from my correcting that error.
 12 MR JUSTICE FRASER: Right, Mr Green.
 13 MR GREEN: Well, we may have to come back to some of those
 14 points.
 15 A. Absolutely yes.
 16 Q. Let's start with a simple one. You are saying now that
 17 you have reflected overnight on what was put to you
 18 yesterday about the difference between transactions and
 19 sessions?
 20 MR JUSTICE FRASER: Tuesday.
 21 Q. Sorry, yes, on Tuesday, about the difference between
 22 transactions and sessions, that they are the same?
 23 A. I believe and I believed at the time of my first report
 24 that they are the same, yes.
 25 Q. And the problem with thinking something that's

6

1 completely wrong is that it undermines the basis of any
 2 calculations that you thereafter make on that basis, in
 3 theory, if you were wrong?
 4 A. I had an uncertainty in my mind well before my first
 5 report. What I'm saying to the court is that by the
 6 time of my first report that uncertainty was cleared up
 7 and is my current opinion.
 8 Q. I'm struggling slightly, Dr Worden, to make sense of
 9 this.
 10 Can you tell the court now whether you enquired into
 11 that difference specifically and found out the answer
 12 with confidence before you gave evidence today -- before
 13 you gave evidence on Tuesday?
 14 A. When I gave evidence on Tuesday I had done those
 15 calculations nine months before, I hadn't gone back and
 16 revised it, and I said in court that my memory was
 17 unclear of the time order.
 18 Q. No, no. I'm talking about the distinction between
 19 sessions of transactions.
 20 A. Yes.
 21 Q. Now, had you, before you came to court on Tuesday, at
 22 any time satisfied yourself of the distinction between
 23 transactions and sessions and found there was none?
 24 A. Yes, before my first report.
 25 Q. Before your first report?

7

1 A. Yes.
 2 Q. And how did you do that?
 3 A. Well, I considered the nature of recoverable
 4 transactions and cancellable transactions, which in my
 5 mind addresses all the cases.
 6 Q. Well, that came up in the case of Mrs Burke, didn't it?
 7 A. It comes up in all sorts of places. It is a very
 8 important issue of the trial.
 9 Q. Yes, and so a proper understanding of that issue and
 10 whether or not a transaction is the same as a session
 11 would be necessary to any properly formed opinion about
 12 the problem, wouldn't it?
 13 A. No. Proper understanding of a transaction is necessary
 14 for understanding of recoverable transactions and
 15 cancellable transactions. On that basis, I concluded
 16 before my first report that a transaction and a customer
 17 session are the same thing.
 18 Q. So why would there be this reference to 1.7 in
 19 a document that you had previously seen but hadn't
 20 mentioned before Tuesday?
 21 A. Because my memory was confused and I recall that at some
 22 time in the past I had been concerned about this figure
 23 of 1.7, and not having gone back and recalled the
 24 history of my calculations of customer branch size
 25 I mistakenly associated the factor 1.7 with this issue,

8

1 and that was my mistake in evidence which I have
 2 corrected.
 3 Q. Okay. Let's look at {F/1461/1}, please. The F bundle
 4 takes a moment to load so it will come up in a second.
 5 (Pause)
 6 This is a receipt in Mrs Burke's case.
 7 A. Yes.
 8 Q. You will see about halfway down the receipt,
 9 "Disconnected session", do you see that?
 10 A. Yes.
 11 Q. In capitals?
 12 A. Where are we?
 13 Q. Halfway down, "Disconnected session". Do you see that?
 14 A. This is a disconnected session receipt, yes.
 15 Q. Then it says:
 16 "Do not attempt to reverse any transaction from this
 17 session."
 18 A. Yes.
 19 Q. They are not the same?
 20 A. The word "transaction" gets used in lots of ways and
 21 obviously here a transaction means a part of what
 22 a customer did, and that's a different sense of
 23 transaction from recoverable transaction which is
 24 a whole thing. This is a recoverable transaction that
 25 had to be recovered.

9

1 Q. Not the same?
 2 A. No, there are different uses of the words "transaction".
 3 There is the technical use in terms of computer systems,
 4 there is the use in terms of Horizon, and there is
 5 probably the use that subpostmasters have. But it is my
 6 opinion that a transaction as recorded on Horizon -- it
 7 is my opinion that statistics on customer sessions are
 8 recorded on Horizon and they are synonymous with
 9 transactions, Horizon transactions.
 10 Q. You got the statistics for the number of transactions
 11 from Angela Van Den Bogard's witness statement, didn't
 12 you?
 13 A. From various places. I think there are various
 14 documents which also have transaction volumes in them.
 15 Q. But you took -- you said it was in her second witness
 16 statement, it was actually in her first.
 17 A. For the claimants' branches I got them from her witness
 18 statements. For the mass of branches I got them from
 19 various places.
 20 Q. That is not right actually. You say you took the
 21 figure, the 48 million -- we went through this on
 22 Tuesday -- from Angela Van Den Bogard's witness
 23 statement and note Mr Coyne used the same figure. On
 24 Tuesday I put to you that actually it is her first
 25 witness statement, it is 47 million, and Mr Coyne says

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1 47 million. That's what I put to you on Tuesday. Do
 2 you accept that?
 3 A. I remember that distinction --
 4 Q. Right. Let's look at Angela Van Den Bogard's second
 5 witness statement at paragraph 14.2 at page {E2/5/4}, I
 6 think.
 7 MR JUSTICE FRASER: Which paragraph?
 8 MR GREEN: 14.2.
 9 MR JUSTICE FRASER: I think it does start on page {E2/5/4}.
 10 MR GREEN: I'm most grateful. You can see there, halfway
 11 down, on the left-hand side:
 12 "If there is a payment due to or from the
 13 customer --"
 14 A. Sorry, I haven't got there yet.
 15 Q. About halfway down on the left-hand margin:
 16 "If there is a payment --"
 17 A. Sorry, I just haven't found it. Ah, right down at the
 18 bottom. Halfway down the last paragraph. I was looking
 19 halfway down the page.
 20 MR JUSTICE FRASER: I think, Dr Worden, if you look at
 21 paragraph 14.2 and count down six lines from the top of
 22 that paragraph.
 23 A. Yes, I have got it now. Thank you.
 24 MR GREEN: You will find the words:
 25 "If there is a payment due to or from the customer,

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1 the session (ie the transaction or transactions sitting
 2 in the stack that have not been completed) is settled to
 3 cash and a receipt is automatically printed."
 4 A. Yes.
 5 Q. That is the witness from whom you took the figure for
 6 the number of transactions, isn't it?
 7 A. I took from her spreadsheet, yes. As I say, there are
 8 various uses of the word "transaction" in currency and
 9 I felt that the only thing that could be automatically
 10 measured by Horizon was the number of transactions which
 11 are the same as customer sessions. Now if I'm mistaken
 12 about that, I was mistaken at the time of my first
 13 witness statement, but I still -- it is still my opinion
 14 that a transaction and a customer session, particularly
 15 from the definitions of recoverable transaction.
 16 A recoverable transaction consists of a customer session
 17 in which all these things happen, and then it goes wrong
 18 when some contact has been made with the bank, and the
 19 whole recoverable transaction has to be recovered. And
 20 that's the sense in which I think a transaction is the
 21 same as a customer session.
 22 Q. Dr Worden, I'm going to suggest to you that you were
 23 embarrassed at what we saw on Tuesday and what you have
 24 just come up with this morning is an answer of
 25 convenience to cover up your embarrassment?

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1 A. That's not the case.
 2 Q. We will return to some of the other points later on that
 3 you have canvassed this morning but for present purposes
 4 can we start again at {C1/1/1}, please.
 5 A. Yes.
 6 Q. Now, Issue 1(b) on the Horizon Issues --
 7 A. 1(b) yes.
 8 Q. Yes?
 9 A. Mm.
 10 Q. Is:
 11 "The extent to which it was possible or likely for
 12 bug, error or defects ... to have the potential to (b)
 13 undermine the reliability of Horizon accurately to
 14 process and to record transactions ..."
 15 Yes?
 16 A. Yes.
 17 Q. And you chose to answer Issue 1(b) separately in your
 18 reports?
 19 A. That is right. It is some subsection of 8.
 20 Q. If we look at paragraph 574, please, at {D3/1/138}.
 21 A. It is worth my getting this one out. 574? Oh.
 22 Q. On page 138.
 23 A. Part (b), yes.
 24 Q. Do you have 574 there, Dr Worden?
 25 A. I have it there, yes.

13

1 Q. I'm really taking you to this just to be fair to you, to
 2 re-orient you in your report where you dealt with it.
 3 Okay?
 4 A. Mm.
 5 Q. So 574 is your summary where you say:
 6 " ... the Horizon core audit process was designed to
 7 create a secure, accurate and immutable record of what
 8 was entered into Horizon at the branch, and to record
 9 verifiably who entered it."
 10 Yes?
 11 A. Yes.
 12 Q. "In my opinion, regardless of any other processing done
 13 in other parts of Horizon, the core audit database was
 14 an accurate record of transactions entered in the
 15 branch. It was carefully designed, and I have seen no
 16 evidence that it ever failed in service. Therefore in
 17 any case of doubt about processing done in other parts
 18 of Horizon, this record was available to establish the
 19 true state of any branch accounts, based on transactions
 20 entered in the branch."
 21 Yes?
 22 A. Yes.
 23 Q. And that's the substance. Then you deal with it as
 24 being a highly reliable record at page {D3/1/191},
 25 paragraphs 848 to 850.

14

1 A. Sorry, are we coming to that? Yes. Okay. Part (b)
 2 again. Right.
 3 (Reads to self)
 4 Right.
 5 Q. Yes? And you explain that we actually have to go back
 6 to two different parts of the report from there, at 849?
 7 A. Sorry, can I get to that?
 8 Q. Yes. We are looking at it.
 9 A. In 4.4 and 6.2.6 I describe the audit system, right.
 10 Q. Yes? You say "highly reliable record of transactions
 11 entered" into the branch, yes?
 12 A. Yes.
 13 Q. And that's your robustness countermeasure of secure
 14 kernel hardware?
 15 A. Yes, and we talk about the secure chain of
 16 communication.
 17 Q. Indeed. Okay? Then from there to get to 4.4 we go to
 18 pages 45 to 48 {D3/1/45}.
 19 A. So we've got more about the audit database here.
 20 Q. Exactly. And it is 173 to 179.
 21 A. 179? Right, okay.
 22 Q. Can we pause on that -- sorry, my fault entirely --
 23 A. So they are the pictures. Yes, okay.
 24 Q. But just pausing there, we see again the phrase in the
 25 second line of 173, "an accurate and immutable record",

15

1 don't we?
 2 A. Yes.
 3 Q. Yes. And then we -- "of any activity which can affect
 4 the branch accounts"?
 5 A. Yes.
 6 Q. And then at section 6.2.6, which is on page {D3/1/73},
 7 paragraphs 267 to 271 is where you deal with it again.
 8 A. Again.
 9 Q. Just to trace through. I would like you to look,
 10 please, if you would, at paragraph 270.
 11 A. 270. Yes, okay.
 12 Q. It is over the page on page {D3/1/74}.
 13 A. "... KELs indicates that use of the audit database was a
 14 backstop, and rarely used ..."
 15 Yes.
 16 Q. Now, you have drawn an inference there about the reason
 17 for not using the audit database?
 18 A. Yes.
 19 Q. That's actually a matter in dispute between the parties,
 20 isn't it?
 21 A. Well, Mr Coyne suggested the audit database should have
 22 been used more and differently and that is a difference
 23 between the experts, yes.
 24 Q. But when Mr Coyne suggested that, it was positively put
 25 to him that it was quite expensive and labour intensive

16

1 as a justification for not using it?
 2 A. Not using it for every TC, I believe that is
 3 a justification, yes, but every TC and every bug is
 4 a different matter.
 5 Q. Let's look at Day 15 of the transcript, if we may,
 6 please, {Day 15/71:21}.
 7 A. Page?
 8 Q. We are looking at page 71, line 21.
 9 A. "... labour intensive ... expensive ..."
 10 He says he can't imagine why it would be labour
 11 intensive.
 12 Q. Do you remember listening to that?
 13 A. Yes, I think I can --
 14 Q. We can see on the same screen at the bottom of 73:
 15 "Question: And the charge that's made over the
 16 allowance of 720 a year, it is over £200, are you aware
 17 of that?"
 18 Do you remember --
 19 A. Yes, I've always been aware of this figure in the
 20 ballpark of £250, yes.
 21 Q. So the figure you have always had in mind is £250?
 22 A. Something like that.
 23 Q. In that ballpark.
 24 Let's pause there. It seems that -- it appears to
 25 be agreed that the allowance for ARQ requests was 720

17

1 a year?
 2 A. I don't recall a precise figure but I am sure you are
 3 right.
 4 Q. I can just show you quickly, {E2/8/4}. That's the
 5 witness statement of Ms Mather at {E2/8/4}. You will
 6 see at paragraph 19 -- yes?
 7 A. Yes, number of ARQs.
 8 Q. She says that she has spoken to a colleague called
 9 Christopher Knight who has confirmed that Post Office
 10 gets an allowance of 720 data queries a year, yes?
 11 A. Yes.
 12 Q. "He is not aware of any fees or penalties having been
 13 paid by Post office, nor anyone being deterred from
 14 making ARQ requests because of fees that might have to
 15 be paid ..."
 16 Just focusing on the number at the moment.
 17 A. Yes.
 18 Q. 720 appears to be right. Let's look please at
 19 {F/1092/1}. You can see underneath "Financial Benefits"
 20 the second point:
 21 "ARQ ... retrieval process ..."
 22 A. Yes.
 23 Q. And you can see 720 requests there, can't you?
 24 A. This is subsumed without breakdown.
 25 Q. Yes. But you can also see there that the figure that's

18

1 referred to there is £450 --
 2 A. Yes.
 3 Q. -- per unit, can't you?
 4 A. Yes. Well, I think it's the division gives that answer.
 5 Is that right?
 6 Q. Well, let's take it in stages. What was put to Mr Coyne
 7 without any document or any particular basis was the
 8 figure was over £200?
 9 A. Well, I think -- I would imagine there are two different
 10 figures. In other words, there is a bulk price for your
 11 first 720 and that works out. You have paid that
 12 already and you can get 720 for that, and so the average
 13 of those is that much. Then if you go beyond that, for
 14 each one you pay a different figure.
 15 Q. And you think the £200 is the extras?
 16 A. I suspect so, yes. But there are those two figures and
 17 I haven't really gone into the detail of that because
 18 250/450, you know, it doesn't seem to me hugely to
 19 influence my opinion --
 20 Q. It is just a bit more than double, isn't it?
 21 A. Yes.
 22 Q. And that's not an order of magnitude that would bother
 23 you from an engineering perspective --
 24 A. -- it's not a thing that feeds into any of the numbers
 25 I have tried to calculate really.

19

1 Q. But it might feed into whether or not cost was
 2 a disincentive to seek ARQ requests?
 3 A. Well, as I say, the issue Mr Coyne raised was seeking
 4 ARQs for every TC, in other words 100,000 a year, and
 5 that's rather different from seeking evidence for
 6 a suspected buyer.
 7 Q. Well, what about -- if we just focus at the moment on
 8 looking at ARQ data where in every case the
 9 subpostmaster queries the transaction.
 10 A. Yes.
 11 Q. If the cost was half, you would be able to get twice as
 12 many, wouldn't you, for the same amount?
 13 A. For the same budget, if you choose the same budget on
 14 that, yes.
 15 Q. Yes. So it makes a bit of a difference?
 16 A. Yes, I agree it does.
 17 Q. And --
 18 A. But as I say, my impression is ARQ, you know, is
 19 a backstop basically. And normally one can investigate
 20 these issues without going to ARQs and one can arrive at
 21 a position of understanding what happened without going
 22 to the ARQ because MISs are designed to do that.
 23 Q. Let's take it in stages, if we may. Just eyeballing the
 24 figure of 384,000 and dividing by 720, that's actually
 25 about £533, isn't it?

20

1 A. Oh really? Right, yes, okay.
 2 Q. And what was put to Mr Coyne was it was over £200?
 3 A. Mm.
 4 Q. Would you say that's consistent with it being 450 or
 5 533?
 6 A. Well, it is consistent -- consistent to me means not
 7 contradictory --
 8 Q. Yes, so it is consistent?
 9 A. And that's consistent, yes.
 10 Q. So it is literally consistent but quite misleading for
 11 purposes of trying to work out whether it is
 12 a disincentive, isn't it?
 13 A. I'm not sure who is misled.
 14 Q. I'm just saying if someone is saying cost is a
 15 disincentive because you are charging over £200, it
 16 doesn't really tell the whole story if the true price is
 17 450, 436 or 533, does it?
 18 A. But the 450 was paid upfront so, you know, however many
 19 you go towards your 720, it doesn't make a difference
 20 what Post Office paid, so it wasn't a disincentive for
 21 them.
 22 Q. Dr Worden, you are making it up as you're going along.
 23 A. I'm not. I'm answering your questions as you put them
 24 to me.
 25 Q. The true answer is you have no ideas about these figures

21

1 and you're guessing what they might be.
 2 A. No, I'm not. I'm answering your questions.
 3 Q. You don't know any of this.
 4 A. I'm trying to answer your questions --
 5 Q. I understand --
 6 A. -- on an issue I have not looked at in great depth.
 7 Q. That's rather the point. I'm not disputing you are
 8 trying to answer the questions, I'm putting to you that
 9 you have no foundation for doing so. Do you agree with?
 10 A. My knowledge of the price of ARQs is not very precise
 11 because I haven't focused on them in my -- that price in
 12 my reports. So I'm trying to do the best I can to
 13 answer your questions.
 14 Q. It is perfectly okay to say "I have no idea about that".
 15 A. That wouldn't be true.
 16 Q. Then what idea do you have?
 17 A. I have an idea that I have seen some of these figures
 18 and I know it is in the ballpark of £250/£300 --
 19 Q. Yes, but let's focus on a particular thing that you have
 20 given evidence about. You say there is a distinction
 21 between the ones you get all paid for in advance, which
 22 you were saying would be the £200 price, £200 a unit?
 23 A. No, the ones you get more for in advance are the £450 --
 24 Q. Sorry, quite right. And you say you pay £200 for the
 25 additional ones?

22

1 A. That's been my understanding, yes.
 2 Q. Where do you get the £200 for the additional ones from?
 3 A. I can't recall exactly. My understanding of these
 4 things builds up from all sorts of documents I read and
 5 I can't, I'm afraid, always point to say: this document
 6 is where I got it.
 7 Q. Well, I'm positively putting to you, Dr Worden, that you
 8 are giving answers that you think are consistent with
 9 what has been put as part of Post Office's case rather
 10 than from any actual facts you have?
 11 A. That is not true.
 12 MR JUSTICE FRASER: I'm going to ask a question to clear it
 13 up and then I'll ask Mr Green to move on.
 14 In the last couple of minutes you have mentioned
 15 a number of different prices and I just want all costs.
 16 I think you said £200 and at one point you said ballpark
 17 £250 to £300. Do you know how much the requests in fact
 18 cost?
 19 A. I don't know in detail. The figure I have always had in
 20 mind is ballpark 250.
 21 MR JUSTICE FRASER: Mr Green.
 22 MR GREEN: If we look please at {F/994.1/2}, this is
 23 an email which is at or about the same time as the 2012
 24 document we were looking at a moment ago.
 25 A. Right.

23

1 Q. And you will see on that second page, if you come
 2 two-thirds of the way down, do you see "Monthly
 3 Reporting"?
 4 A. Yes, I see that paragraph.
 5 Q. Okay. Just below that:
 6 "We have always worked on the belief that a single
 7 ARQ costs now about £450 each ..."
 8 Do you see that?
 9 A. Yes.
 10 Q. Just pausing there. The first point is that
 11 an organisation is going to take its decisions based on
 12 the beliefs it has whether they are right or not, aren't
 13 they? If everyone believes it costs about £450 --
 14 A. That seems to have been the consensus view amongst
 15 various people in Post Office, I'm not sure what
 16 population of people it is.
 17 Q. Okay. This is what is said by Mr Laycock here. He
 18 says:
 19 "... in that I have costs from 2004 that identified
 20 an uplift of an additional 390 at a cost of £170,000."
 21 A. Yes.
 22 Q. "This indicates a large unit cost of £436 per
 23 enquiry ..."
 24 A. I take it that the division works.
 25 Q. It does, I think it is 435.8.

24

1 "So the cost we have assumed now to be in the region
2 of £450 ..."
3 And then:
4 " ... although Sue has stated 'there is provision in
5 the contract to increase the maximum number of queries
6 and if we do so the charge would be £207 per query.'
7 So if they were to change the contract they would be
8 able to get additional ARQs much more cheaply?
9 A. Yes, this is sort of buy more get a discount.
10 Q. So would you accept, first of all, that this appears to
11 be the position that they were working on?
12 A. Yes. I mean this is a snapshot of what they thought at
13 a certain time.
14 Q. Right. Let's go, please, if we may, now to {F/728/1}.
15 This begins at the back of this change. This relates
16 to --
17 A. This is 2010. What was the last one?
18 Q. 2012?
19 A. So this is a bit earlier.
20 Q. This is a bit earlier. This begins at the back of the
21 chain. I will take you, if I may, to the last actual
22 text which is on page {F/728/12}, other than
23 Michele Graves' name and contact details.
24 A. So this is at the bottom. It starts with the first or
25 the last in the chain, sorry?

25

1 Q. Now, do you see the second paragraph of the "Hi Lin"
2 email?
3 A. Sorry, could I ask, this is an email chain where the
4 first email is at the bottom?
5 Q. Yes, it is.
6 A. Right, okay.
7 Q. The second paragraph under "Hi Lin" at the bottom:
8 "Moving forward, can you confirm what your next
9 steps are re the points she has raised. I know you are
10 waiting for the audit trail of the transaction events.
11 Re the comment about the two auditor visits monitoring
12 her work and apparently also having a problem with the
13 figures, are you obtaining a report from the auditor? If
14 this escalates we will need to answer the apparent
15 discrepancies in the figures on his laptop & horizon."
16 A. Yes.
17 Q. Pausing there, that's a reference to the fact that the
18 auditor had figures on his laptop that he had worked out
19 that were different from the ones on Horizon?
20 A. Yes, and presumably he had done this by making a visit.
21 Q. Yes.
22 A. Right. Okay.
23 Q. So there is a discrepancy between the figures the
24 auditor thinks Horizon should show and what's on
25 Horizon.

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1 A. Yes.
2 Q. And they are asking about whether they are getting
3 a report. If we go up to the email above --
4 A. "I have changed it slightly."
5 Do you know what "it" is?
6 Q. Let's just focus on the next paragraph:
7 "In terms of the points raised we do have a report
8 from the auditor but it is probably not detailed enough
9 to cover all the points, so we will probably need to go
10 back on this as part of the contractual case. In terms
11 of the audit trail via Horizon we are waiting for Mark
12 Dinsdale to authorise the case as he holds the budget.
13 "Nigel has today referred the case to Jason Collins
14 requesting their involvement given the level of losses -
15 I will forward e-mail separately. Need to see where this
16 gets us before we can move the case forward or start to
17 answer her detailed questions."
18 A. Yes.
19 Q. So you can see the genesis of this.
20 A. Okay.
21 Q. So this is a classic case where the ARQ data might well
22 be helpful, isn't it?
23 A. It looks like it. It looks they are considering getting
24 the ARQ data, yes.
25 Q. And it is particularly acute, the need for the ARQ data

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1 here, because you have got the subpostmaster asking
2 detailed questions and challenging what's being shown.
3 You have got an auditor with figures that he says should
4 be on the system?
5 A. Yes.
6 Q. And those are differing from Horizon?
7 A. Let me check --
8 Q. That's the premise of this enquiry?
9 A. The differing from Horizon, yes, that was in some
10 previous paragraph.
11 Q. Yes exactly, just setting the stage. So this is
12 a particularly important example of when you might wish
13 to seek ARQ data to resolve what's happened?
14 A. It sounds like it, yes.
15 Q. That's reflected on page {F/728/11}, if we go back to
16 that.
17 A. Yes. We are on 12 now. Go to 11. Yes.
18 Q. "Thanks Lin:
19 "Have made suggested changes & sent:
20 "If we can encourage Mark Dinsdale to authorise the
21 audit trail, I feel it would be beneficial given the
22 current interest in Horizon from media & MP's."
23 A. Right.
24 Q. Now, was it your impression when you drew the inference
25 in your report that they would get the audit data if

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1 they needed it? Was it your impression that they would
 2 be tipped over the edge into trying to get it if there
 3 was media interest or interest from MPs?
 4 A. I wasn't concerned with that.
 5 Q. No?
 6 MR JUSTICE FRASER: I think he answered two questions
 7 together there, Mr Green. I wonder if you could put
 8 them separately.
 9 MR GREEN: I'm grateful.
 10 Dr Worden, did you think that Post Office would only
 11 think about getting ARQ data because of interest from
 12 media and MPs when you were looking at the inference you
 13 drew?
 14 A. Which inference?
 15 Q. The inference that the reason they didn't get ARQ data
 16 was because they had every other information source they
 17 needed?
 18 A. Well, we must distinguish between -- what I was mainly
 19 looking at was investigating potential bugs and
 20 mysteries, and that is a mixture of Post Office and
 21 Fujitsu. I was certainly not concerned with Post Office
 22 business decisions about whether media attention or
 23 political attention made it more important or not.
 24 I was not concerned with that.
 25 Q. Because here, Mrs Stubbs' case, not only have we got the

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1 problem itself, militating in favour of getting ARQ
 2 data, but on top of that we have got an extra layer that
 3 they seem to be giving weight to on the face of that of
 4 current interest in Horizon from media and MPs, haven't
 5 we?
 6 A. Yes.
 7 Q. So that is a further reason for them to be apparently
 8 motivated to get it. Let's go, please, now forward to
 9 page {F/728/9}.
 10 A. Right, we are moving back, so this is --
 11 Q. There is an email from Mark Dinsdale, do you see that?
 12 A. Right, and he says it'll take three weeks, yes.
 13 Q. That's not really the point, is it, because if we read
 14 on it says:
 15 "Has Jason agreed to take this case on, because we
 16 don't hand over Horizon logs to a spmr."
 17 A. Where are we?
 18 Q. Just after "3 weeks" where you stopped reading.
 19 A. Yes, he says that.
 20 Q. Why would they not give Horizon logs to a SPM who was
 21 concerned about discrepancies in their branch?
 22 A. I don't know. I haven't looked at it.
 23 Q. "It needs an expert to understand what it says, and
 24 usually this requires one of the investigators."
 25 A. Yes, um --

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1 Q. "I'll give Jason a call in the morning ..."
 2 I will just read it to you and then ask you
 3 questions, if I may?
 4 A. Yes.
 5 Q. "... then I will raise an ARQ from Fujitsu."
 6 Then he says this:
 7 "Is this for our benefit, as there is a cost
 8 attached to ARQ requests, we do get a supply free of
 9 charge as part of the contract but we usually don't have
 10 enough, therefore we usually charge the defence
 11 lawyers."
 12 A. Yes.
 13 Q. Cost was a disincentive for Post Office based on this
 14 email, wasn't it?
 15 A. Well, I mean on this email they are saying we charge the
 16 defence lawyers, so it is not actually a cost for them,
 17 but I have to read this email carefully to answer that
 18 question.
 19 MR DE GARR ROBINSON: My Lord, I do rise to ask whether this
 20 line of cross-examination is productive with this
 21 witness? He is an expert giving evidence about the
 22 operation of the Horizon system, and my learned friend
 23 wishes to put a story to him, but isn't this a matter
 24 best left for submissions rather than taking time up in
 25 cross-examination?

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1 MR JUSTICE FRASER: Well, as you know from last week I am
 2 relaxed about how counsel uses their time, but you are
 3 correct, that last question was in fact submission
 4 because it was asked about the thought processes within
 5 the Post Office.
 6 So Mr Green, if you would like to put the point
 7 based on this expert's view of cost incentive or
 8 disincentive. And the point, as Mr de Garr Robinson
 9 says, effectively boils down to one of submission, so
 10 I would not necessarily spend very long on it, but as
 11 you found out last week I will let both of you during
 12 your cross-examination spend as long as you want on any
 13 points you might think are useful to each of you.
 14 MR GREEN: I'm grateful.
 15 You didn't consider this before you formed the view
 16 that you have expressed in your report, did you?
 17 A. No, because -- I didn't consider it -- I didn't see this
 18 email chain before I formed my view.
 19 Q. You accept that what you have seen here would be
 20 relevant to forming the inference that you have
 21 expressed in your report, wouldn't it?
 22 MR DE GARR ROBINSON: Which inference? Could you --
 23 MR GREEN: The inference which was the beginning of this bit
 24 of the cross-examination about the reason for not
 25 looking at ARQ data.

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1 A. Can we go to that inference? That was that MISs were
 2 normally sufficient for the purpose, I think.
 3 Q. Right.
 4 A. And what did I say in my report that we are referring
 5 to?
 6 Q. Let's look back. Paragraph 270 on page {D3/1/74}.
 7 A. 270:
 8 "... audit database was a backstop, and rarely used
 9 ..."
 10 Yes.
 11 "... other comparisons of data were usually
 12 sufficient to diagnose the problem."
 13 That was my inference, yes.
 14 Q. And I positively put to you that was an inference you
 15 drew, yes?
 16 A. Yes.
 17 Q. And you drew the inference about the reason for not
 18 looking at the audit database?
 19 A. That was a technical inference based on quality of data.
 20 Q. I'm going to suggest to you, Dr Worden, that you and
 21 Mr Coyne found that the audit data was very rarely
 22 referred to. That's agreed?
 23 A. I think so, yes.
 24 Q. And you felt the need to explain that away, and that's
 25 why you said there that it was:

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1 "... because other comparisons of data were usually
 2 sufficient to diagnose the problem."
 3 A. I would not put it as explain away. I was trying to put
 4 in context the way audit data was used and I felt that
 5 was part of the description.
 6 Q. Having seen the documents I have just put to you, do you
 7 accept that the cost of these was a disincentive to
 8 Post Office using the ARQ data which you should have had
 9 regard to, or now do accept you will have regard to, in
 10 relation to that issue?
 11 A. My view has always been that in the context of TCs, the
 12 cost of retrieving ARQ data would be a disincentive
 13 because they need 100,000 TCs a year and it would have
 14 been prohibited.
 15 Q. I'm asking you about what I have shown you and I have
 16 given you the example of Mrs Stubbs, who was not dealing
 17 with TCs, she was dealing with problems with her branch
 18 accounts, and I have shown you the other documents.
 19 Last chance. Do you accept that it appears on the
 20 face of these documents for the purpose of any such
 21 inference that cost was a material disincentive?
 22 A. It appears from these documents it was, yes.
 23 Q. Thank you.
 24 Now, we had disclosed on the Tuesday before the
 25 trial started some further ARQ data, that's 28th May,

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1 which was described as going back to 2004. There is
 2 a year missing from that which is still being pursued,
 3 so I may have to come back to that with you, Dr Worden.
 4 But you hadn't looked yourself at the number of ARQ
 5 requests made in any particular year, had you?
 6 A. No.
 7 Q. You heard Mr Coyne's evidence about system design,
 8 didn't you?
 9 A. Yes.
 10 Q. And just stepping back for a moment, it seems that
 11 Fujitsu had negotiated for themselves a contract where
 12 Post Office couldn't actually see the data in the audit
 13 store or read it in real time. That is correct?
 14 A. The audit store, yes.
 15 Q. It could not be read in real time?
 16 A. That is right, not designed --
 17 Q. And that was the arrangement?
 18 A. Well, that was the business requirement that apparently
 19 Fujitsu and Post Office had agreed.
 20 Q. That's what they agreed. And I think we saw in the
 21 Peter Laycock email we went to earlier, I didn't point
 22 it out to you, but they were paying about £11 million
 23 a year for their data centre and ARQ service and it was
 24 from that budget that the ALQs were provided.
 25 Nonetheless there was a limited number of requests they

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1 could make and they had to pay about £450 or so they
 2 thought. So that is where we got to, yes?
 3 The matter that was being put to Mr Coyne was that
 4 it was expensive and therefore it was reasonable not to
 5 do it. That's a consequence of the way the relationship
 6 has been designed and what they have agreed, isn't it?
 7 A. Well, to my mind it is the consequence of the fact that
 8 there are 100,000 TCs a year --
 9 Q. I'm not talking about doing it to every TC, I'm just
 10 talking about whether you have access to read the audit
 11 data, and I'm saying what we have established was the
 12 position, you would fairly accept, of the consequence of
 13 the way the arrangement had been set up between
 14 Post Office and Fujitsu --
 15 A. It is a consequence of the way the Post Office had
 16 defined their business requirements, and Fujitsu and
 17 Post Office had agreed requirements and had built the
 18 Horizon system this way. It was a consequence of that.
 19 Q. Yes. So it is a consequence of the design and build of
 20 the system --
 21 A. Yes.
 22 Q. -- based on the business requirements that Fujitsu and
 23 Post Office had agreed between themselves?
 24 A. Yes.
 25 Q. And if we look, please, at Day 15 of the transcript at

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1 page 87 {Day15/87:1}. I'm going to ask you to --
 2 A. 87?
 3 Q. Yes, page 87. If you look at lines 1 to 14.
 4 A. Yes, can I read all that through? (Pause)
 5 (Reads to self)
 6 Yes.
 7 Q. You have heard of the acronym WORM, haven't you?
 8 A. Yes.
 9 Q. What does it mean?
 10 A. Write once read many.
 11 Q. And that's not an idiosyncratic acronym of Mr Coyne,
 12 that's a standard industry --
 13 A. No, I think that is pretty common.
 14 Q. Pretty common?
 15 A. Yes.
 16 Q. Mr Coyne says there, when it is put to him that it has
 17 to be cracked open hundreds of times a day, the separate
 18 seal core audit store, His answer is:
 19 "Answer: I think the word 'sealed' is misleading
 20 and the concept of cracking something open to get access
 21 to it I think is misleading as well.
 22 "Things in an audit store are only -- can be written
 23 to and only written to once, and the term that's often
 24 used is write once read many, WORM. So the process is
 25 written to once, but people can read from that store on

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1 many occasions."
 2 Now, that is not an uncommon system for that kind of
 3 data, is it?
 4 A. I think it is fairly common, yes. I'm not --
 5 Q. Hence the acronym, actually?
 6 A. Yes.
 7 Q. And if we look at page {Day15/84:6} to line 14, you can
 8 see him, Mr Coyne, explaining the purpose of an audit
 9 store.
 10 "Answer: Well, the purpose of having an audit of
 11 what happens at branch counters is so that if there is
 12 a dispute over what has happened that somebody,
 13 presumably this will be Post Office, can have a very
 14 quick look at what happened and find out the truth.
 15 That's the purpose of having an audit store. There is
 16 no other reason for it other than looking back at what
 17 actually happened. It is my perception that that look
 18 back was available to people at the Post Office."
 19 A. Yes.
 20 Q. Yes? Now, that is right so far as it goes?
 21 A. Let me see.
 22 Q. Subject to cost etc and time to get the ARQs from
 23 Fujitsu?
 24 A. Sorry, can I read that paragraph again?
 25 (Reads to self)

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1 Now, "very quick look" is not what was intimidated.
 2 It is not what Horizon did.
 3 Q. Well, it was open to Fujitsu to at least look back when
 4 they eventually did get the ALQ data, wasn't it?
 5 A. Well, the business requirement had been stated and
 6 agreed that here is this audit store and it does these
 7 things. A quick look was not one of them.
 8 Q. Do you have any practical experience yourself of working
 9 in or designing audit stores for different systems?
 10 A. Let me think. Not this kind of audit store.
 11 Q. No, because Mr Coyne says he does at page {Day15/82:2}
 12 to line 14.
 13 A. Let's look at this. Page 82, line?
 14 Q. Do you see that?
 15 A. (Reads to self)
 16 Okay.
 17 "... they don't have to work in the way ..."
 18 Q. Yes. And he agrees with you, they are:
 19 "... often very easily accessible to be able to be
 20 read by certain users ..."
 21 Hence the WORM acronym.
 22 A. Sorry, what does he agree with me?
 23 Q. Well, do you agree with him that audit systems of the
 24 WORM type are:
 25 "... often very easily accessible to be able to be

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1 used by certain users ..."
 2 There's nothing inherently difficult about that if
 3 you design it that way?
 4 A. If the business requirement is that and you design it
 5 that way, then it is possible, yes.
 6 Q. Yes. And if you don't design the system that way, it is
 7 not?
 8 A. That is right, yes.
 9 Q. And if we look at {D3/1/102}, paragraph 400.
 10 A. Yes, right.
 11 Q. You say:
 12 "I have not had much personal involvement in
 13 building secure kernel software ..."
 14 MR JUSTICE FRASER: Which paragraph?
 15 MR GREEN: Paragraph 400:
 16 "... or computer security techniques, although I'm
 17 familiar with the underlying mathematical specification
 18 methods."
 19 And that's fair?
 20 A. I said it.
 21 Q. Now, just focusing on the gold standard or tamper-proof
 22 nature of the information in the audit store now. You
 23 have described it as a gold standard in your expert
 24 report?
 25 A. Yes.

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1 Q. And you say it is a highly secure and tamper-proof
 2 record of what's entered into Horizon at the counter,
 3 etc, as a gold standard for comparison for data held in
 4 other parts of the Horizon estate, etc, supporting the
 5 diagnosis of software errors.
 6 Now can we agree that the point where the accuracy
 7 of the audit store data matters is the point at which it
 8 is actually being looked at for comparison with what's
 9 there at the branch or on the auditor's laptop?
 10 A. Well, accuracy matters in any context it is used.
 11 Q. Okay, in any context it is used?
 12 A. I think so.
 13 Q. But you would accept that its accuracy matters within
 14 the audit store?
 15 A. Yes.
 16 Q. Because if it is wrong there it is just wrong?
 17 A. Yes.
 18 Q. And its accuracy matters when it is being looked at
 19 after it has been extracted, yes?
 20 A. Yes.
 21 Q. Because if it is not still as accurate as it was in the
 22 audit store you have got another problem?
 23 A. Yes.
 24 Q. Mr Dunks gave evidence on this, Mr Miletic
 25 cross-examined him on that. Were you there for that?

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1 A. I do not think I was, actually.
 2 Q. Can we look at {F/1716/43}, please.
 3 A. "Extraction client", right.
 4 Q. So this is a page of the audit extraction client user
 5 manual.
 6 A. Right.
 7 Q. And we want page 43, if we may.
 8 A. Could I just clarify. There are two stages in an audit
 9 extraction, there is getting the xml raw data out and
 10 then there is converting it to spreadsheets. Is this
 11 referring to both --
 12 Q. Well, it looks as if it is looking at the process
 13 overall but we will take it in stages.
 14 It says:
 15 "TMS and BRDB messages --"
 16 A. Sorry, where are we?
 17 Q. At the top of the page.
 18 A. Okay.
 19 Q. ""TMS and BRDB messages are numbered in sequence for
 20 each node. During filtering any retrieved audit message
 21 data is analyzed to determine what message sequences are
 22 present in the data and whether there are any gaps or
 23 duplicates in those sequences. A gap in a message
 24 sequence may indicate that a message is missing from the
 25 audit data."

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1 A. Yes.
 2 Q. "Duplicates may indicate that an audit file has been
 3 gathered twice."
 4 A. Yes.
 5 Q. Do you see that? And if you look at the actual dialogue
 6 box that would be on the screen, on the right-hand side,
 7 can you see "Gaps Found (shown in red)", and "Duplicates
 8 Found (shown in blue)"?
 9 A. Yes.
 10 Q. Then underneath that, do you see "Seek assistance from
 11 audit support"?
 12 A. Yes.
 13 Q. Then the text below the diagram or figure 27:
 14 "When gaps are found, the gaps are shown in red in
 15 the message ... list ..."
 16 And so forth.
 17 "When duplicates are found ..."
 18 And so forth?
 19 A. Yes.
 20 Q. Did anyone tell you or give you -- direct your attention
 21 to the transcript of Mr Dunks' cross-examination about
 22 this?
 23 A. No, I don't think so. I think I have read that
 24 transcript though.
 25 Q. Had you seen this document before you --

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1 A. I certainly looked at this document, yes.
 2 Q. This page?
 3 A. I'm not sure about this page. I was more concerned with
 4 the process of getting from the xml to spreadsheets and
 5 the different spreadsheets I might get out.
 6 Q. Let's pause. You would accept that this introduces
 7 a more complete aspect of the picture as to whether or
 8 not the audit data is a gold standard, doesn't it?
 9 A. It obviously clarifies understanding audit data, yes.
 10 Q. And the fair inference from the document is that gaps
 11 and duplicates do occur?
 12 A. No. I think the fair inference from the document is
 13 that if gaps and duplicates occur you should be
 14 concerned.
 15 Q. So you are not prepared to accept that the fair
 16 inference from this document is that gaps and duplicates
 17 do occur in the audit database?
 18 A. I do not think that's a fair inference. I think the
 19 fair inference is that they are not supposed to and if
 20 they do you should seek assistance.
 21 Q. So in fact even if you had seen this, it wouldn't have
 22 changed your view about gold standard, would it?
 23 A. No, it doesn't. I'm saying that gaps and duplicates are
 24 something to worry about, therefore raise the alarm.
 25 Q. Pausing there. If there were gaps or duplicates, they

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1 could arise on the journey of the data to the audit
 2 store to the point of being committed, couldn't they?
 3 A. Yes.
 4 Q. They could arise on the journey out of the audit store
 5 as a result of the extraction process itself?
 6 A. That sounds less likely but possible.
 7 Q. Possible but less likely. Or there could be some sort
 8 of bug, error or defect or form of remote access that
 9 might make the underlying data unreliable?
 10 A. What do we mean by that?
 11 Q. Well, let's just -- let's take for example the
 12 piggy-backing into the counter, and if you accept for
 13 a moment that if that means that a transaction can be
 14 done remotely that looks as if it is being done in
 15 branch, the data in the audit store is going to record
 16 what was shown in branch, which is that it was done in
 17 branch when in truth it was done remotely?
 18 A. Firstly, nobody has ever explained to me what
 19 piggy-backing is and I'm uncertain as to what
 20 piggy-backing means, it is not a technical term --
 21 Q. I understand, but I'm just asking you to assume that's
 22 what it means, not to challenge it.
 23 A. You say what's shown in branch. I mean ... I'm
 24 struggling with this question a bit. In other words,
 25 the audit store has been designed to record what

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1 happened in branch and normally that's what happens.
 2 Now you are asking me what else might have happened, and
 3 normally I would expect any process of remote access to
 4 branch accounts to record in the transactions, for
 5 instance with counter 32 as one mechanism, that
 6 something different had happened and therefore I would
 7 expect that to go to the audit store.
 8 Q. Let me put it this way, Dr Worden. If it didn't record
 9 that, that's what would go to the audit store?
 10 A. If there was a bug or a fault in the software that was
 11 used to piggy-back for instance, and piggy-backing did
 12 not leave a trace in transactions, then that would be
 13 the case.
 14 Q. If piggy-backing itself did not leave a trace in
 15 transactions that's what would show up in the audit
 16 store?
 17 A. Absolutely, yes, that is right.
 18 Q. Now Mr Dunks couldn't assist on the cause of potential
 19 gaps and duplicates when he was asked about it.
 20 A. Mm.
 21 Q. But what we can see is their suggestion that one should
 22 seek assistance from audit support if gaps or duplicates
 23 were found?
 24 A. Yes.
 25 Q. Do you know anything about that process that audit

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1 support would use?
 2 A. I haven't looked that deeply, no.
 3 Q. Do you know that it was a semi-automated process?
 4 A. As I say, I haven't looked into it.
 5 Q. Because we know from the Seema Misra case that it was
 6 referred to by Mr Jenkins in a witness statement to the
 7 court which, just for your Lordship's note, is
 8 {F/676/2}. It is referred to as a semi-automated
 9 process to remove duplicates, for example.
 10 A. What stage was Mr Jenkins referring to?
 11 Q. What had happened in the Seema Misra case was ARQ data
 12 had been obtained, it had duplicates in it, they were
 13 spotted, and then there was what was described as
 14 a semi-automated process to remove them.
 15 A. Yes, I believe this -- what was the date of this ARQ
 16 data?
 17 Q. As at 2010 I think.
 18 A. That was the Seema Misra case at that date, was it?
 19 Q. Yes, but you don't know anything about this?
 20 A. I have an approximate awareness that at some stage
 21 duplicates can arise because of two correspondence
 22 servers, for instance, and that they have to be removed
 23 at some stage. That's as far as I have gone.
 24 Q. What about gaps?
 25 A. Gaps are rarer, I would suspect, and they are -- again

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1 I haven't looked in depth at the process by which gaps
 2 might occur but I believe they are not supposed to
 3 happen.
 4 Q. Because a few minutes ago you were saying neither were
 5 supposed to happen?
 6 A. I believe that is right, but "happen" may refer to
 7 several locations in the process, and by the time it
 8 gets in the audit store I believe it is the intention
 9 that duplicates and gaps should not be there.
 10 Q. That sentence encapsulates one of the biggest
 11 differences between you and Mr Coyne, doesn't it,
 12 Dr Worden?
 13 A. I don't know.
 14 Q. What Mr Coyne has observed is your report is written
 15 from the point of design aspiration: this is the
 16 intention and I'm going to assume that the intention is
 17 achieved. And Mr Coyne has taken a different approach
 18 of trying to see on the ground whether it was. Do you
 19 accept that as a fair characterisation of your two
 20 different approaches?
 21 A. No, I don't. I have looked at testing a lot, I have
 22 looked at in service a lot, so I have not looked at
 23 design aspirations only.
 24 Q. So do you feel that you looked in relation to the bugs
 25 that you and Mr Coyne discussed, which we will come to

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1 later, do you feel that you looked at that carefully to
 2 form a view about that, did you?
 3 A. I looked -- I mean, I looked for bugs. We both looked
 4 for bugs and we both did as carefully as we could.
 5 Q. I see.
 6 MR JUSTICE FRASER: But this document that's still on the
 7 screen is about extracting the data from the audit
 8 store.
 9 A. Yes.
 10 MR JUSTICE FRASER: And as I understand what you have said,
 11 and I just want to check in case I have misunderstood,
 12 duplicates may occur, they shouldn't, but they may
 13 because of the use of two correspondence servers.
 14 A. On the way.
 15 MR JUSTICE FRASER: Is that on the way out or on the way in?
 16 A. I would expect that duplicates coming out are not
 17 intended whereas duplicates are somewhere on the way in,
 18 and somewhere on the way in duplicates are removed.
 19 MR JUSTICE FRASER: But they could occur both on the way in
 20 and on the way out, is that right?
 21 A. Well, on the way in I think they are perhaps more to be
 22 expected. On the way out they are a sign that something
 23 is wrong.
 24 MR JUSTICE FRASER: And what about gaps?
 25 A. Gaps on the way out I think are again a sign that

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1 something's wrong.
 2 MR JUSTICE FRASER: And what about on the way in?
 3 A. It is not clear whether they may happen. For instance,
 4 if a counter gets isolated, you get maroon transactions,
 5 you might get gaps on the way in.
 6 MR JUSTICE FRASER: All right. Thank you very much.
 7 Mr Green.
 8 MR GREEN: I'm obliged.
 9 Can we look at audit data reversal indicators. If
 10 we can look please at {F/829/1}, it is a document from
 11 11th August 2011, and it is a document that records that
 12 ARQ don't identify transaction reversals.
 13 So this is a PEAK, it is PC0211833. If you go to
 14 the bottom of page {F/829/2}, please.
 15 My Lord, we have got a ring binder with this first
 16 one in for Dr Worden to add the ones we do as we go
 17 along.
 18 MR JUSTICE FRASER: All right.
 19 MR GREEN: As we pass them up, is it all right that
 20 Mr Donnelly --
 21 MR JUSTICE FRASER: Yes, of course. What, goes and puts
 22 them in the file, or hands them up?
 23 MR GREEN: That is right.
 24 MR JUSTICE FRASER: Of course.
 25 MR GREEN: I'm most grateful.

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1 Dr Worden, if you look at page 2.
 2 A. Right.
 3 Q. At the foot of page 2?
 4 A. Yes.
 5 Q. Do you see "Impact on Operations" in capitals about five
 6 lines up?
 7 A. Yes.
 8 Q. Underneath it says:
 9 "Spreadsheets supplied by the prosecution team miss
 10 out an indication as to whether a transaction is
 11 a reversal."
 12 A. Yes.
 13 Q. And it appears to be thought that that's relevant there?
 14 A. Yes.
 15 Q. And that is -- what's being spoken about is the
 16 extraction process of data from the ARQ logs?
 17 A. That is right.
 18 Q. Underneath it says:
 19 "The prosecution team are well aware of the problem;
 20 we hope to have a release out in a few days; a KEL is
 21 therefore not required."
 22 A. Yes.
 23 Q. So it looks as if this was being taken in hand.
 24 If we go over the page to page {F/829/3}.
 25 A. Yes.

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1 Q. Do you see "FASTARQs" at the top?
 2 A. Sorry? Fast ARQs.
 3 Q. Exactly. It says:
 4 "They just need to run fast ARQs with all the
 5 various queries and check that the HNG-X spreadsheets
 6 all now have a reversal column."
 7 A. Yes, right.
 8 Q. It says under "Risks":
 9 "There are a few risks with this fix. It must be
 10 got out or prosecution evidence is incomplete."
 11 It is clear, isn't it, that what the ARQ data would
 12 show would depend on how it was going to be extracted?
 13 A. Yes, I mean --
 14 Q. That's fair?
 15 A. -- to fill this in a bit, extraction is getting out the
 16 xml and then running various programmes to convert the
 17 xml into various different possible spreadsheet forms,
 18 and I believe there is more than one, and these xql
 19 files are xml query files that take xml and extract
 20 stuff from it.
 21 Q. But the answer to my question was yes?
 22 A. Yes. I was just adding a bit of clarification.
 23 Q. If we can now go please to {F/1082/1}. So that was
 24 August 2011. This is 12th June 2013. This is the
 25 document that has been referred to as the Helen Rose

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1 report.
 2 A. Mm.
 3 Q. Is this a document you have seen before, when it comes
 4 up?
 5 A. Certainly the Helen Rose report, when it comes up,
 6 I would have seen before.
 7 Q. You are familiar with it?
 8 A. I'm fairly familiar with it, yes.
 9 Q. Now, it is at {F/1082/1}, and if we look please at page
 10 3.
 11 Let me give you the context. Look at the bottom of
 12 page {F/1082/2} first.
 13 A. Now the blue is Gareth Jenkins in this, I believe.
 14 Q. That is right. At the bottom of page 2 you see a
 15 question:
 16 "I can clearly see the recovery reversal on the
 17 Fujitsu logs received, but would this have been clear
 18 had we not previously discussed this issue."
 19 Do you see that?
 20 A. Yes.
 21 Q. As you say, the blue is Gareth Jenkins. When you had
 22 your conversation with Mr Jenkins about the receipts and
 23 payments issue, did you also discuss this?
 24 A. No, not at all.
 25 Q. Okay. If we go over the page please to {F/1082/3}, and

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1 you look at Mr Jenkins' answer in blue --
 2 A. At the bottom.
 3 Q. At the bottom.
 4 A. Yes.
 5 Q. "I understand your concerns. It would be relatively
 6 simple to add an extra column into the existing ARQ
 7 report spreadsheet, that would make it clear whether the
 8 Reversal Basket was generated by recovery or not."
 9 A. Yes.
 10 Q. "I think this would address your concern. I'm not sure
 11 what the formal process is for changing the report
 12 layout. Penny can you advise ..."
 13 And so forth.
 14 Then at the foot of the page:
 15 "May recommendation is that a change request is
 16 submitted so that all system created reversals are
 17 completely identifiable on both Fujitsu and Credence."
 18 Now, Angela Van Den Bogard gave her evidence that
 19 she didn't think this had been acted on, this
 20 recommendation. You haven't seen anything to indicate
 21 that it has in relation to the extracted audit data,
 22 have you?
 23 A. I certainly don't know. I should say that if it had
 24 been acted on, the way I would imagine it would be acted
 25 on is to produce a change in some of these xql files

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1 which do the conversion to spreadsheet.
 2 Q. And that is a relatively simply thing to do as
 3 Mr Jenkins said?
 4 A. I think so.
 5 Q. So there is no sensible reason not to do it, is there?
 6 A. I don't know.
 7 Q. Well, if it is something you want to do and it's
 8 important and relevant, you explain it's easy to do, can
 9 you think of a sensible reason why you shouldn't do it?
 10 A. No, I can't. But I don't know what the priorities were
 11 or what the business considerations were or anything
 12 else, I just know I don't know whether it was done or
 13 not.
 14 Q. Now, we have looked at your approach to Issue 1(b) which
 15 is to focus on the audit store data?
 16 A. Yes. I think that is not my only conclusion on
 17 Issue 1(b).
 18 Q. Would you fairly -- because I don't want to take you
 19 back to your report -- accept that is the focus of your
 20 answer to 1(b)?
 21 A. Well, if we go back to my report there were several
 22 paragraphs in 8 point whatever it was.
 23 Q. I haven't got time to show you every document again but
 24 let's focus on this. You agree with Mr Coyne that
 25 Horizon does not record disputes. That's agreed?

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1 A. Yes, that's agreed.
 2 Q. So the Horizon system does not record whether one of the
 3 parties involved in the transaction, namely the
 4 subpostmaster, agrees that a figure is correct or
 5 disagrees?
 6 A. Well, disputes are disputes between presumably the
 7 postmaster and the Post Office about what happened.
 8 I was not -- that's what I was referring to.
 9 Q. There's no dispute button on the screen?
 10 A. No.
 11 Q. No. And were you aware that the suggestion of a dispute
 12 button being on screen was considered and rejected in
 13 2008?
 14 A. I wasn't aware of that, no.
 15 Q. Furthermore, where an amount is less than £150, you are
 16 aware, aren't you, that an SPM can't settle centrally?
 17 A. Yes.
 18 Q. So in relation to individual items of £150, even if
 19 disputed, the SPM has to make them good by cash or
 20 cheque?
 21 A. I think that is right.
 22 Q. And there could be more than one of those?
 23 A. In a month or in what?
 24 Q. In a trading period.
 25 A. Well, my understanding is that in a trading period, if

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1 the aggregate amount is less than £150, then it's got to
 2 be cash on the nail. If it is bigger it can be suspense
 3 account.
 4 Q. We will come back to that.
 5 The points relevant to the reliability of the
 6 Horizon system to record transactions are essentially
 7 these, that in certain cases the Horizon system will
 8 record a figure which is in dispute. That follows from
 9 what we have just said?
 10 A. The Horizon system is recording loads of figures and
 11 some of those figures may be in dispute, yes, certainly.
 12 Q. And because of your view about transaction corrections
 13 being necessary as part of the overall system, those
 14 transaction corrections are at some point in time
 15 correcting figures on Horizon which would otherwise be
 16 wrong?
 17 A. Yes. Certainly.
 18 Q. So without those transaction corrections the figures
 19 shown on Horizon are wrong?
 20 A. They could be wrong for a variety of reasons, all sorts
 21 of reasons --
 22 Q. The answer is yes?
 23 A. TCs try and correct all sorts of errors.
 24 Q. The answer is yes?
 25 A. Yes, but I'm saying there are lots of causes.

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1 Q. I'm not asking you about --
 2 A. I'm saying yes.
 3 Q. And it might be that the subpostmaster knows or believes
 4 the figure to be wrong?
 5 A. Yes.
 6 Q. It might be that Post Office or possibly Fujitsu believe
 7 the figure to be wrong?
 8 A. There are all sorts of investigations, yes, which can
 9 lead to views about figures being wrong.
 10 Q. And it might be that two or more of those parties will
 11 think that the figure is wrong?
 12 A. Yes.
 13 Q. But it is still the figure on Horizon which requires
 14 a transaction correction later?
 15 A. Yes.
 16 Q. So even where everyone agrees that a transaction
 17 correction is necessary, the figure shown on the Horizon
 18 system itself is wrong?
 19 A. Intermittently wrong, and the point of the transaction
 20 correction is to make sure that in the long-term Horizon
 21 is right.
 22 Q. Indeed. Now picking up from Tuesday in relation to
 23 transaction corrections and the time that they take to
 24 issue --
 25 MR JUSTICE FRASER: Are you onto -- is this a convenient

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1 moment?
 2 MR GREEN: I'm so sorry. Yes, that would be a convenient
 3 moment.
 4 MR JUSTICE FRASER: I get the sense we are moving on to
 5 a new topic.
 6 MR GREEN: Indeed.
 7 MR JUSTICE FRASER: Possibly because you said picking up
 8 from Tuesday.
 9 Right, we will have 10 minutes, Dr Worden. Same
 10 score as before. You know the drill. And we will come
 11 back in at 12 o'clock.
 12 (11.50 am)
 13 (A short break)
 14 (12.00 pm)
 15 MR GREEN: Dr Worden, picking up from Tuesday in relation to
 16 TCs and the time they took to issue, can we look please
 17 at {F/1324/1}.
 18 A. Yes, right.
 19 Q. Is this a document you have seen before or --
 20 A. I'm not familiar with this one, no, sorry.
 21 Q. When you wrote your report did you have any factual
 22 knowledge about how long it took to issue TCs?
 23 A. Rather little. My impression was --
 24 Q. No, pause there.
 25 A. Yes.

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1 Q. Did you actually know any facts?
 2 A. I didn't have any data.
 3 Q. Thank you. Let's look at page {F/1324/9}, please. If
 4 we look at 3.1.4, do you see what's being proposed there
 5 is 95% of transaction corrections within four months?
 6 A. Yes, right.
 7 Q. Then 3.1.5, 95% of transactions within six months?
 8 A. Let me just see the categories here. Okay.
 9 Q. You can see?
 10 A. Yes.
 11 Q. So there are different timescales for different ones.
 12 If we go over the page to page {F/1324/10}, you can see
 13 that there are provisions there at 3.1.10 for
 14 "Aged/large volume/value transaction corrections"?
 15 A. Yes.
 16 MR DE GARR ROBINSON: I don't mean to be difficult but
 17 I don't know what this document is. Has that been
 18 explained to the witness?
 19 MR GREEN: Have you seen any of these before?
 20 MR DE GARR ROBINSON: What's "these"?
 21 MR JUSTICE FRASER: All right, let's go back to page
 22 {F/1324/1}. I assume it is a Post Office document, is
 23 it?
 24 MR GREEN: It is, my Lord, yes.
 25 MR JUSTICE FRASER: Why don't you just explain to the

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1 witness what the document is.
 2 MR GREEN: This is a working agreement between the financial
 3 service centre and the network.
 4 A. And what's the date?
 5 Q. It is I think 10th March 2015.
 6 A. Right, okay.
 7 Q. If we go to page {F/1324/8}. Paragraph 3, there is
 8 a heading "Working Agreement."
 9 A. Yes.
 10 Q. This reflects the working agreement between FSC and the
 11 network and --
 12 A. And the pages we have looked at before are after this
 13 page, is that right?
 14 Q. Hold on.
 15 A. Sorry.
 16 Q. This reflects the working agreement between FSC at
 17 Post Office and the network, so an internal working
 18 agreement, which was heralded by the title of the
 19 document, the title being a working agreement --
 20 A. Yes.
 21 Q. -- between FSC and the network.
 22 A. Yes.
 23 Q. And at paragraph 3.1 it says:
 24 "The following section sets out the standard
 25 timescales for the issuing of transaction corrections to

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1 branches by FSC."
 2 A. Yes.
 3 Q. Then if we go over the page {F/1324/9}, we see the
 4 provisions there. My question to you was you hadn't
 5 seen any -- you hadn't said you hadn't seen this
 6 document and you said you didn't have any data.
 7 A. That is right, yes.
 8 Q. Did you know of guidance like this from any other
 9 documents as far as you know?
 10 A. I do not think I did, no.
 11 Q. Thank you.
 12 Then if we go to {C5/11/14}, please. This is part
 13 of a request made by Mr Coyne for further information.
 14 We are looking at paragraph 15.2. Mr Coyne asks:
 15 "Please describe the average duration of resolution
 16 for transaction corrections where other statistical
 17 might not be found in relation to causes of TCs."
 18 Yes?
 19 A. Yes.
 20 Q. You did not support that request, did you?
 21 A. I didn't, no. What time was this request?
 22 Q. This is dated -- give me one second. Mr Coyne makes
 23 this 4 June 2018?
 24 A. So quite early, yes.
 25 Q. You didn't support it, did you?

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1 A. No. TCs were --
 2 Q. So that might have provided some data for you about that
 3 topic?
 4 A. I didn't feel that my supporting requests led to them
 5 being acted on any faster, really.
 6 Q. Is that why you didn't support so many of the requests
 7 by Mr Coyne?
 8 A. It was not the centre of my focus of interest at the
 9 time.
 10 Q. Let's look at your transaction correction calculations.
 11 The context in which I think you consider them is Issues
 12 5 and 15, and then you effectively then reconsider them
 13 for the purposes of Issue 1.
 14 A. How do I do that? I mean they do interact with
 15 Issue 1 --
 16 Q. And 3?
 17 A. -- but where's the implicit linkage?
 18 Q. Would you accept that is a fair summary?
 19 A. Well, TCs calculation does not enter into my numerical
 20 estimates on Issue 1, I don't think.
 21 Q. Let's pause there. Let's have a look at Mr Coyne's --
 22 your criticism of Mr Coyne, as it were. Let's look at
 23 paragraph 891 at {D3/1/198}.
 24 A. This is my chapter 9, is it?
 25 Q. Yes, your chapter 9.

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1 A. Which paragraph? 8?
 2 Q. At 891.
 3 A. Yes.
 4 Q. So you note that:
 5 "Mr Coyne has gone further than the above scope."
 6 A. Yes.
 7 Q. Because he had actually referred to the possibility of
 8 further error in the Horizon system where
 9 an inappropriate method of fix was selected or the
 10 possibility of transaction corrections being issued as
 11 a result of error, yes?
 12 A. He had referred particularly to the possibility of
 13 errors in the manual process involved in transaction
 14 corrections.
 15 Q. And that's what you felt was out of scope?
 16 A. Yes.
 17 Q. And you then explain at 891 that for balance, in 9.6 you
 18 provide your own commentary without prejudice to your
 19 understanding of the scope of Issues 5 and 15?
 20 A. Yes, right.
 21 Q. If we look at what Mr Coyne says in his expert report,
 22 you refer to it -- if we go to the next page of your
 23 expert report just for a moment {D3/1/199}, the
 24 particular points that you have picked out at
 25 paragraph 893 --

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1 A. That's 3.13.
 2 Q. -- are 3.13 and 3.28. Let's go to those. It is
 3 {D2/1/27}. There are two separate points here. 3.13 is
 4 the first one we are looking at now.
 5 A. Yes.
 6 Q. And he says:
 7 "The reconciliation process ultimately presents the
 8 possibility of further error within the Horizon system
 9 whereby an inappropriate method of fix was selected,
 10 and/or the corrective fixes may have been carried out
 11 erroneously."
 12 A. Mm.
 13 Q. Now, that's not actually particularly limited or focused
 14 on transaction corrections, is it?
 15 A. ""The reconciliation process ultimately presents the
 16 possibility of further error within the Horizon system
 17 whereby an inappropriate method of fix was selected ..."
 18 It seems to me that fix does have a bearing on
 19 transaction corrections.
 20 Q. Okay, that's how you understood it?
 21 A. Yes.
 22 Q. Then if we look at 3.28 -- sorry, can we just stay on
 23 that page one second.
 24 Just in terms of substance, you agree that that's
 25 a fair comment by him, whether it is in or out?

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1 A. Well, I have difficulty understanding the bounds of the
 2 Horizon system there because a method of fix being
 3 selected is a human process.
 4 Q. Okay. Subject to that you would accept the substance of
 5 what he is saying, subject to the bounds of the Horizon
 6 system?
 7 A. "... corrective fixes may have been carried out
 8 erroneously."
 9 Again, that seems to be a human process we are
 10 talking about.
 11 Q. The bounds of the Horizon system you're referring to
 12 exclude the process of issuing TCs?
 13 A. Well, it seems to me that this statement is referring to
 14 some human processes.
 15 Q. And you don't include those in the Horizon system?
 16 A. No, not part of the system.
 17 Q. If we look at {D2/1/30}, which is the other paragraph to
 18 which you expressly referred, 3.28.
 19 A. (Reads to self)
 20 Yes.
 21 Q. He says:
 22 "It is also possible that transaction corrections
 23 were issued as a result of error in Horizon transaction
 24 data processing."
 25 A. Yes.

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1 Q. Just pausing there. In/out, whatever you like to do
 2 with it, whatever its status going to the Horizon
 3 Issues, you agree that that's possible?
 4 A. It is possible, yes.
 5 Q. So at least on that point there's no disagreement of any
 6 substance?
 7 A. No. I would obviously --
 8 Q. Just yes or no at the moment.
 9 A. No, there is no disagreement.
 10 Q. And you note in your report, {D3/1/199} at
 11 paragraph 892.3, you say there:
 12 "Whenever the comparison revealed any discrepancy,
 13 there appeared to be a human process of deciding where
 14 to allocate responsibility for the discrepancy this had
 15 to be a human process and was therefore subject to
 16 errors."
 17 A. Yes.
 18 Q. So that's entirely consistent with you accepting the
 19 point that Mr Coyne made there?
 20 A. Yes.
 21 Q. On any definition of what consistent means?
 22 A. Well, I say consistent means not contradicting, yes.
 23 Q. You are actually agreeing with him properly, aren't you,
 24 there?
 25 A. 3.13 or 3.28?

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1 Q. 3.28.
 2 A. I think I am, 3.13 I think I am, yes.
 3 Q. And then you then devote a substantial section of your
 4 report, section 9, to calculating your upper limit on
 5 the magnitude of discrepancies --
 6 A. This is 9.6 I think, yes.
 7 Q. -- arising from erroneous TCs.
 8 And if we go to paragraph 895 at {D3/1/199} we can
 9 see that you have sought to calculate what in line 2 you
 10 call there:
 11 "... an upper limit on the magnitude of
 12 discrepancies in claimants' accounts arising from
 13 erroneous TCs ..."
 14 A. Yes.
 15 Q. You have focused on the claimants' accounts rather than
 16 the subpostmasters generally?
 17 A. I have adopted that scaling factor, but to my mind the
 18 advantage of using numbers is if that scaling factor is
 19 not the right one it is easy to convert to another
 20 scaling factor.
 21 Q. It is a yes or no answer --
 22 A. Yes, I have adopted that scaling factor.
 23 Q. And you have looked at annual volumes, distribution of
 24 types of TC, proportions of TCs disputed and proportion
 25 of disputes upheld?

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1 A. Yes.
 2 Q. That's a new exercise that you have done that Mr Coyne
 3 hadn't done?
 4 A. Yes.
 5 Q. And none of the Horizon Issues particularly asked you to
 6 do it?
 7 A. You could say the robustness asked me to do it, because
 8 they are a user error correction, they are a form of
 9 robustness.
 10 Q. But the errors in TCs, your express position is that
 11 that's out of scope, manual errors in TCs?
 12 A. I'm saying the causes are out of scope. There are a lot
 13 of things where the causes are out of scope but the
 14 robustness is how the effects are dealt with.
 15 Q. Let's look at page {D3/1/205}, paragraph 928. You
 16 identify in paragraph 928 a table of volume of TCs by
 17 year?
 18 A. Mm.
 19 Q. Did anything odd strike you in the data when you were
 20 eyeballing it?
 21 A. Yes, there is a funny year where if you look at "Value
 22 of TCs", then 2015 is rather peculiar. It jumps up
 23 above the others.
 24 Q. Yes, it is about five times the average of the
 25 surrounding four years.

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1 A. I didn't get to understand the final reason for that.
 2 Although there was another piece of data where
 3 a particular month they had some lumps in the number of
 4 TCs which may be related but I never investigated that.
 5 Q. You have no idea whether that was a catch up on lots of
 6 old ones that had gone wrong or whether it was
 7 a disastrous year in some respect, or there was
 8 a specific problem or anything else, do you?
 9 A. I don't know the causes of that lump, no.
 10 Q. When the claimants' solicitors specifically asked
 11 a question about the TCs in correspondence -- for
 12 your Lordship's note {H/69/2} -- were you asked about
 13 that?
 14 A. No, I don't think so.
 15 Q. And so you were relying I think on Mr Smith's evidence
 16 as you say at paragraph 931 on {D3/1/206}, is that
 17 right?
 18 A. Particularly for disputed TCs I was relying on his
 19 evidence, yes.
 20 Q. And you were here for Mr Smith's evidence?
 21 A. Mm.
 22 Q. Sorry?
 23 A. I think I was, yes.
 24 Q. I am just checking because earlier on, on Tuesday, you
 25 said you thought you were here for all the defendant's

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1 evidence, and every time I put someone to you, you say
 2 you were not here.
 3 A. I agree that's confusing. I was certainly here for
 4 certain key defendant witnesses, like Mr Parker and
 5 Mr Godeseth. The others I can't be quite so sure about.
 6 Q. Because if you rely on someone's evidence it is pretty
 7 interesting what they say in cross-examination, isn't
 8 it?
 9 A. I read the transcripts if I'm not there.
 10 Q. And you have had the transcripts --
 11 A. Yes.
 12 Q. -- since Tuesday to consider before you came back today?
 13 A. Yes.
 14 Q. Did you read the transcript of Mr Smith's evidence?
 15 A. I believe I did, yes.
 16 Q. And it is right that your analysis in 206 is essentially
 17 premised on Mr Smith's evidence being accepted?
 18 A. It is, absolutely.
 19 Q. You in fact say that, you say:
 20 "If this evidence is accepted it enables me to
 21 calculate the approximate financial impact of errors in
 22 processing TCs."
 23 If we just look a bit further down at 934, you have
 24 just referred again {D3/1/207} to disputed TCs and
 25 upheld TCs in Mr Smith's witness statement?

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1 A. I have jumped somewhere.
 2 Q. Sorry.
 3 MR JUSTICE FRASER: I think you need to be on {D3/1/207},
 4 I think.
 5 Are you going to paragraph 934?
 6 MR GREEN: My Lord, I am.
 7 We have just looked at some other figures from
 8 Mr Smith, and you say:
 9 "I proceed on the assumption that these figures,
 10 which are the only ones available to me, are accepted by
 11 the court."
 12 A. Yes.
 13 Q. Mr Smith had presented the figures for Santander in
 14 a way that had misled both you and Mr Coyne, hadn't he?
 15 A. That is correct, there was a change in Mr Smith's
 16 evidence. And also I made another calculation of TCs in
 17 my supplemental report as you are aware.
 18 Q. Did that rock your confidence in his knowledge of the
 19 subject matter at all?
 20 A. If you look at my second calculation of TCs, I isolated
 21 three principal categories, that was Camelot and remming
 22 and Santander online banking, and Mr Smith's correction
 23 was not about Santander online banking, it was about
 24 Santander manual deposits.
 25 Q. Yes, but I mean Mr Smith's Camelot figures were

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1 specifically relied on by you, weren't they?
 2 A. Camelot figures, yes.
 3 Q. And I think we see that at paragraph 936 and footnote 29
 4 on page 207.
 5 A. Yes. And I think in my subsequent calculation, when
 6 I had the three columns for the different kinds, Camelot
 7 TCs were not a large contribution to the ultimate
 8 result.
 9 Q. Let's have a look at that, paragraph 49. The figures
 10 that Mr Smith gave --
 11 MR JUSTICE FRASER: Where are we?
 12 MR GREEN: I'm so sorry, paragraph 20 of Mr Smith's witness
 13 statement which is {E2/9/5}. Do you see paragraph 20
 14 there?
 15 A. Yes. I remember those figures, yes.
 16 Q. There actually weren't any figures for Bank of Ireland
 17 retracts and lottery for the number of TCs disputed or
 18 compensating TCs, so they had been estimated?
 19 A. They are estimated figures, yes.
 20 Q. Did you pick up the fact that they had been estimated
 21 when you were relying on his evidence in your first
 22 report?
 23 A. Well, I'm always conscious of the limitations of
 24 evidence and this introducing of uncertainty, that's
 25 a further dimension of uncertainty in the analysis.

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1 Q. But you had assumed they had been estimated based on
 2 some sort of knowledge?
 3 A. I assumed if somebody made an estimate it was a sensible
 4 estimate, yes.
 5 Q. But based on some facts or knowledge that they had?
 6 A. Yes.
 7 Q. And in his cross-examination, if we go to that,
 8 {Day6/186:19}, starting at line 19. It is page 186 at
 9 line 19.
 10 A. I'm not there yet.
 11 Q. Don't worry, it will come up in a moment.
 12 A. Okay.
 13 "Question: ... under 'BOI retracts' and 'Lottery'
 14 the number of TCs issued for those two is very different
 15 ..."
 16 Right.
 17 "Question: But the number of disputed TCs
 18 apparently is estimated to be the same?
 19 "Answer: It appears so, yes."
 20 Right.
 21 Q. You see:
 22 "Question: And the number ... is ... estimated to
 23 be identical?
 24 "Answer: It appears so, yes.
 25 "Question: Do you have any feel at all from your

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1 own knowledge as to whether those figures are even
 2 remotely reliable?"
 3 A. Well, my own knowledge --
 4 Q. No, I'm just asking you to look at the transcript for
 5 the moment. I'm just reading out the question I said to
 6 Mr Smith. Do you see line 4 on page 187?
 7 A. I don't have feel for my own knowledge --
 8 Q. No, I'm not asking you the question --
 9 A. I thought that's what you were asking me.
 10 Q. No. Could you please just look at the transcript and
 11 then I'll ask a question in a minute. It's my fault for
 12 not making it clear.
 13 MR JUSTICE FRASER: I think what Mr Green is doing is he is
 14 just going to read out some questions and answers from
 15 Mr Smith and then he is going to put a question to you.
 16 A. Right, okay.
 17 MR JUSTICE FRASER: Mr Green.
 18 MR GREEN: I'm most grateful.
 19 If you look at line 4 on {Day6/187:4}, and he says:
 20 "Answer: The number of issued TCs I would suggest
 21 are very accurate. The number of TCs disputed is not
 22 something that I can comment on at this stage. I do
 23 know that prior to having our case management system in
 24 there was no consistent method of recording the method
 25 of disputes."

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1 A. Yes.
 2 Q. So on that footing the figures that you were looking at
 3 and the person giving them doesn't seem to have been
 4 hugely well placed to give reliable figures, does he?
 5 A. No.
 6 Q. Now if we look at TCs of different types on page 207 of
 7 your first report {D3/1/207}, at paragraph 938, bottom
 8 of the page, you refer to a TC summary --
 9 A. Yes.
 10 Q. -- from a TC reporting pack from November 2012. If we
 11 look at the following page {D3/1/208} you will see table
 12 9.3.
 13 A. Yes.
 14 Q. "Volume of TCs by origin".
 15 A. Yes.
 16 Q. For 2011/2012. Do you see that?
 17 A. Yes.
 18 Q. If we look at the source document from which you have
 19 taken that, could we please open {F/987/1}. It is
 20 an Excel spreadsheet.
 21 Do you remember you got that from an Excel
 22 spreadsheet, Dr Worden?
 23 A. Yes, plenty of tabs I remember.
 24 Q. That is right. We are going to look at a tab called
 25 "Summary by period" when that comes up. It is

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1 {F/987/1}.

2 We can't see it now, but presumably you looked

3 carefully at the data on the Excel spreadsheet?

4 A. I poked around that spreadsheet a bit.

5 Q. You poked around a bit?

6 A. Yes.

7 Q. There are quite a few tabs so it is important to see

8 what you are dealing with.

9 MR JUSTICE FRASER: Pause for one second. We are still

10 waiting for F/987.

11 MR GREEN: We are.

12 MR JUSTICE FRASER: Which I imagine is quite a big

13 spreadsheet which is why it's taking a while to load.

14 I can see it there but it has not gone on the common

15 screen yet. Is that F/987? Here we go. (Pause)

16 MR GREEN: Shall I just ask you, Dr Worden, while we are

17 waiting for that, I will just take you to a different

18 paragraph, if I may.

19 A. Yes.

20 Q. If we look at paragraph 942.

21 A. Yes.

22 Q. On page {D3/1/209}.

23 A. I will try my paper copy, I think.

24 MR JUSTICE FRASER: If we do that, we are moving away from

25 the spreadsheet, is that right?

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1 MR GREEN: My Lord, I will come back to that spreadsheet.

2 MR JUSTICE FRASER: Maybe at 1.55 pm ask for it to be loaded

3 up and it will be there at 2 o'clock.

4 MR GREEN: I'm most grateful.

5 If we look at paragraph 942, you proceed on various

6 assumptions to reach a calculation that:

7 "If there were 2% of TCs issued in error, which were

8 resolved incorrectly against the branch, the net effect

9 on branch accounts would be £6 per branch per month."

10 A. Yes.

11 Q. "As described above, in my opinion this is a

12 conservative upper limit on the magnitude inaccuracies

13 introduced into branch accounts - which could be of

14 either sign."

15 A. Yes.

16 Q. We go down. 943, you have got your assumption that

17 branches are affected equally, yes? Which takes us back

18 to our Penny Black example which we won't revisit.

19 And then at 944 we have got:

20 "This figure is to be compared with the mean

21 shortfall per month claimed by the claimants - which, as

22 I described in section 8 ..."

23 Then you say:

24 "A maximum of £2 per month from erroneous TCs is

25 less than 1% of this amount."

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1 A. Yes, that's just arithmetic.

2 Q. Yes? So in fairness to you, Dr Worden, you later in

3 your second report revise the figure from £2 per month

4 to 1.50 per month?

5 A. Yes, there is a complete new calculation in the second

6 report.

7 Q. And that change of 50p was significant for your

8 calculations on an engineering approach?

9 A. Well, I think I summarised in the second report it was

10 £2 again. I can't recall exactly whether I presented it

11 as £2 or 1.50. But my belief is that figures in that

12 range are interesting to the court, whether it is £2, £3

13 or whatever, so I didn't feel the need for high

14 precision in that figure. But I think I summarised it

15 somewhere in my supplemental report as £2 in spite of

16 the fact the arithmetic had come a bit lower. I can't

17 recall.

18 Q. And the effect of the figures that you put forward is,

19 you say, to show that the probability of a claim by

20 a claimant being correct is extraordinarily low?

21 A. I was just converting from this average of £2 a month to

22 what it would look like if the £2 came in lumps. If the

23 £2 came in thousand pound lumps then that would

24 obviously have to happen one every 500 months to create

25 the right average. So I was doing the arithmetic of

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1 probabilities.

2 Q. Yes, but my question to you is that the effect of what

3 you were doing was to show, on your approach, that the

4 chances of a claim being made by a claimant that they'd

5 lost £200 in one month due to errors in TCs, in the

6 absence of further evidence the probability of that

7 being correct was about 1%?

8 A. Yes.

9 Q. So very unlikely?

10 A. That is the arithmetic, yes.

11 Q. And that's the effect of what you were showing there?

12 A. Yes.

13 Q. And you weren't asked in any of the Horizon Issues by

14 the court to give your view of the likelihood of

15 a claimant being right about a claim for £200 being lost

16 from an erroneous TC, were you?

17 A. No, but I was asked about discrepancies of various kinds

18 and I felt, rightly or wrongly, that this was a useful

19 way to present the figures.

20 Q. Okay. In fairness to you, let's show you your second

21 report at paragraph 32. It is on {D3/7/98}. If we look

22 at paragraph 32 on that page and there you say that your

23 revised figure is £1.50 per months rather than £2 per

24 month?

25 A. Yes.

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1 Q. And you say at the end of that paragraph:
 2 "So in my opinion, errors in TCs cannot account for
 3 even a small part of the claimed shortfalls."
 4 A. Yes.
 5 Q. So it is not just the effect of the calculation, it is
 6 what you reach a conclusion on?
 7 A. Yes.
 8 Q. So can we just do another statistical analysis. Let's
 9 look at a worked example of Mr Abdulla's case. Have you
 10 seen information about his case?
 11 A. I have. I'd need to recollect it.
 12 Q. Let me -- assume I'm guiding you correctly about the
 13 facts.
 14 A. I am sure you are.
 15 Q. Your average for TCs per branch per month is £1.50.
 16 A. Mm.
 17 Q. And you say that when your average per branch per month
 18 was £2 the chance of a £200 erroneous TC is 1%?
 19 A. Yes.
 20 Q. And so when the average per branch is £1.50 the chance
 21 of a £200 erroneous TC in month is 0.75%, isn't it?
 22 A. That is right.
 23 Q. You also assumed that the likelihood of TCs -- erroneous
 24 TCs hitting a branch were equal across the board?
 25 A. Per volume of transactions, yes.

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1 Q. Per volume of transactions. And so the chances of
 2 an erroneous TC of £1,000 would be what, roughly?
 3 A. We started with £200 so it is five times lower.
 4 Q. So if we divide 0.75% by 5, the chances of one erroneous
 5 TC of £1,092, will you take it from me, is 0.14%?
 6 A. That feels about right.
 7 Q. Feels about right?
 8 A. Yes.
 9 MR JUSTICE FRASER: To two decimal places.
 10 MR GREEN: Thank you. What is the chances of that happening
 11 in two months in a row, Dr Worden, on your analysis?
 12 A. Let me consider this carefully. If you believe the two
 13 months are independent statistically then clearly the
 14 probability is multiplied, but there may be correlation
 15 factors, who knows?
 16 Q. Yes, and there are two points there. Let's leave
 17 correlation factors aside for a moment. If there were
 18 no correlation factors, yes?
 19 A. Yes.
 20 Q. Or other factors, and they were independent variables?
 21 A. Yes.
 22 Q. The answer is 0.14% x 0.14%.
 23 A. Yes.
 24 Q. So about a seventh or something of a percent of
 25 a seventh of a percent?

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1 A. Well, what is it? It is 1 part -- I mean 0.14% is 1
 2 part in -- sorry --
 3 Q. It is 1.5 parts in a thousand, isn't it, roughly?
 4 A. So the square of that is 2 parts in 1 million, I think.
 5 Q. So that is the chances of two erroneous TCs --
 6 A. In two identified consecutive months, say.
 7 Q. Two identified consecutive months?
 8 A. Yes, or non-consecutive months. I would be more
 9 confident about non-consecutive months because I think
 10 consecutive months might have correlations.
 11 Q. And you have not factored in the possibility of
 12 correlations or indeed concentrations of TCs or any
 13 factors of those sort in your calculations, have you?
 14 A. I haven't, I do not think, gone on to calculate these
 15 commentarial things about N months at a time. I could
 16 have spent a lot of time going about distributions of
 17 three months here and so on. I didn't go into that,
 18 I just went into that one result.
 19 Q. Do you accept that looking at what appears actually to
 20 have happened is quite a good way of testing
 21 a theoretical model that you constructed?
 22 A. Well, the theoretical model -- the conclusion is in the
 23 absence of other information, and then when we have
 24 other information we have to consider how that other
 25 information meshes with our original model and so that's

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1 complicated.
 2 Q. So is it fair to assume that in fact the extent to which
 3 the reality presented by the claimants departs from your
 4 theoretical model is likely to be explained by
 5 information you have not considered?
 6 A. Well, when we get to individual claimants, as doubtless
 7 we will in future trials, we will consider all that and
 8 we will: think what are the circumstances and how does
 9 that alter the basic model and so on? We will do that
 10 calculation, presumably, but that was not my purpose in
 11 this report.
 12 Q. You accept that your theoretical model is not an obvious
 13 fit with the facts of Mr Abdulla's case if indeed he did
 14 receive two erroneous TCs running?
 15 A. I have not compared my model with Mr Abdulla's case.
 16 Q. I know you haven't, that's why I'm asking you to do it
 17 now?
 18 A. I can't do it now. I don't know enough about
 19 Mr Abdulla's case.
 20 Q. Well, on the theoretical basis you agree that what we
 21 see in Mr Abdulla's case does not fit at all with your
 22 predictions in general so that you would look for some
 23 explaining factor?
 24 A. I haven't done the analysis of Mr Abdulla's case
 25 compared with my general model. If I did, I'm not sure

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1 what I would conclude.
 2 Q. But if we just read your report, the chance of
 3 Mr Abdulla being right about even one erroneous TC
 4 having been issued is vanishingly small?
 5 A. No, because he was in -- I mean the sort of factor one
 6 has to consider is how many months the claimant was in
 7 post, for instance. And as I say, comparing the general
 8 model with a claimant is a complicated exercise which
 9 I haven't -- and I hesitate to jump in there now.
 10 Q. But you have said at paragraph 32, you have reached
 11 a conclusion that errors in TCs cannot account for even
 12 a small part of the claimed shortfalls?
 13 A. That's about the claimants as a population.
 14 Q. But you have done that without the sort of facts that
 15 you are now wishing to consider in Mr Abdulla's case?
 16 A. I have not considered the claimants as individuals, and
 17 when we get round to that it will be a whole new set of
 18 considerations.
 19 Q. I suggest to you, Dr Worden, that the assumptions that
 20 you have made, including the even incidence of TCs
 21 across the subpostmaster population based on
 22 transactions, is a false premise to arrive at a reliable
 23 analysis of the type which you have done?
 24 A. I don't agree with that. I would like to know why you
 25 say that.

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1 Q. We gave the Penny Black example on Tuesday, didn't we?
 2 A. We did indeed, we went into that.
 3 Q. And someone I think tweeting about the case suggested
 4 a different example which was very similar?
 5 A. I haven't read the tweets, I'm afraid.
 6 Q. Let me suggest it to you and see if you accept this one:
 7 based on lottery winners, a very small chance of winning
 8 the lottery, you walk into a room and everyone in the
 9 room says to you, "Oh yes, I won the lottery", "I won
 10 the lottery", "I won the lottery", and that seems very
 11 unlikely, doesn't it, until you see the sign on the door
 12 that says "Lottery Winners' Reception".
 13 A. In the Penny Black example and in the example that you
 14 have just given me we are going into the issue of
 15 supplemental information and how that alters your
 16 conclusions based on a base model. We are also going
 17 into complicated statistical issues about selected
 18 populations. We are going towards advanced statistics.
 19 Q. That's what you are an expert in.
 20 A. I was very careful in my reports not to use advanced
 21 statistics. I was trying to keep it at undergraduate
 22 level, if you like. So I'm quite happy to answer
 23 questions about advanced statistics but in doing so
 24 I shall be very careful and I need to know the question
 25 very clearly.

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1 Q. I'm going to put a point to you that I'd be happy to put
 2 to my 13-year-old daughter, which is that when you look
 3 at a statistical sample the first thing you should do is
 4 look at the nature of the sample and how they were
 5 selected?
 6 A. Yes.
 7 Q. And that is what the Penny Black and lottery examples
 8 are about, isn't it?
 9 A. Well, the Penny Black example led to a conclusion which
 10 in my cross-examination I queried on one ground, and the
 11 one ground was that it seemed to me that to follow your
 12 argument I would have to base my analysis on the
 13 assumption that the claimants were right, and that
 14 seemed to me strange and not a thing I could do as
 15 an expert. But since then I have thought more about it
 16 and there's another much stronger reason for not taking
 17 that example, and the point you were putting to me was
 18 that the claimants were a self selected population and
 19 you need to deal with them differently, and that is
 20 an advanced statistical point. But why it is not
 21 relevant to my analysis is that the claimants are
 22 a self-selected sample and they selected themselves long
 23 after they suffered their shortfalls.
 24 So the point you are putting to me effectively is
 25 these people selected themselves and that somehow caused

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1 Horizon several years previously to rain bugs on them.
 2 And so the causation is completely the wrong way round
 3 between Horizon affecting the claimants and the
 4 claimants self-selecting. It doesn't make sense.
 5 Q. But, Dr Worden, I'm going to put to you that that is
 6 a comical explanation.
 7 A. It is not comical at all. It is commonsense that
 8 causation can't go backwards in time.
 9 Q. No one is suggesting that causation goes backwards in
 10 time.
 11 A. Well, I think that's the suggestion that was explicit in
 12 your Penny Black --
 13 Q. I will clarify it to you. The Post Office's case is
 14 that large numbers of subpostmasters are perfectly happy
 15 with the Horizon system and do not feel they have
 16 suffered from unjustified shortfalls.
 17 A. Yes.
 18 Q. But others do feel they have.
 19 A. Yes.
 20 Q. How many of the former group do you think you would
 21 expect to join a group action complaining about
 22 something they haven't suffered?
 23 A. I don't know the answer to that question but I would not
 24 expect many.
 25 Q. No. Zero or close to zero?

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1 A. Yes.
 2 Q. If you were aggrieved because you believed that you had
 3 in fact suffered in that way and you were afforded the
 4 opportunity of redress, do you think the fact that you
 5 believe you have suffered in that way is a material
 6 factor in your decision whether to join the group action
 7 or not?
 8 A. It is a material factor, and it is not a material factor
 9 in whether Horizon during your tenure caused bugs to
 10 you.
 11 Q. But Dr Worden, just because you join doesn't mean that
 12 we go back to the future with the professor in the
 13 DeLorean and Horizon causes problems in the past?
 14 A. Exactly. That is precisely what I'm saying.
 15 Q. But you do recognise, don't you, that you accepted that
 16 identifying how a sample has been selected is important.
 17 Take it in stages. You accepted that?
 18 A. I accepted that and --
 19 Q. And the importance of the sample in this case is you are
 20 capturing what Post Office themselves call a small
 21 minority of people who, whether they are right or wrong,
 22 are all people who feel strongly enough to join the
 23 group action that they have suffered these shortfalls?
 24 A. Yes. They have self-selected.
 25 Q. Yes. So there is a factor which applies to them which

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1 does not apply to people, the vast majority --
 2 A. But that factor did not apply when they were suffering
 3 from shortfalls.
 4 Q. You genuinely can't see, are you saying, the relevance
 5 of the sample you're dealing with --
 6 A. I'm saying the causation is back to front, and causation
 7 is what's at issue here.
 8 MR JUSTICE FRASER: All right. I'm going to bring this
 9 sequence of cross-examination to an end, Mr Green.
 10 I think it has probably gone on long enough.
 11 MR GREEN: I understand. My Lord, may I just put what
 12 techniques the expert said he had in fact applied in
 13 that?
 14 MR JUSTICE FRASER: Yes.
 15 MR GREEN: Can we look please to {Day18/10:6}. You were
 16 asked about having your CV and you have given evidence
 17 in software development methods and advanced statistical
 18 techniques. You said yes.
 19 You were then asked at line 13:
 20 "Question: The phrase 'advanced statistical
 21 techniques' reflects the application of the expertise
 22 that you have just been talking about?
 23 "Answer: Absolutely. I believe that the statistics
 24 I have applied as a scientist particularly but also as
 25 an engineer goes to the point of advanced statistical

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1 techniques."
 2 A. Yes.
 3 Q. Do you now say that you have not applied advanced
 4 statistical techniques in the approach in your reports?
 5 A. What I say is I was encouraged and I took the advice
 6 that the techniques I have applied in my reports are
 7 elementary statistical techniques.
 8 Q. Who encouraged you to do that?
 9 A. The Post Office lawyers were telling me to keep it
 10 simple, basically, and I was encouraged -- and I felt my
 11 duty was to provide explanations to the court which the
 12 court could readily understand, so I did not want to go
 13 into advanced statistics for that purpose.
 14 Q. A final question on this, Dr Worden, and then we will
 15 move on. Did you come up with the idea of an even
 16 distribution across all claimants or did somebody else?
 17 A. I did.
 18 Q. Can we move forward, please, to Issue 4, for which we
 19 will go back to {C1/1/1}, please.
 20 You can see Issue 4:
 21 "Controls and measures for preventing/fixing bugs
 22 and developing the system."
 23 A. Mm.
 24 Q. That's the general heading, and then the specific
 25 question at question (4) is:

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1 "To what extent has there been potential for errors
 2 in data recorded within Horizon to arise in (a) data
 3 entry, (b) transfer or (c) processing of data in
 4 Horizon?"
 5 I want to ask you about (a), data entry first,
 6 please. Data entry clearly includes the potential for
 7 mis-keying, doesn't it?
 8 A. It does.
 9 Q. And at {D3/1/63} you say there -- you refer to -- at
 10 paragraph 222, under the heading at 6.1.1 "Detection of
 11 User Errors" or DUE, you say:
 12 "In the design of the Horizon counter user
 13 interface, there are large numbers of measures to
 14 prevent user errors."
 15 A. Yes.
 16 Q. "Many of these measures have by now become common
 17 practice in the design of user interfaces - such as the
 18 use of menus and buttons, rather than free text input
 19 ..."
 20 A. I was there referring to a common practice rather than
 21 specifically Horizon, I guess. Horizon has plenty of
 22 buttons, not so many menus.
 23 Q. So having a screen with a first class stamp button on it
 24 is one of the factors that you think is helpful?
 25 A. For instance, yes.

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1 Q. As an example.
 2 A. Yes.
 3 Q. And you haven't actually had any regard to the specific
 4 layout of the individual screens, have you?
 5 A. I haven't tried to redesign screens myself or to
 6 consider how they might have been better. I think that
 7 is a very dangerous exercise for an IT engineer to do
 8 actually.
 9 Q. Because it is not your field of expertise?
 10 A. Well, I have run a field of -- a team of user interface
 11 experts and we did user interface design for things like
 12 air traffic control, and the one thing that I learnt is
 13 the designer's prejudices about what is a good user
 14 interface or not are not to be trusted, and one thing
 15 you have to do is user trials to find out what works.
 16 Q. Yes. And that is a very important part of having
 17 a robust system?
 18 A. Yes, user interfaces should be tried out and evaluated.
 19 Q. Yes. And if you get it wrong that increases the
 20 potential for mis-key errors, doesn't it?
 21 A. It would do, yes.
 22 Q. At paragraph 224 {D3/1/64}, you say:
 23 "The Claimants have drawn attention to the user
 24 error of 'mis-keying', to the question of how well
 25 Horizon prevented mis-keying, and whether Horizon might

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1 have prevented it more effectively."
 2 Yes? And at paragraph 226 you refer to the
 3 Mis-Keyed Project Feasibility Study, 2012?
 4 A. Right.
 5 Q. Which you deal with in appendix C1.
 6 A. Yes. I haven't read that lately, I'm sorry.
 7 Q. If we look at {D3/2/40} and we look at paragraph 131,
 8 there you say:
 9 "The Post Office internal feasibility study makes it
 10 clear that Post Office were concerned at the costs
 11 incurred as a result of mis-keying."
 12 Yes?
 13 A. Yes.
 14 Q. You say:
 15 "However, the background section of the report makes
 16 it clear that the costs of concern were Post Office's
 17 central costs, and were not costs or discrepancies in
 18 accounts in the branches."
 19 A. Yes.
 20 Q. Did you actually read that document or did someone else
 21 write that for you?
 22 A. I read it and wrote it.
 23 Q. So you read that. You read the document, the background
 24 document, and you wrote this that we just --
 25 A. Yes. My strong impression from the background document,

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1 reading the whole of it, was that the emphasis was
 2 central costs in Post Office.
 3 Q. And you feel you read that document with the same care
 4 that you read other documents you read in the case?
 5 A. I think so, yes. I mean --
 6 Q. Let's look at it {F/932/1}. Let's look at the front of
 7 it first. "Mis-Keyed Project Feasibility Study", this
 8 is the one.
 9 A. Okay.
 10 Q. And we will find the background section to which you
 11 referred on page 4 {F/932/4}. Let's look at the first
 12 paragraph of the background section to which you have in
 13 fact expressly referred. It says:
 14 "As part of the P&BA centre of excellence drive, one
 15 of the areas of concern is the number of instances of
 16 mis-keyed transactions that occur and much to the
 17 detriment of P&BA. A mis-keyed transaction occurs when
 18 an incorrect value is input by the counter clerk, which
 19 causes a poor customer experience."
 20 Then this:
 21 "The mistake can have a significant impact on the
 22 branch and resource is required in P&BA to manage the
 23 client and address the error. A very large value
 24 mis-keyed transaction will put the viability of a branch
 25 in doubt."

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1 A. Mm.
 2 Q. Why did you not mention that impact in your summary of
 3 the background?
 4 A. The last sentence I agree I did not -- it didn't
 5 register with me, but it seemed to me that poor customer
 6 experience and impact on the branch, and it seemed to me
 7 that basically mis-keying can lead to errors and it
 8 leads to costs having to correct those errors, and
 9 certainly large impacts in my opinion are very likely to
 10 be corrected.
 11 Q. Taking your evidence on its face first, the passage that
 12 you have referred to absolutely does identify that costs
 13 and discrepancies in branch accounts were of concern.
 14 A. It says "impact" on the branch. And it does -- I agree
 15 with you the last sentence does say that it has impact
 16 on the branch, but the general tenor of the document
 17 seems to me that it is saying, look, this stuff occurs,
 18 we can correct it, but it is costing us money to correct
 19 it --
 20 Q. Are you being scrupulously fair in your answers,
 21 Dr Worden, on that point?
 22 A. I agree with you that that last sentence of that
 23 paragraph I had not paid attention to in my summary.
 24 Q. I'm going to suggest to you that that is not
 25 a scrupulously fair answer. Do you agree?

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1 A. I think I have answered your question fairly .
 2 Q. Is it scrupulously fair?
 3 A. Scrupulously fair? I'm trying to be as fair as I can,
 4 certainly .
 5 Q. Are you? Can I suggest you might wish to try harder
 6 when we look back at what it actually says in the first
 7 paragraph.
 8 Come four lines down. If you look -- if you come
 9 four lines down, about two inches in from the left -hand
 10 side margin:
 11 "The mistake can have a significant impact on the
 12 branch."
 13 A. Sorry, where are we?
 14 Q. Four lines down.
 15 A. "... impact on the branch ..."
 16 Yes, that --
 17 Q. No, no. Do you see?
 18 A. Yes, I have got that sentence.
 19 Q. You have got the sentence that says:
 20 "The mistake can have a significant impact on the
 21 branch ..."
 22 A. Yes.
 23 Q. And you were trying to limit your agreement in answer to
 24 my questions only to the last sentence which says:
 25 "A very large value mis-keyed transactions ..."

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1 A. Yes, but that sentence which you quoted to me goes on to
 2 say:
 3 "... resource is required in P&BA to manage the
 4 client and address the error."
 5 So the impact on the branch in that sentence is not
 6 assumed to be but is implied to be a temporary impact
 7 because it gets corrected.
 8 Q. It does not say correct the error necessarily, does it?
 9 A. "Address the error", I mean obviously addressing is
 10 trying to correct.
 11 Q. The other point you have not mentioned in this document
 12 is recommendations on the document weren't in fact acted
 13 on, were they?
 14 A. I didn't follow through, no.
 15 Q. Did you know that Post Office had not acted on the
 16 recommendations in this document when you wrote your
 17 reports, either of them?
 18 A. I cannot recollect exactly what I knew or did not know,
 19 but I have not paid attention to whether the Post Office
 20 actually acted on the recommendations because, as I say,
 21 user interface issues are very complicated and
 22 I hesitate to be an armchair critic, if you like, of
 23 somebody's user interface design and what steps they
 24 took to improve it. That is a complicated issue when
 25 you look at -- say somebody said "We can improve the

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1 design. What do we do about it? Let's run some
 2 trials ". And what's the virtue of changing the design
 3 versus the virtue of keeping it stable? For all those
 4 postmasters who are using it perfectly correctly, you
 5 want to keep user interface stable over the years. So
 6 there are those trade-offs, all of which I haven't
 7 looked at.
 8 Q. Last question. Despite having done a lot of work on
 9 user interfaces, you didn't actually try to analyse how
 10 user friendly or prone to mis-keying the interfaces
 11 were, did you?
 12 A. I felt it was a difficult thing to do precisely for the
 13 reason I have said --
 14 Q. Yes or no?
 15 A. No, I did not.
 16 MR GREEN: Thank you very much.
 17 Is that a convenient moment, my Lord?
 18 MR JUSTICE FRASER: I think it is. This doesn't affect you,
 19 Dr Worden. But if you want to go back to that
 20 spreadsheet, I suggest one of your colleagues or you
 21 maybe -- I would say based on my experience of the
 22 bigger documents when I access them from my desk, five
 23 minutes is probably ...
 24 Thank you, 2 o'clock.
 25 (1.00 pm)

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1 (The short adjournment)
 2 (2.00 pm)
 3 MR GREEN: Dr Worden, at 2 minutes past 1 today we received
 4 a big spreadsheet about ARQ requests in 2013. Is the
 5 number of ARQ requests something that you know much
 6 about?
 7 A. No.
 8 Q. Okay, I will leave that.
 9 MR JUSTICE FRASER: Did that come with a covering letter, by
 10 any chance?
 11 MR GREEN: I think there may be one, my Lord.
 12 MR JUSTICE FRASER: All right. Let's move on.
 13 MR GREEN: I'm most grateful.
 14 Picking up where we left off before lunch. Can
 15 I ask you please to look at {F/1848.8/1}.
 16 A. This is the big spreadsheet, is it?
 17 Q. Yes, it is the big spreadsheet. This seems relatively
 18 old in the sense it was disclosed on 31st May of this
 19 year, but it is a draft input and information -- it is
 20 "Draft Input & Information Provided to Support the
 21 Post Office Internal Process" -- sorry, this is the
 22 wrong one. Sorry. Can we get 1848.8.1, please? We
 23 will come back to the table in a minute. We are after
 24 {F/1848.8.1/1}, please.
 25 MR JUSTICE FRASER: Are you looking at the common screen?

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1 MR GREEN: Yes.
 2 MR JUSTICE FRASER: Is that not what you were expecting?
 3 MR GREEN: No. My Lord, it is a normal document.
 4 {F/1848.8.1/1}. That's very kind, thank you.
 5 Now, you see this is a -- this document is headed
 6 "Draft Input & Information Provided to Support
 7 Post Office Internal Process".
 8 A. Yes.
 9 Q. Now, this is a document relating to an incident on
 10 4th March 2019.
 11 A. Right.
 12 Q. So it is a recent matter in that sense.
 13 A. Yes.
 14 Q. And if we look at page {F/1848.8.1/2} and we look at the
 15 box that says "What's the issue?", do you see that?
 16 A. Right, okay.
 17 Q. Just pause. Have you seen this document before or not?
 18 A. I think there is something familiar about it actually.
 19 I remember being puzzled about the phrase
 20 pre-announcement interface and I'm still puzzled about
 21 it.
 22 Q. Okay. Let's just see what we can understand about it:
 23 On 4th March an incident was raised that there were
 24 failures in the pre-announcement interface to Horizon.
 25 "The result of this was that branches had to

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1 manually key the value of pouches received into Horizon
 2 on receipt, rather than scanning a barcode for automatic
 3 population of data including the value."
 4 A. Yes.
 5 Q. "This led to some manual keying errors where the wrong
 6 value was keyed into Horizon."
 7 A. Yes. So pre-announcements are something to do with
 8 remming cash.
 9 Q. Let's not focus too much on pre-announcement, let's look
 10 at what the problem is, if we may?
 11 A. Sure.
 12 Q. Let's take that bit in stages. The advantage of having
 13 a scanner and a barcode is that if the system is working
 14 correctly it will correctly rem in that patch?
 15 A. Yes.
 16 Q. So in a sense, that is a desirable aspect of a system in
 17 general?
 18 A. Yes.
 19 Q. And that wasn't working, we can see?
 20 A. As a result of the pre-announcement failure, yes.
 21 That's interesting.
 22 Q. So the branches had to manually key the value of the
 23 pouches received into Horizon on receipt?
 24 A. Yes. So they had to count the cash, it feels like --
 25 Q. No, they had to key in the value.

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1 A. So there is a label which says --
 2 Q. Yes. Okay? This led to some manual keying errors where
 3 the wrong value was keyed into Horizon.
 4 Then if you look in the "Impact", it says:
 5 "Branch: some manual keying errors resulting in
 6 overstated sterling or foreign currency positions."
 7 Yes?
 8 A. Yes.
 9 Q. You see there is no number of branches identified there,
 10 next to that?
 11 A. That is right, yes.
 12 Q. And under "Impact" you see in brackets:
 13 "Include number of branches impacted and the detail
 14 of the impact."
 15 A. Yes.
 16 Q. And the financial accounting impact is:
 17 "Holdings at branches needed to be corrected."
 18 A. Yes.
 19 Q. So at this stage what is showing on the face of the
 20 Horizon system is wrong as a result of what has
 21 happened?
 22 A. Yes.
 23 Q. And it says:
 24 "Some manual keying errors ..."
 25 Yes?

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1 A. Yes.
 2 Q. Resulted -- as a result the wrong value was keyed in,
 3 yes?
 4 A. Yes.
 5 Q. Just pausing there. Would you regard that happening as
 6 a problem with the system or would that be the
 7 subpostmaster to blame? From your perspective as
 8 an expert looking at the reliability of the system?
 9 A. Well, obviously failures in pre-announcement is some
 10 sort of failure in the system which causes a higher
 11 propensity to keying errors.
 12 Q. Yes. And it looks from that at least that the keying
 13 errors might be those of the SPMs?
 14 A. Yes, it sounds like it.
 15 Q. If we look at page {F/1848.8.1/3} and we go down to the
 16 entry on 8th February:
 17 "This communication to all branches had already been
 18 sent based on a previous incident, reminding them not to
 19 enter decimal places and to take extra care when
 20 entering remittances manually."
 21 A. Yes.
 22 Q. What they say there is:
 23 "When entering a sterling (notes/coin) or foreign
 24 currency Remittance manually onto Horizon NEVER enter
 25 the value by including a decimal point followed by two

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1 zeros.”
 2 A. Yes.
 3 Q. That’s quite a common way of putting numbers into
 4 systems, isn’t it?
 5 A. I must admit it looks strange to me, because I think
 6 somewhere else in this document you get quite a big
 7 error if you put the decimal points in.
 8 Q. Let’s look at that. You are obviously familiar with the
 9 document?
 10 A. I have seen the document before, yes.
 11 Q. So taking it in stages, if we may. From a design
 12 perspective if you want to avoid errors of this type,
 13 that set up is not really as you would have designed it
 14 Dr Worden yourself, is it?
 15 A. As I say, I’m very afraid of taking a user interface
 16 decision myself, but it does seem strange to me, yes.
 17 Q. It is bizarre, isn’t it, actually?
 18 A. I don’t know. There must have been some reason for not
 19 entering decimal points. I don’t know what the reason
 20 might be.
 21 Q. Let’s have a look. What he says is:
 22 “Doing so will result in incorrect totals being
 23 entered ...”
 24 MR JUSTICE FRASER: Where are you?
 25 MR GREEN: This is at the bottom of that box, do you see?

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1 On page 3.
 2 A. Which box?
 3 MR JUSTICE FRASER: 8th February 2019.
 4 A. Ah yes, sorry.
 5 Q. Sorry, it’s slightly --
 6 A. “Doing so will result in incorrect totals being entered
 7 ... extra care ...”
 8 Yes.
 9 Q. Do you see:
 10 “Doing so will result in incorrect totals being
 11 entered. Please take extra care when entering
 12 remittances in manually.”
 13 Yes?
 14 A. Yes.
 15 Q. If we go over the page, please {F/1848.8.1/4}, you can
 16 see the 5 March. Do you see that?
 17 A. Yes.
 18 Q. “This communication to all branches was sent following
 19 the new pre-announcement interface issue:
 20 “We have seen a higher than normal number of
 21 incidents where Foreign Currency remittances did not
 22 auto populate which required branches to manually key
 23 the amount into Horizon. As a consequence of this we
 24 have become aware of some branches mis-keying either the
 25 wrong currencies and/or amounts into Horizon which will

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1 result in a mis-balance in branch at declaration stage.
 2 This will also mean that your automated currency
 3 replenishments will be affected.”
 4 And so forth.
 5 At the bottom it says:
 6 “A general remainder for all branches to take extra
 7 care if they are required to manually enter remittance
 8 values into Horizon.”
 9 Do you see that?
 10 A. Sorry, I’m just reading the bullets in between.
 11 Q. Please do.
 12 A. Right, okay.
 13 Q. Now there’s no hint there that the problem is about the
 14 missing decimal point, is there, on the 5th?
 15 A. This announcement to the branches doesn’t seem to
 16 mention the decimal point issue explicitly, I agree with
 17 that.
 18 Q. If we look, please, over the page {F/1848.8.1/5}, we
 19 have got on -- sorry, can we just go back.
 20 {F/1848.8.1/4}
 21 When it printed out, my Lord, ours looks different.
 22 Just give me one second.
 23 If you look on 4th March at the bottom of that page,
 24 do you see:
 25 “Formal incident ... raised during back office

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1 transformation early life support and issued to
 2 Fujitsu.”
 3 Yes?
 4 “Status Update”?
 5 A. Yes.
 6 Q. Then if we go forward, please, a page {F/1848.8.1/5},
 7 you will see there that there is -- if we look at
 8 6th March 2019, if you look down you will see -- they
 9 are not in order, but there is a second 6th March 2019
 10 saying:
 11 “Report showing list of failed pre-announcements
 12 requested --”
 13 A. Oh, yes. It messes the order around.
 14 MR JUSTICE FRASER: Sorry, where are you reading?
 15 A. After the 7th it goes back to the 6th again.
 16 MR GREEN: Yes. Do you see that?
 17 A. “... list of failed pre-announcements requested, to be
 18 cross checked against branch rem-ins.”
 19 Q. Yes. If we go over the page {F/1848.8.1/6}, we can see
 20 what the errors actually look at -- look like from
 21 branches that have reported a keying error?
 22 A. Yes. And the interesting thing here is some of them are
 23 a factor of 100 and some of them are a factor of 10,
 24 I think.
 25 Q. Which one is a factor of 10?

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1 A. 3,500 booked as 35,000.
 2 Q. So there appears to be one that looks as though it might
 3 be a factor of 10, but all the others are a factor of
 4 100 --
 5 A. -- I haven't checked it out but there's both there, yes.
 6 Q. So it looks like, for the most part, entering in
 7 10,000.00 euros gives you a mis-keying error by entering
 8 instead 1,000,000 euros?
 9 A. You usually get a factor of 100.
 10 MR JUSTICE FRASER: There are at least two that are a factor
 11 of 10, I think. Meliden Road and New Quay.
 12 Q. But for the most part it looks like they are mostly
 13 multiplied by 100?
 14 A. Yes. And I suppose the factor 10 could be where they
 15 have entered one decimal point.
 16 Q. It might be. That is not an ideal design, is it?
 17 A. It doesn't seem good to me. The only remark I would
 18 make is this was something that was not part of the
 19 mainstream design. The mainstream design was do the
 20 barcode.
 21 Q. Understood. But the barcode failed, and as a result the
 22 system was designed in such a way that if people entered
 23 in what's a perfectly reasonable approach to entering in
 24 a number, they risked a multiplication of the sum by 10
 25 or 100.

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1 A. I agree, this feels strange to me. But I hesitate to do
 2 armchair design of user interfaces.
 3 Q. But I'm not talking about armchair design of user
 4 interface, I'm saying if their report of how the system
 5 reacts is right, that is going to enter into the system
 6 an incorrect figure --
 7 A. Yes, yes.
 8 Q. -- and the figure on the system will be wrong?
 9 A. Yes.
 10 Q. And it will then have to be corrected by a transaction
 11 correction?
 12 A. Well, there's two safety nets here. There's TCs, if it
 13 is discovered centrally, and there's also the daily cash
 14 count which would also pick it up.
 15 Q. I'm not talking about discovery, I'm saying it has to be
 16 corrected by a TC. That's what they say in --
 17 A. Not necessarily -- oh, yes, I think if you are doing
 18 a cash count and you see a discrepancy, you don't -- do
 19 you correct it at the time? I'm not sure. But the
 20 postmaster would see a discrepancy in his daily cash
 21 count.
 22 Q. If you can't reverse a rem in and there is an error, if
 23 you take it from me, on the premise that you can't
 24 reverse a rem in, if that is right --
 25 A. Well, on Dalmellington they did reverse rems.

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1 Q. Let's take it in stages. If you can't reverse a rem
 2 in --
 3 A. If you can't.
 4 Q. -- it has to be corrected by a transaction correction?
 5 A. And you may well ask for one, you say.
 6 Q. If you can, there is an opportunity if you spot it
 7 potentially for the subpostmaster to do it?
 8 A. Yes.
 9 Q. What we know here is that the subpostmaster reported
 10 a keying error, and we can see in this document that, if
 11 we look back at page {F/1848.8.1/2}, in
 12 "Financial/Accounting Impact":
 13 "... needed to be corrected."
 14 Do you see that?
 15 A. Yes.
 16 Q. And if we go forward one page to 27 February,
 17 {F/1848.8.1/3}.
 18 A. I have the 28th.
 19 Q. There we are. Do you see on 27 February:
 20 "Branches who called the to report the issue were
 21 advised to declare the correct cash on hand at branch.
 22 Branches who have made keying errors will receive
 23 transaction corrections processed by the FSC."
 24 A. Yes.
 25 Q. So it is right, isn't it, Dr Worden, that first of all

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1 what we have there is a defect in the system in that the
 2 scanner remming in didn't work?
 3 A. The announcements somehow caused that, yes.
 4 Q. But we had a defect, yes?
 5 A. It does seem to be.
 6 Q. And that caused subpostmasters to have to manually enter
 7 in the figures?
 8 A. Yes.
 9 Q. And do you accept that having that decimal point problem
 10 is also a defect in the system?
 11 A. As I say, it seems a strange user interface to me.
 12 Q. Yes. But come on, it is a defect?
 13 A. It is not good.
 14 Q. It is a defect?
 15 A. I hesitate to say it is wrong. It probably is wrong.
 16 Q. Thank you.
 17 If we can finally look at what I have got as page
 18 {F/1848.8.1/5}, it is 7 March 2019. Let's go back to
 19 that, please.
 20 We looked at this. If you look at the bottom
 21 populated row, 7/3/19.
 22 A. Yes.
 23 Q. "Issue discussed at BOT Steerco. Action logged to follow
 24 up with Fujitsu requested to confirm process and
 25 controls in place to ensure that this is proactively

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1 managed in the future.”
 2 That doesn't suggest necessarily a fix, does it?
 3 A. I would have to read the whole thing. And I agree that
 4 if the coder -- supposing there was some error in code,
 5 supposing pre-announcement failure was an error in code
 6 somewhere, which I don't know, and supposing that had
 7 been fixed, then this last comment is -- I would have to
 8 take time to try and understand what that meant.
 9 Q. In your experience of systems of this sort, when we
 10 looked at the communication to the branches, which
 11 didn't actually spell out the decimal point problem
 12 immediately afterwards, is that how you have seen people
 13 generally communicate with their users in the past?
 14 A. Well, I think earlier in here we saw some say -- some
 15 statement that says you must advise the branches not to
 16 do the decimal point. Then we saw another announcement
 17 which didn't refer to the decimal point. And again
 18 I would like to untangle what those two mean together.
 19 Q. Dr Worden, the short point is this: the earlier one
 20 referred to in the 8th February 2019 specifically says:
 21 "... NEVER enter the value by including a decimal
 22 point followed by two zeros."
 23 A. Can we go back to that and see what the status of that
 24 sentence is?
 25 Q. By all means. It is on page {F/1848.8.1/3}, I hope. Do

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1 you see the guidance to the word "never" in capitals?
 2 A. So some communication to branches had been sent on
 3 a previous incident, and that's what's said about the
 4 decimal point, but on this one they didn't for some
 5 reason.
 6 Q. Yes. So we can see what was said on the previous
 7 incident, highlighting the problem and telling people to
 8 avoid a decimal point, yes?
 9 A. Yes.
 10 Q. After the problem actually causing some quite big
 11 discrepancies, the communication that they actually send
 12 out on 5 March, on the next page --
 13 A. Sorry, can we go back. I was just reading that page.
 14 Q. I think we have done 8th February.
 15 A. I'm reading the 18th now.
 16 Yes. Okay, thank you.
 17 Q. {F/1848.8.1/4}. So the 18th February one doesn't say
 18 anything about the decimal point?
 19 A. No, but I think what we seem to have is the 8th February
 20 says don't do this, and the 18th February says if you
 21 have done this and there is a problem, do this.
 22 Q. Well, what it doesn't say is that the problem is
 23 actually -- I mean, if you look at the way it is phrased
 24 in the second line, it says:
 25 "As a consequence of this we have become aware of

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1 some branches mis-keying ..."
 2 A. I'm on the wrong page.
 3 Q. Sorry, go up, please. {F/1848.8.1/3}
 4 MR JUSTICE FRASER: Are we looking at the 5th March entry?
 5 MR GREEN: We are trying to look at the top of the 18th
 6 February, my Lord.
 7 MR JUSTICE FRASER: We need to go back to page 3, please.
 8 A. Right.
 9 MR GREEN: So let's look at the second line there. Well,
 10 let's read the whole thing:
 11 "We have seen a higher than normal number of
 12 incidents where Foreign Currency remittances did not
 13 auto populate which required branches to manually key
 14 the amount into Horizon. As a consequence of this we
 15 have become aware of some branches mis-keying either the
 16 wrong currencies and/or amounts into Horizon ..."
 17 A. Yes.
 18 Q. They don't say that's because of a failure with the
 19 system itself --
 20 A. Sorry, they then say or they don't say?
 21 Q. It does say it didn't auto-populate?
 22 A. Yes.
 23 Q. Then it says:
 24 "As a consequence of this we have become aware of
 25 some branches mis-keying either the wrong currencies

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1 and/or amounts into Horizon which will result in
 2 a misbalance in branch at declaration stage."
 3 A. So this announcement is covering two cases, an error in
 4 the number and an error in the currency.
 5 Q. Well, the announcement is referring to two cases which
 6 we don't seem to see any examples of in the list?
 7 A. We don't in the ...? Sorry, I missed that.
 8 Q. We didn't see any examples of that in the list at the
 9 back here?
 10 A. No, we didn't. We saw amounts only in the list.
 11 Q. And it doesn't refer to the problem with the decimal
 12 point, does it?
 13 A. This one doesn't. As I say, the 8th February says --
 14 Q. Take it in stages. We know the 8th does. This one
 15 doesn't. There has just been an incident. What is
 16 happening is if you put in a decimal point and two zeros
 17 on Horizon in a way that you have accepted is wrong, it
 18 adds the two zeros or the one zero to the number, and it
 19 doesn't say that?
 20 A. This announcement doesn't say that. This announcement
 21 says when this damage has been done here's what you do.
 22 Q. And if you want users to be able to diagnose what is
 23 going wrong, you need to tell them what the problems
 24 with the system are candidly, don't you?
 25 A. I demur from that. Telling users about problems in the

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1 system is -- can be too much information. Telling users
 2 what to do is what I think is most useful.
 3 Q. So were they right or wrong to mention the decimal point
 4 the first time?
 5 A. They were right.
 6 Q. Were they were right or wrong to not mention it the
 7 second time?
 8 A. I don't know.
 9 Q. Dr Worden, when there's just been a flash of people
 10 getting £900,000 discrepancies, things like that, if you
 11 are being candid you say: this is due to a fault, or
 12 whatever you want to call it, in the system by which the
 13 decimal point is ignored?
 14 A. You might say that --
 15 Q. If you were being candid you would --
 16 A. If we return to the point that the first announcement
 17 was don't do this, and the second announcement was if
 18 you have got problems from either amounts or the right
 19 currency here's how to fix them, here's how to sort it.
 20 So the purpose of the two announcements are rather
 21 different and I don't know enough background to say that
 22 the decimal point point should have been repeated.
 23 Q. Let's go to the table, the Excel spreadsheet, which I
 24 think very kindly we have very got prepared to come up,
 25 which is what we were going to look at before. This is

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1 the one that you had a bit of a poke around in?
 2 A. Yes.
 3 Q. To get the table that you have referred to, and we will
 4 have a look at it in a minute, at table 9.3 in your
 5 report?
 6 MR JUSTICE FRASER: Can you just remind me of the trial
 7 bundle reference of this.
 8 MR GREEN: Certainly, I was just about to read it out
 9 {D3/1/208}.
 10 MR JUSTICE FRASER: No, the one on the common screen.
 11 MR GREEN: I apologise, my Lord. It is {F/987/1}.
 12 MR JUSTICE FRASER: Okay.
 13 MR GREEN: You went down to look for the relevant table to
 14 use and had a look around.
 15 A. Yes, but obviously the most relevant table was the one
 16 that appeared in my report.
 17 Q. I understand. That was the one you felt was most
 18 relevant?
 19 A. Yes.
 20 Q. And if we go down to row 46, please?
 21 A. That's a header.
 22 Q. Yes.
 23 A. "Volume net value."
 24 Q. That is the table you reproduced?
 25 A. That's it, okay. The numbers look familiar.

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1 Q. Yes?
 2 A. Yes.
 3 Q. That's the one you reproduced, and it is to do with
 4 branch errors, isn't it?
 5 A. Yes.
 6 Q. You did not reproduce the table immediately below it
 7 which is for other errors, did you?
 8 A. That's true, yes.
 9 Q. Why not?
 10 A. Well, why would I have wanted to? (Pause)
 11 For completeness it would have been useful but
 12 I felt -- as far as the distribution of TCs and the
 13 distribution of erroneous TCs, but I agree I could well
 14 have quoted that last table and it would have been
 15 useful to do so --
 16 Q. I'm going to ask you to give his Lordship a candid
 17 answer: was that a mistake or was it deliberate?
 18 A. It certainly wasn't deliberate. It wasn't, if you like,
 19 an oversight or a wrong editorial decision, if you like.
 20 But the question I'm asking myself is how that adds to
 21 the information?
 22 Q. Isn't it obvious, Dr Worden? TCs that do not arise from
 23 what even Post Office regards as branch errors might be
 24 highly relevant to any analysis that you might wish to
 25 conduct?

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1 A. Well, my intent in looking at this top table was to get
 2 an idea of the proportions. Now, if we find that the
 3 proportions in the bottom table radically alter the
 4 overall proportions, then that is a problem. But I was
 5 looking at the proportion -- what I was looking at was
 6 how big is this, how big is that, and so on. And indeed
 7 I overlooked some issues in my first report. I didn't
 8 spot the fact that Santander online banking, while small
 9 in volume was huge in value, and that's an important
 10 point in my second report.
 11 So I was looking for overall proportions to say what
 12 are the important things here.
 13 Q. If we just look, the bottom table is the table that even
 14 in Post Office's mind relates to TCs which were not
 15 branch errors?
 16 A. Yes, absolutely.
 17 Q. It is rather what this litigation is concerned with,
 18 isn't it?
 19 A. No, I do not think so. That is not -- TCs arising from
 20 other areas is TCs arising from something not in the
 21 branch, but that TC is probably correct and therefore
 22 not imputed on the branch.
 23 Q. So cash remits to branches, 2011/12 out-turn. The fact
 24 that there are 4,093 TCs, which even in Post Office's
 25 mind are not the result of a branch error, is not

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1 relevant to your analysis of how the system works?
 2 A. Well, 4,000 as opposed to 21,000 in the table above. It
 3 is an interesting figure, that, and I hadn't really
 4 drawn my attention to it at the time of my first report,
 5 I agree.
 6 Q. We know that. That is the premise of my question. When
 7 you answered my earlier question you said it was either
 8 an oversight or an editorial decision.
 9 A. I was not very conscious of that second table. In other
 10 words, I said what's the table to put in as the summary
 11 of the proportions, and I chose that table.
 12 Q. The word "chose" suggests it was a conscious choice
 13 between the two. It wasn't. You just found one and
 14 popped that in --
 15 A. I found one which I thought was indicative of the
 16 proportions and I used that one, yes.
 17 Q. Let's move on.
 18 Now, you gave evidence earlier I think, and I think
 19 this is common ground, that you and Mr Coyne adopted
 20 slightly different approaches. You adopted more of
 21 a top down --
 22 A. The whole thing, to the whole --
 23 Q. Yes. And started the architecture and looked into the
 24 KELs, and Mr Coyne was looking through the KELs and
 25 PEAKs and so forth trying to identify --

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1 A. Well, I should say I started the architecture, looked at
 2 the processes and looked at the KELs, yes.
 3 Q. I think you started with the 75 documents Mr Jenkins
 4 gave you?
 5 A. That is right, there was an early tranche --
 6 Q. Was he able to describe those documents and what to look
 7 at when you spoke to him?
 8 A. No, it wasn't Mr Jenkins who gave me those 75. I had
 9 this early tranche of documents which was mainly high
 10 level architecture stuff.
 11 Q. Do you know who those were provided by?
 12 A. Just lawyers said "Look at these", you know, it was
 13 really early months.
 14 Q. I see. And in the second --
 15 A. I mean they said "More's coming but here's something to
 16 go on".
 17 Q. I understand. In the second joint statement I think you
 18 and Mr Coyne, if we look at {D1/2/28}, that's the second
 19 joint statement. If we look on page 28 at item 1.8.
 20 A. "Extent".
 21 Q. You make the point at 1.8 with regard to extent, yes?
 22 A. Yes.
 23 Q. You say:
 24 "In order to address Horizon issue 1, it is
 25 necessary to define measures of the extent of bugs with

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1 possible impact on branch accounts."
 2 A. Yes.
 3 Q. So you appreciated that was necessary for the purpose of
 4 Horizon Issue 1?
 5 A. That's my view, yes.
 6 Q. And having some sort of idea for the order of magnitude
 7 of something is obviously quite a good starting point,
 8 isn't it?
 9 A. Yes.
 10 Q. Is it 1 or 10 or --
 11 A. Also, I mean not only the question is it 1 or 10, but
 12 what's the scope with which -- in other words, if I'm
 13 asking a question about likely, what is the scope of
 14 likely that is interesting?
 15 Q. We will come to that. But if you look at a particular
 16 bug and you are just looking to try and identify the
 17 data, it is helpful to know whether it affects one
 18 branch alone or perhaps 10 or 20?
 19 A. Absolutely, yes.
 20 Q. Because that is a significant difference for the
 21 purposes of what you might infer from it. And we agreed
 22 on Tuesday that if it has actually impacted a branch and
 23 the branch accounts, it obviously had the potential to
 24 do so. Yes?
 25 A. I agree with that, yes.

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1 Q. But in order to have the potential to do so it is not
 2 necessary to find that it actually did in a particular
 3 case?
 4 A. I think potential is wider than actual, yes.
 5 Q. Exactly. I want in a moment to take you to some of the
 6 bugs specifically and go through them, but can I just
 7 clarify one point first in relation to paragraph 650 in
 8 your first expert report at {D3/1/153}.
 9 A. 650, I will just get that. Yes, "Receipts/Payments
 10 Mismatch". Okay, that is the beginning of the analysis
 11 of the receipts/payments mismatch, yes.
 12 Q. If we look at page {D3/1/153}, you will see there that
 13 in paragraph 650 you are referring to the receipts and
 14 payments mismatch issue, yes?
 15 A. Yes.
 16 Q. You refer to where it is in Mr Coyne's report, you say:
 17 "It involved a bug in Horizon which was triggered by
 18 a rare circumstance (which one would not expect to be
 19 exercised in testing) and which had an effect on branch
 20 accounts."
 21 Then you say:
 22 "If Mr Godeseth's evidence about this bug is not
 23 accepted, I shall revise my opinions accordingly. They
 24 are based on written evidence - particularly on a
 25 written analysis by Gareth Jenkins ..."

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1 Yes?
 2 A. Yes.
 3 Q. "... as well as the second witness statement of
 4 Mr Godeseth."
 5 Pausing there. Were they not also based on the
 6 conversation you had specifically had with Mr Jenkins
 7 about the receipts and payments mismatch bug?
 8 A. That helped to clarify my understanding of the
 9 documents. I could read the documents I think with
 10 a little more confidence once Mr Jenkins had explained
 11 some things. I was particularly interested in double
 12 entry accounting and how that applied and the
 13 conversation with Mr Jenkins did clarify that.
 14 Q. What was Mr Jenkins able to add that we don't find in
 15 the documents, if anything?
 16 A. It was not so much that he added anything, it was that
 17 I had -- not in the documents -- I had started from my
 18 own experience and my own thoughts about system design
 19 and I had thought double entry accounting might be
 20 applied in a certain way. And it appeared, it emerged,
 21 as Mr Jenkins' document made clear, and he I think
 22 reinforced to me, that double entry accounting is not
 23 applied to the roll over in quite the way I had
 24 understood.
 25 Q. And what was the difference between what you had

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1 understood and what he told you?
 2 A. That certain operations in the roll over were not double
 3 entry.
 4 Q. And which were those?
 5 A. It was to do with calculating a final month figure from
 6 an initial month figure and adding all the transactions,
 7 as I recall. I realised, reading Mr Jenkins' document
 8 again in the light of that conversation, that double
 9 entry accounting was applied in Horizon in more
 10 complicated ways than I had understood.
 11 Q. Did you set that out -- set out that more nuanced
 12 understanding in your report somewhere?
 13 A. I believe I did. If we look at DEA in this section
 14 I believe we will find the reference to the fact that
 15 DEA -- here we are. 654.2 is pretty much it.
 16 Q. That's what came from Mr Jenkins, did it?
 17 A. That's what came from my final understanding of the
 18 documents, having had a few words from Mr Jenkins which
 19 made it clearer to me and made me think about how double
 20 entry accounting might be applied in such a system and
 21 the fact that, for accumulation exercises like that, it
 22 may well be sensible not to apply double entry
 23 accounting in the kind of direct way which I had first
 24 thought was appropriate. So this was a matter of my
 25 experience versus the documents, if you like.

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1 Q. So you were expecting double entry accounting to apply
 2 across the board and you discovered --
 3 A. I was expecting it to be more comprehensive and more
 4 immediate. Obviously at the end it applies because it
 5 goes to POLSAP, and POLSAP does (inaudible) accounting,
 6 but I was expecting it to be rather more immediate.
 7 Q. Within Horizon you were expecting?
 8 A. Yes.
 9 Q. And what other operations were apparently not double
 10 entry operations? Can you remember?
 11 A. I can't think of any off the top of my head but my
 12 feeling is that customer transactions are double entry.
 13 Q. You can't remember others that aren't?
 14 A. I can't remember offhand.
 15 Q. That's a fair answer. Sorry, that is a matter for his
 16 Lordship.
 17 So can we look now please at Callendar Square --
 18 just before we move off receipts and payments mismatch,
 19 Mr Jenkins didn't give you any details on the phone of
 20 how and exactly when and indeed whether every single
 21 person in the receipts and payments mismatch bug had
 22 actually been compensated, did he?
 23 A. No, we didn't talk about that aspect.
 24 Q. So you have no more information about that than we have
 25 in the documents?

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1 A. No.
 2 Q. If you can move to Callendar Square, please. Can
 3 I understand, when you wrote your first report you had
 4 obviously had to look into some of these bugs?
 5 A. Yes.
 6 Q. And you had been told about how many by Post Office in
 7 your instructions?
 8 A. Well, I had been told about the three. I was looking
 9 for more. But the three were the three obviously that
 10 were a focus of those --
 11 Q. And they were the three acknowledged bugs that
 12 Post Office had acknowledged in its letter of response?
 13 A. Yes.
 14 Q. So the suspense account bug?
 15 A. Yes.
 16 Q. Callendar Square?
 17 A. Yes.
 18 Q. And the receipts and payments mismatch?
 19 A. That is right.
 20 Q. No one at Post Office had told you about any other bugs?
 21 A. I wasn't relying on Post Office to tell me about bugs or
 22 Fujitsu. I mean I was relying on me digging around.
 23 Q. So you were left to see if there were any more than
 24 those three and dig around?
 25 A. That was the exercise I understood I was doing, yes.

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1 Q. I understand. If we look please at {D3/1/156} in your
 2 first report, and if we look at -- just to give you
 3 context to see where you are, do you want to go back to
 4 the previous page, very kindly, just to show Dr Worden.
 5 {D3/3/155}
 6 Dr Worden, you can see this is under your heading
 7 8.6.2, "The Callendar Square ..."
 8 A. Can I just remind myself.
 9 Okay, yes.
 10 Q. Okay? Over the page at 663 {D3/3/156}, after describing
 11 how stock would disappear from the sending stock unit
 12 and not appear in the receiving stock unit, which is
 13 662:
 14 "... a failure of double entry accounting which was
 15 not evident to the subpostmaster at the time."
 16 You go on to deal with this .
 17 So this is another aspect, isn't it, in which on
 18 this occasion there was a failure of double entry
 19 accounting rather than an absence of double entry
 20 accounting, is that fair to distinguish between the two?
 21 A. I'm not quite sure. I mean, a failure rather than
 22 an absence ...
 23 Q. Well, what I'm really asking you is in relation to your
 24 conversation with Mr Jenkins you told the court that you
 25 identified an issue there where the operation concerned

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1 was not governed by double entry accounting?
 2 A. Yes.
 3 Q. And here, on the face of it, it looks as if this did
 4 not -- you can see, if you look at 663 you see:
 5 "In my opinion, under the later Horizon Online
 6 software this failure of DEA might have been immediately
 7 manifest as a failure to send a zero-sum basket to the
 8 BRDB. But in old Horizon, apparently it was not
 9 immediately detected, so in this respect Old Horizon was
 10 possibly less robust than Horizon Online."
 11 A. Yes.
 12 Q. That follows from 662 where you have identified that the
 13 result of the problem, which was a time out or locking
 14 problem somewhere inside the Riposte product, was that
 15 the stock would disappear from the sending stock unit
 16 and not re-appear in the receiving stock unit?
 17 A. Or there might be a double -- I think it might have come
 18 in twice on some occasions as well.
 19 Q. Just focus on this point that you are dealing with at
 20 662 first, if we may. You say at 662:
 21 "... a failure of double entry accounting which was
 22 not evident to the subpostmaster at the time."
 23 A. That is right, yes.
 24 Q. Just pausing there. What actually is happening is that
 25 what Horizon is showing on the system is wrong?

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1 A. Showing to whom? You mean storing in its database?
 2 Q. Yes. What Horizon is recording is wrong?
 3 A. Yes, I think so. I mean I think Callendar Square
 4 typically was, you would transfer out of a stock unit
 5 once and because of these Riposte problems you might
 6 transfer in twice.
 7 Q. Okay. Let's look. You see at 662, the sentence I'm
 8 asking you about is on the second line, after the dash:
 9 "... a failure of double entry accounting ..."
 10 Yes?
 11 A. Yes. I mean double entry accounting is something goes
 12 out of one stock unit into another and they must exactly
 13 balance, so if they go in twice, as appears to happen at
 14 Callendar Square, that is a failure of double entry
 15 accounting, yes.
 16 Q. Yes. Because the initial failure was not evidence to
 17 the subpostmaster, you say that at 662?
 18 A. Yes. He didn't see it immediately and it wasn't brought
 19 to his attention straightaway.
 20 Q. Exactly.
 21 So let's look at 664 and you say:
 22 "While the failure was not immediately visible to
 23 the Subpostmaster at the time of the stock transfer, it
 24 would always be visible later when balancing stock
 25 units."

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1 A. Yes.
 2 Q. You see that?
 3 A. Yes.
 4 Q. You say, referring to Mr Godeseth:
 5 ""It was also, as Mr Godeseth says at paragraph 13.7
 6 of his Second Witness Statement, soon visible to Fujitsu
 7 in two different ways (a flag from overnight processing,
 8 and a system event)."
 9 Yes?
 10 A. Yes.
 11 Q. And you identify that as potentially one of your
 12 robustness measures?
 13 A. Yes.
 14 Q. You then say:
 15 "So in the normal course of events, the
 16 Subpostmaster would see a discrepancy of some large and
 17 easily identifiable sum (because stock unit transfers
 18 generally involve larger sums than customer
 19 transactions) and would know, since he had not made any
 20 mistake to call the help desk. This was countermeasure
 21 MID."
 22 A. Manual inspection by the postmaster of his stock, yes.
 23 Q. Yes. So the point you are making there is that what you
 24 have described at 665 is the countermeasure of manual
 25 inspection of data?

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1 A. That's a part of it. It can be manual inspection by
 2 lots of different people.
 3 Q. Yes.
 4 A. It can be back office or it can be the postmaster or --
 5 Q. And you say:
 6 "As is shown by the PEAKs, the presence of the
 7 Riposte error was easily identifiable from system logs
 8 so the help desk would know it was not a user error and
 9 Post Office could correct any discrepancy if it arose in
 10 the branch accounts."
 11 A. Yes.
 12 Q. It actually doesn't sound that bad?
 13 A. Well, we always have this issue of if there is
 14 a discrepancy, how obvious is it and therefore how much
 15 can one infer about whether it is likely to have been
 16 corrected or not? And receipts/payment mismatch, which
 17 I think this eventually led to, is a pretty prominent
 18 red flag to Fujitsu. And so a lot of receipts/payment
 19 mismatches I would expect -- you see them in PEAKs when
 20 they occur and you see the amount involved, so I would
 21 expect on a high proportion of cases generally
 22 R/P mismatches would be sorted out.
 23 Q. On 662 you fairly observed it wouldn't be evident to the
 24 subpostmaster at the time, that's when it happens, yes?
 25 A. That is right.

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1 Q. If we go over the page to 667 {D3/1/157}, you say there:
 2 "At paragraph 15 of Mr Godeseth's Second Witness
 3 Statement, he says that this bug had impact on branch
 4 accounts in 20 [branches]."
 5 Yes?
 6 A. Yes.
 7 Q. You then go on to reason as follows:
 8 "For the receipts/payments mismatch bug, there is
 9 evidence that affected branches were compensated."
 10 A. Yes.
 11 Q. We will come back to that.
 12 "Because of this evidence, and because Fujitsu could
 13 always spot any occurrence of the bug in event logs, and
 14 because neither Post Office or Subpostmaster wanted
 15 Subpostmasters to suffer shortfalls from bugs in
 16 Horizon, I would expect the Subpostmaster to be left
 17 with a shortfall (i.e. not compensated) in only a small
 18 minority of cases, if any cases."
 19 A. Yes.
 20 Q. Now, pausing there, have you actually seen any evidence
 21 of any actual repayments to the subpostmasters and
 22 subpostmistresses who suffered in the receipts and
 23 payments mismatch bug?
 24 A. No, I've seen that there was careful tabulation of the
 25 discrepancies, that's all I've seen. The actual

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1 compensation process is outside the PEAKs and so on,
 2 so --
 3 Q. Let's have a quick look while we're on the point and
 4 then we can take a break, if we may, when I finish this
 5 point, my Lord.
 6 {F/1001/1}. You have seen this document?
 7 A. When it comes.
 8 MR JUSTICE FRASER: Is it 1001/1 we are going to?
 9 MR GREEN: It is, my Lord.
 10 A. This one, yes. Fine.
 11 Q. "Receipts/Payments Mismatch issue notes". Attendees are
 12 from service delivery, security, network, IT, POL
 13 finance and Fujitsu:
 14 "Discrepancies showing at the Horizon counter
 15 disappear when the branch follows certain process steps,
 16 but will still show within the back end branch account.
 17 This is currently impacting circa 40 Branches since
 18 migration onto Horizon Online, with an overall cash
 19 value of circa £20k loss."
 20 A. Yes.
 21 Q. Do you see that?
 22 A. Yes.
 23 Q. If we go over the page {F/1001/2}, we see halfway down:
 24 "Note the Branch will not get a prompt from the
 25 system to say there is Receipts and Payment mismatch,

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1 therefore the branch will believe they have balanced
 2 correctly."
 3 Do you see that?
 4 A. Yes.
 5 Q. This is just a subpoint in relation to receipts and
 6 payments mismatch. That is not the system alerting the
 7 subpostmaster or subpostmistress to what's going on, is
 8 it?
 9 A. I agree that is different from other cases where I think
 10 receipts and payments mismatch shows in a trial balance
 11 or something that the postmaster sees.
 12 Q. Honestly, Dr Worden, does that bit take you by surprise?
 13 A. It does a bit actually.
 14 Q. I'm grateful.
 15 My Lord, is that a convenient moment to pause?
 16 MR JUSTICE FRASER: Yes. Come back in at 3 o'clock.
 17 (2.52 pm)
 18 (A short break)
 19 (3.00 pm)
 20 MR GREEN: So Dr Worden, just picking up where we were
 21 before the break, this was in the context of your
 22 inference for the purposes of Callendar Square that
 23 given the experience in the payments mismatch case, you
 24 had confidence broadly in the matter being corrected.
 25 A. I would say when an R/P mismatch is evident, in my view

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1 there is a high probability that it will be sorted out,
 2 the effects will be sorted out.
 3 Q. I understand. Just to clarify the position, if we look
 4 at this document that we are looking at now {F/1001/3},
 5 if we go back up one page, please {F/1001/2}, just under
 6 "Impact" it says --
 7 A. Sorry, can I -- sorry to do this, but can I go back.
 8 {F/1001/3}
 9 The statement that surprised me said the branch will
 10 not get a prompt from the system.
 11 Q. Yes, that's just above.
 12 A. So he has to look at two numbers to see there is
 13 a mismatch rather than it being hidden from him.
 14 Sorry about that. Let's get on, sorry.
 15 Q. Isn't the true position on receipts and payments
 16 mismatch that it will appear to balance when it hasn't?
 17 Isn't that the real problem? Not that he has to look to
 18 find out, it is not just the absence of a prompt.
 19 A. I do not think that's it. I think there is -- he gets
 20 a report and it has receipts on it and payments on it
 21 and the two figures are not the same.
 22 Q. Well, this receipts and payments mismatch issue is not
 23 that, Dr Worden. Look at the very page we are looking
 24 at now. {F/1001/2}
 25 A. Yes.

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1 Q. The sentence I was about to take you to, under "Impact":
 2 "The branch has appeared to have balanced ..."
 3 A. Okay, yes. Sorry about that.
 4 Q. "... whereas in fact --"
 5 A. "Appeared to have balanced" seems to be that it appears
 6 to balance, yes.
 7 Q. Pausing there. It wouldn't be apparent to the branch,
 8 would it?
 9 A. It sounds like it, yes.
 10 Q. And that's a fundamental point about this bug?
 11 A. It doesn't appear to the branch.
 12 Q. Yes.
 13 A. Yes.
 14 Q. If we look what they say underneath, they say:
 15 "Our accounting systems will be out of out of sync
 16 with what is recorded at the branch."
 17 A. Yes, so --
 18 Q. That's obvious?
 19 A. RDS will pick it up.
 20 Q. And it says:
 21 "If widely known could cause a loss of confidence in
 22 the Horizon System by branches."
 23 A. Yes.
 24 Q. "Potential impact upon ongoing legal cases where
 25 branches are disputing the integrity of Horizon data."

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1 A. Yes.
 2 Q. "It could provide branches ammunition to blame Horizon
 3 for future discrepancies."
 4 A. Yes, okay.
 5 Q. You see those?
 6 A. Those last three points are kind of ramifications on --
 7 Q. Now, if you are going to rely on your users to help you
 8 monitor what's going on with the system, is being candid
 9 with them about a clear problem to be expected for that
 10 countermeasure to work properly?
 11 A. Yes, but I think for a problem one has to decide in
 12 terms of communication with users how many are affected
 13 and how many are likely to be affected and whether
 14 therefore you are going to confuse the great majority of
 15 users by telling them about some problem that occurs to
 16 a tiny minority. So there are trade-offs there about
 17 how you communicate with users.
 18 Q. And in terms of the inferences you might draw in your
 19 professional opinion about the effectiveness of the
 20 approach we see on this page?
 21 A. Yes. So the approach is?
 22 Q. Post Office's approach to this on this page appears to
 23 be regarding at least as material or influential factors
 24 worries about loss of confidence in the Horizon system
 25 if it gets out that this has happened, ongoing legal

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1 cases, and branches getting ammunition to blame Horizon
 2 for future discrepancies.
 3 A. Yes.
 4 Q. Would you normally expect those factors to feature in
 5 your idea of the UEC countermeasure of how it should
 6 work ideally?
 7 A. Those three bullet points are kind of psychological
 8 points about how it would influence mindsets and they
 9 don't seem to me to have a very direct bearing on UEC.
 10 Could you spell it out?
 11 Q. Dr Worden, I probably didn't ask the question well
 12 enough.
 13 If Post Office is being held back from telling
 14 people about established bugs in the system on that
 15 basis --
 16 A. I see.
 17 Q. -- they are not making the best use of UEC, are they?
 18 A. I see. So you are saying that these psychological PR
 19 implications in their mind may influence their decision
 20 whether to talk candidly with users.
 21 Q. That appears to be the case. It is what they are
 22 saying.
 23 A. Well, they are saying here are some impacts. They are
 24 not saying these impacts affect our decision. They are
 25 pointing out that here is a possible impact.

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1 I'm not being ingenious, really .
 2 Q. You might have given the game away there.
 3 Dr Worden, the reason they are listing those impacts
 4 is because they are the impacts they had in mind in
 5 weighing up what to do, because you can see the next
 6 heading is "Identifying the issue and forward
 7 resolution".
 8 They are factors to which they are giving more or
 9 less weight but they are factors?
 10 A. They are factors that they are pointing out in this
 11 summary of the whole impact of the incident. I'm not
 12 clear whether they are saying these factors affect our
 13 decision how to communicate with postmasters, I can't
 14 draw that inference --
 15 Q. Okay. Let's go over the page to {F/1001/3}. Top line:
 16 "The Receipts and Payment mismatch will result in an
 17 error code being generated which will allow Fujitsu to
 18 isolate branches affected this by this problem, although
 19 this is not seen by the branches."
 20 A. Yes. This is the 902s and 903s I think referred to.
 21 Q. And the "not seen by the branches" appears to confirm
 22 what we have seen on the page above?
 23 A. Yes.
 24 Q. They say:
 25 "We have asked Fujitsu why it has taken so long to

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1 react to and escalate an issue which began in May."
 2 A. Yes. So this is about September, isn't it?
 3 Q. September/October time.
 4 A. Right.
 5 Q. And they are going to provide feedback.
 6 If we just go down, the next paragraph begins
 7 "Fujitsu", the one after that says:
 8 "The code fix will on stop the issue occurring in
 9 the future, but it will not fix any current mismatch at
 10 branch."
 11 A. Yes, I think it is obvious that you can't go backwards.
 12 That fix is a code fix for future, yes.
 13 Q. So the state of play as at the date of this document,
 14 before they have decided what to do with affected
 15 branches, is that the Horizon system is recording the
 16 wrong figures. There is a difference between the
 17 figures that the Horizon system is recording and the
 18 ones at POLSAP which it should be recording?
 19 A. There are discrepancies, yes.
 20 Q. And the Horizon system has the wrong figures on them?
 21 A. There are lots of figures around the place. Some of
 22 them are wrong, yes.
 23 Q. Look at "Proposal for Affected Branches", if you would:
 24 "There are three potential solutions to apply to the
 25 impacted branches, the groups recommendation is that

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1 solution two should be progressed."
 2 So that is just the recommendation at this stage.
 3 "Solution one - alter the Horizon branch figure at
 4 the counter to show the discrepancy."
 5 So that would be, it looks like, dialling into the
 6 counter and altering the figure that would show on the
 7 counter?
 8 A. "... alter the ... branch figure at the counter to show
 9 ..."
 10 It is not clear to me which branches that applies to
 11 at any given moment.
 12 Q. They are talking about impacted branches as we can see,
 13 because the heading says "Proposal for Affected
 14 Branches", and the line underneath says:
 15 "There are three potential solutions to apply to the
 16 impacted branches."
 17 So we know they are talking about the branches that
 18 have been affected by this bug, don't we?
 19 A. Yes.
 20 Q. Then they say:
 21 ""Solution one - alter the Horizon branch figure at
 22 the counter to show the discrepancy. Fujitsu would have
 23 to manually write an entry value to the local branch
 24 account."
 25 A. Yes, that looks like, as you say, remotely going into

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1 the branch.
 2 Q. Okay, so that is something they were able to do and were
 3 considering doing?
 4 A. That was a possibility yes.
 5 Q. "Solution two - P&BA will journal values from the
 6 discrepancy account into the Customer Account and
 7 recover/refund via normal processes. This will need to
 8 be supported by an approved POL communication. Unlike
 9 the branch 'POLSAP' remains in balance albeit with an
 10 account (discrepancies) that should be cleared."
 11 Yes?
 12 A. Yes.
 13 Q. "Impact - Post Office will be required to explain the
 14 reason for debt recovery/refund even though there is no
 15 discrepancy at the branch.
 16 "Risk - could potentially highlight to branches that
 17 Horizon can lose data."
 18 A. Yes.
 19 Q. So we can see that that is the adverse factor militating
 20 against solution two?
 21 A. Yes.
 22 Q. Notwithstanding at this stage there were recommending
 23 solution two, yes?
 24 A. Yes, and they're saying solution two has this drawback
 25 in that it draws attention.

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1 Q. Yes. And then:
 2 "Solution three - It is decided not to correct the
 3 data in the branches (ie Post Office would prefer to
 4 write off the 'lost'.
 5 "Impact - Post office must absorb circa £20K loss.
 6 "Risk - Huge moral implications to the integrity of
 7 the business, as there are agents that were potentially
 8 due a cash gain on their system."
 9 So the point is although Post Office can decide what
 10 it wants to do as one corporate body, there are lots of
 11 different post offices and sub-post offices involved.
 12 Some will have losses, some will have gains?
 13 A. Yes, I can't fully interpret solution three.
 14 Q. Okay. The short point we get from this document,
 15 Dr Worden, is that the correction of what had gone wrong
 16 was not automatic exactly, was it? It was discretionary
 17 as to how they did it and whether they do it?
 18 A. Yes, but this does refer to "recover/refund via normal
 19 processes", as though there were processes to do it.
 20 Q. It is not that there weren't processes. The question,
 21 which I think you fairly accepted, was it was
 22 discretionary rather than automatic?
 23 A. Well, they were choosing how to sort it out. They had
 24 three ways --
 25 Q. And that was a discretionary choice that they had?

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1 A. They had a choice of three ways to sort it out, yes.
 2 Q. Now if we look at the joint statement for a moment
 3 {D1/4/5} at 3.22.
 4 A. Yes:
 5 "... the same effects as a user error ..."
 6 Yes.
 7 Q. What you and Mr Coyne agreed is:
 8 "Many software bugs can have the same effects as
 9 a user error (as illustrated, for instance, by the
 10 Dalmellington bug, which produced a remming error)."
 11 A. Yes.
 12 Q. And a remming error might look like a user error?
 13 A. Absolutely.
 14 Q. And that's why you refer to that?
 15 A. Yes.
 16 Q. Pausing there. I think you were here for Angela Van Den
 17 Bogard's evidence, can you remember?
 18 A. I do not think I was, actually. Sorry about this. But
 19 I certainly read the transcripts.
 20 Q. Did you see a reference to UEB in her cross-examination?
 21 A. No, you would have to take me to it.
 22 Q. User error --
 23 A. Oh, UEB. It is a strange acronym.
 24 Q. Yes, user error bias. It was put to her whether she
 25 accepted that Post Office suffered from UEB or user

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1 error bias from time to time in relation to --
 2 A. I have never seen that acronym myself.
 3 Q. I understand. But for the moment if it is right that
 4 Post Office suffers from user error bias in its dealings
 5 with subpostmasters, it is quite important, isn't it, in
 6 the context of what you and Mr Coyne have agreed at
 7 3.22, because you have agreed that many software bugs
 8 have the same effects as user error. So they look
 9 similar, and then the subpostmaster is faced with
 10 dealing with an organisation that has a bias in favour
 11 of assuming it's user error when they look the same?
 12 A. If a software bug looks like a user error, the resilient
 13 processes will compensate regardless of which one it is.
 14 Q. Let's have a look and consider this in a little bit more
 15 detail. If we go please to {H/6/3}, turning to
 16 Callendar Square now. This is a letter of
 17 11 January 2017.
 18 A. Yes.
 19 Q. If we look at page 3 of this letter, do you see 7.8.1 at
 20 the top of the page?
 21 A. Yes.
 22 Q. This is Post Office's solicitors, Wombles, writing to
 23 the claimants' solicitors in January 2017.
 24 A. Yes.
 25 Q. And there they say:

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1 "The Falkirk/Callendar Square issue was only known
 2 to have affected that one branch."
 3 A. Yes.
 4 Q. And you have identified that it affected 20 branches in
 5 your report, that is correct?
 6 A. Yes.
 7 Q. If we look at how the Callendar Square story develops.
 8 If we look at {F/297/1}, please. You are just going to
 9 be given a hard copy of this, Dr Worden. This is
 10 PC0126042. If we just go down to -- do you see
 11 15/09/50, 10.28, just after halfway down?
 12 A. "Unable to find relevant KEL."
 13 That one?
 14 Q. Yes. And underneath "Unable to find relevant KEL" is:
 15 "Information: Faye at nbcs states that she went
 16 through 2 hours of checks."
 17 A. Yes.
 18 Q. If we go down to "Recommend", which is about seven lines
 19 down from the bottom?
 20 A. Yes:
 21 "Please investigate ..."
 22 Q. " ... as to why the stock unit aa on node 3 and node 4
 23 are showing varied amounts on counter daily reports."
 24 If we go over the page very kindly {F/297/2}, we
 25 have got at the top "Stock units vary on counters."

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1 Sorry, it is not stock units, "SU cash amounts vary on
2 counters".

3 A. Yes.

4 Q. And we come down to the fifth box, "Cheryl Card",
5 underlined.

6 A. Yes.

7 Q. 15 September 2005 at 16.12.27:

8 "Due to the Riposte errors on 14/09/05 from 15:30
9 onwards (see call E-0509140700), messages were not
10 replicated on counter 3. As a result, 3 transfers in to
11 stock unit AA were done twice, initially on other
12 counters then again on counter 3. The transfers in were
13 for:

14 "3000.00 (cash)
15 "400.00 (cash)
16 "89.69 (cheques)
17 "This has resulted in a loss of 3489.69 in CAP 25 to
18 the outlet, which POL may need to correct via an error
19 notice."

20 A. Yes.

21 Q. "Phoned the PM to explain what the problem was. He is
22 concerned about other transactions which he has input
23 twice (3 Giro deposits and another cheque) because of
24 the replication problem. Have advised him to contact the
25 NBSC as this is a business issue."

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1 Do you see that?

2 A. Yes.

3 Q. We know eventually that it was actually a bug?

4 A. Yes.

5 Q. But what he is being told here is at least for part of
6 this to contact the NBSC because it is a business issue?

7 A. Yes. I mean what seems to have happened here is that
8 because he had this stock problem which was caused by
9 a bug the postmaster started thinking I need to re-enter
10 these transactions, which was not to do with the bug.
11 He thought I have to re-enter these transactions. So it
12 is a little confused to me.

13 Q. The approach you have taken in your report is that
14 Post Office would -- you say:

15 "Neither Post Office or subpostmaster wanted
16 subpostmaster to suffer shortfalls from bugs in
17 Horizon."

18 A. Yes.

19 Q. Because that was in paragraph 667 which I took you to.

20 A. 667.

21 Q. It is on page 157. If we go back to that for a second.

22 A. Yes.

23 Q. You say there:

24 "Neither Post Office or subpostmaster wanted
25 subpostmaster to suffer shortfalls from bugs in

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1 Horizon."

2 Yes? And it is obviously right that subpostmasters
3 didn't want to suffer shortfalls, did they?

4 A. That is right.

5 Q. But if Post Office was gaining money at the expense of
6 subpostmasters --

7 A. Yes.

8 Q. -- that in itself would not be an incentive to try and
9 give the money back, would it?

10 A. Well, I was asked to consider Post Office's motivations,
11 and in that context I think that one of Post Office's
12 motivations is to keep down the administrative problems
13 of things recurring and not being sorted, and if you
14 don't sort the discrepancy and the postmaster keeps
15 coming back and so on, your admin costs will soon rise.
16 So it is a complicated -- there is a lot of motivations
17 at play there.

18 Q. There are a lot of motivations at play. If
19 subpostmasters are, let's say hypothetically, pressured
20 to pay regardless of who is at fault and they just pay
21 up because of the way they are asked, hypothetically,
22 that reduces your admin costs a lot, and if they have
23 suffered a loss you don't have to give the money back,
24 so that meets two objectives?

25 A. That is part of the trade off. There will be the ones,

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1 as you say, that just knuckle under and take it, and the
2 ones that keep banging the table will cost you a lot of
3 money.

4 Q. Just on that point, were you aware of any general
5 Post Office suspense accounts in --

6 A. Central suspense accounts?

7 Q. Yes.

8 A. Yes, there are I believe, and they may be to do with all
9 the dealings with some client.

10 Q. Okay. Well, what about -- because elsewhere in your
11 report, I don't want to stray too much at the moment,
12 but you also mention micro bugs, small bugs, being
13 unlikely because you would expect to see large sums of
14 money somewhere --

15 A. Money that disappears somewhere has to pop up --

16 Q. It's got to come back somewhere else, it's got to pop up
17 somewhere else.

18 Have a look at {F/333.1/1}, please. Dr Worden, I'm
19 asking you just to look at this to see whether you were
20 aware that an issue had been raised about it, not
21 evidence of it itself, yes?

22 A. Yes.

23 Q. This is the Second Sight report which you must have
24 seen?

25 A. The part two report I have seen, yes.

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1 Q. You have. Let's look at page {F/1333.1/46}, please, and
 2 if we look at 22.11.
 3 A. Yes. (Reading to self)
 4 Q. It says:
 5 "We note that Post Office's control and
 6 reconciliation procedures rely on correct information
 7 being supplied by third party clients. It follows that,
 8 if incorrect information is provided by any client
 9 company, this can give rise to a loss being charged to a
 10 branch. We also note that, for most of the past five
 11 years, substantial credits have been made to Post
 12 'Offices Profit and Loss account as a result of
 13 unreconciled balances held by Post Office in its
 14 Suspense Account."
 15 Now I'm not asking you about that as evidence of
 16 itself, I'm just asking were you aware that that was
 17 a concern that Second Sight had raised about substantial
 18 credits being made to Post Office's profit and loss
 19 account as a result of unreconciled balances held by
 20 Post Office in its suspense accounts?
 21 A. I read the Second Sight reports and the Post Office's
 22 reply.
 23 Q. But did you spot that?
 24 A. I didn't spot that, no.
 25 Q. Just whilst we are on that, if you will forgive me,

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1 going to the micro bugs point very briefly. If we look
 2 at {D3/2/211}.
 3 A. Yes.
 4 Q. This is appendix F 2, your appendix F 2, and we are
 5 going to look at paragraph 460 in relation to micro
 6 bugs.
 7 A. Yes.
 8 Q. You say:
 9 ""Because POLSAP uses double entry accounting, in my
 10 opinion any effect of micro-bugs on branch accounts must
 11 also show, aggregated over all branches, in some Post
 12 Office central account. If that effect were significant,
 13 then in my opinion it would inevitably have been noticed
 14 by some Post Office manager or external auditor."
 15 A. Yes.
 16 Q. But you weren't aware of what I have just shown you when
 17 you wrote that?
 18 A. No, no.
 19 Q. And having seen that now, that would be at the very
 20 lowest a line of enquiry that you would wish to follow
 21 up before continuing to hold the opinion you have
 22 expressed there?
 23 A. I would like to kind of reconcile those two paragraphs
 24 and work out how much I knew about Post Office central
 25 accounts and that is limited.

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1 Q. It would make a bit of a difference how substantial the
 2 sums were as well, wouldn't it?
 3 A. It would. I mean substantial -- one would like to know
 4 what are the sums that Second Sight were referring to
 5 versus what are the sums that micro bugs might add up
 6 to. One might want to make that comparison in order to
 7 drill further into that issue.
 8 Q. Dr Worden, can I bring you back now to Callendar Square
 9 because we are really looking at Callendar Square and
 10 how it starts in the context of what you said you would
 11 expect to happen.
 12 Now, I have shown you what happened on receipts and
 13 payments mismatch --
 14 A. Any receipts and payments?
 15 Q. No, the particular --
 16 A. The particular one, right.
 17 Q. And it was discretionary how they would approach it.
 18 I have shown you the existence of the suspense accounts.
 19 A. Yes.
 20 Q. Does either of those alter your expectation of how
 21 efficiently and helpfully the Callendar Square bug would
 22 have been dealt with?
 23 A. Sorry, which two points alter my expectation?
 24 Q. The fact that there is a suspense account into which
 25 unresolved unreconciled credits go and are ultimately

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1 credited three years later to Post Office's accounts,
 2 and the fact that it wasn't absolutely automatic that
 3 a transaction correction would be issued, as we have
 4 seen from receipts and payments mismatches. Do either
 5 of those alter your expectations about how elegantly the
 6 problem that Mr Alan Brown suffered at Callendar Square
 7 would be sorted out one way or the other?
 8 A. I think my opinion is if there is a receipts/payment
 9 mismatch it gets noticed in several ways and my opinion
 10 is there is a high probability that therefore it will be
 11 sorted out.
 12 Q. So it doesn't change your view?
 13 A. I do not think that view has changed, no.
 14 Q. I wanted to ask you that because it seems to bear on the
 15 introduction of your analysis of Callendar Square.
 16 Let's see what actually happens at Callendar Square.
 17 We have looked at the PEAK at {F/297/1}, if we go there
 18 you will see it. That was the one where he was
 19 concerned about other transactions, if you look on
 20 page 2, do you remember? It is in the fifth box down.
 21 {F/297/2}
 22 A. Yes, the postmaster had done some other transactions.
 23 Q. Which is input twice, three Giro deposits and other
 24 cheques because of the replication problem, do you see
 25 that?

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1 A. Yes.
 2 Q. That's what he is concerned about. Were you here,
 3 I think you said you were here when Mr Godeseth gave his
 4 evidence?
 5 A. Yes.
 6 Q. You heard I think me take him through the history of
 7 Callendar Square?
 8 A. Yes.
 9 Q. And if we look at {Day8/58:1}.
 10 A. Page 58, yes.
 11 Q. This was in the context -- do you remember that the
 12 suspense account team were not prepared to authorise the
 13 entry of part of the discrepancy into his suspense
 14 account, do you remember that?
 15 A. I don't recall that detail.
 16 Q. I can show you. But let's just, for the moment, look at
 17 his answer. I say:
 18 "Question: So it was not easy for the
 19 subpostmaster, was it?"
 20 MR JUSTICE FRASER: Before you do that, you really need to
 21 start at the bottom of page 57, I think.
 22 MR GREEN: My Lord, I'm happy to do that. Can we go up
 23 a tiny bit. {Day8/57:10}.
 24 A. Right, "the suspense account" probably means the
 25 suspense account for that branch?

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1 Q. Yes, it does. If I can help you with it possibly. Page
 2 57, line 10:
 3 "This office had severe problems balancing on
 4 [week] 25, resulting in a shortage of £6,414.46. After
 5 checking various reports I am satisfied that the error
 6 is made up of ...'
 7 "And they are then broken down carefully there and
 8 you can see that the SPMR is saying there is a Horizon
 9 software problem and so forth, giving the history ..."
 10 A. Can I ask what that quote is quoting from?
 11 Q. From the document we are just looking at. I can take
 12 you to the document, I'm just at the moment asking you
 13 whether you recall that this was the sort of problem
 14 that the Callendar Square subpostmaster, Mr Alan Brown,
 15 was faced with, or can you not really remember?
 16 A. Well, obviously he was faced with a shortfall, that's
 17 what I remember. Details of suspense accounts and so on
 18 are not so prominent in my mind.
 19 Q. Have a look at what -- the problem is if you look at
 20 line 18.
 21 A. Yes.
 22 Q. It says:
 23 "Question: Then speaking to the Horizon support
 24 centre at the bottom of the page. If we go over the
 25 page, please:

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1 "They told the SPMR that they would report to NBSC
 2 that they had identified and rectified the problem and
 3 that the amount could be held in the suspense account.
 4 However, as part of the shortage relates to transfers
 5 and no error notice will be issued, then the suspense
 6 Account Team are not prepared to authorise the entry.'
 7 So it wasn't easy for the subpostmaster, was it, you
 8 can see here?"
 9 And Mr Godeseth says:
 10 "Answer: No, indeed, a horrible position to be in."
 11 A. Yes.
 12 Q. So the picture that emerges from the documents in the
 13 case of Mr Alan Brown is not a rosy one, is that fair to
 14 accept?
 15 A. I believe so. I don't know what the suspense account
 16 team were talking about, why they were not prepared to
 17 do it and whether they thought some other mechanism was
 18 right.
 19 Q. Let's have a look at {F/300.1/1}. This is the area
 20 manager intervention log, you can there it is
 21 "19 September 2005 Horizon Problems".
 22 If we could go over the page, please {F/300.1/2}.
 23 You can see the amounts there broken down, £3,489.69
 24 transfers, £2,870 Giro deposits, and £54,52
 25 unidentified?

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1 A. Yes. Do we understand these are stock transfers that
 2 went in twice to some stock?
 3 Q. Exactly. You see there it says:
 4 "The Spmr claims that there was a Horizon software
 5 problem on 14.09.05 from 15.30 onwards. This was picked
 6 up when a member of staff noticed that a transaction,
 7 which had been taken by another member of staff, had not
 8 been entered onto the system, so therefore she put the
 9 transaction through. She checked at the time with her
 10 colleague who said that she thought she had put it
 11 through already however she accepted that she could have
 12 made a mistake."
 13 Pausing there. What's actually happening here is
 14 the fact that Horizon is not correctly displaying what's
 15 happened is misleading the staff in the sub-post office
 16 to make a mistake.
 17 A. What's happening is it is not replicating properly.
 18 Q. Yes. So just to be clear, the Horizon system is not
 19 showing correctly what has happened?
 20 A. Absolutely, because Riposte is not replicating when it
 21 is supposed to.
 22 Q. And we saw they had quite a lot of Riposte problems?
 23 A. A lot of Riposte problems?
 24 Q. -- chuck it over the fence to Escher?
 25 A. I mean there are a number of PEAKs and KELs and so on

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1 where Fujitsu say this is a Riposte problem, we need
 2 Escher to fix it. Callendar Square is not the only one.
 3 Q. If you look at the bottom of that paragraph, it says:
 4 "Following on from that, it was picked up that other
 5 giro business deposits that had been entered had not
 6 come up on the system, so they were re-keyed."
 7 Yes?
 8 A. Where is that below?
 9 Q. It is just at the end of that paragraph that we were
 10 looking at, the big paragraph. Three lines up from the
 11 bottom. "Following on from that", in the middle.
 12 A. "... it was picked up that other giro business deposits
 13 that had been entered had not come up on the system, so
 14 they were re-keyed."
 15 Yes.
 16 Q. So they were re-keyed as well?
 17 A. Yes.
 18 Q. So that is how we got the two lots, the two numbers we
 19 have seen.
 20 "There was also a problem with transfers from one
 21 stock to another, in that they had doubled up."
 22 A. Yes.
 23 Q. "The Spmr made several telephone calls to the NBSC,
 24 telling them about his problems and he was advised to
 25 carry on with balancing and produce his Cash Account."

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1 Yes?
 2 A. Yes.
 3 Q. Is that what, in your expectation of how this process
 4 should work, is that what you would expect to happen?
 5 A. Well I don't know the detail, but in many cases NBSC say
 6 don't try balancing, in some cases they do, and I don't
 7 know the exact rationale for one or the other.
 8 Q. He is told to produce this cash account.
 9 "Whilst doing this a warning came up, however the
 10 NBSC told the staff to continue to roll over. The result
 11 was that the office balanced £6,414.46 short."
 12 Do you see that?
 13 A. That is the sum, is it?
 14 Q. Yes:
 15 "The Spmr spoke to the Horizon Support Centre (ref
 16 E0509150123) who investigated and agreed that there had
 17 been a navigation problem that had now been rectified."
 18 A. Yes, not quite clear what that means.
 19 Q. Then:
 20 "They told the Spmr that they would report to NBSC
 21 that they had identified and rectified the problem and
 22 that the amount could be held in the suspense account."
 23 A. Can we go back, who are "they" now?
 24 Q. The Horizon support centre.
 25 A. Okay. Sorry.

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1 Q. Which is now run by Atos.
 2 A. Yes.
 3 Q. So:
 4 "However, as part of the shortage relates to
 5 transfers, and no error notice will be issued, then the
 6 Suspense Account team are not prepared to authorise the
 7 entry."
 8 A. Yes.
 9 Q. "I telephoned the suspense account team (Ann Wilde) ..."
 10 This is an SPM being assisted here by someone at
 11 Post Office.
 12 "... who told me that checks could be made with
 13 Girobank after next Wednesday, and if that shows that
 14 duplications have been made, then they will authorise
 15 the amount to be moved to the suspense account, until
 16 the office receives an error notice. However, Ann stands
 17 by what she said about the transfer problems, and that
 18 they would not move this amount to The Suspense
 19 Account."
 20 A. Yes.
 21 Q. Is that how you think the system should work?
 22 A. Well, there's obviously some policy about the suspense
 23 account team and how they work and how certain things
 24 are handled.
 25 Q. I understand, that's obvious. I'm asking --

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1 A. That's what Ann is quoting.
 2 Q. But was it your understanding when you were looking --
 3 did you even know that had happened at Callendar Square?
 4 A. Well, it seems to me that what's happening here is --
 5 Q. Can we just pause. Did you know about that?
 6 A. I was not aware of this detail, no.
 7 Q. In fact we see this in a number of the bugs, that you
 8 are not aware of a huge amount of the detail, is that
 9 fair?
 10 A. The procedural side of how someone was compensated for
 11 a bug and how this team pushed numbers around and so on,
 12 that procedural side is outside the PEAKs and generally
 13 not something I'm -- you know, how the suspense account
 14 team worked, what their policy was, what you could do,
 15 and so on, that sort of stuff I don't know.
 16 Q. But your expectation that it won't amount to a lasting
 17 discrepancy --
 18 A. Yes, is that this procedure will somehow work out and
 19 these teams will decide eventually: you do it, we do it,
 20 we have got to do it.
 21 Q. So you formed a view about how seamlessly or otherwise
 22 this would work and on the basis of that view reached
 23 your opinion about whether there would be lasting
 24 discrepancies or not?
 25 A. My view is that regardless of procedural issues like

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1 this, in the majority of cases if there is
 2 an R/P mismatch it will be sorted eventually.
 3 Q. You formed that view without knowing how the actual
 4 individual person at the Callendar Square branch after
 5 whom the bug is named was dealt with?
 6 A. I didn't know the details of this process.
 7 Q. So the answer is yes?
 8 A. I formed that view not knowing the details of this
 9 process.
 10 MR JUSTICE FRASER: Now Mr Green went through this in some
 11 detail with Mr Godeseth. Can you just remind me, were
 12 you reading the transcript for Mr Godeseth or were you
 13 here?
 14 A. I was here.
 15 MR JUSTICE FRASER: You were here?
 16 A. Yes.
 17 MR JUSTICE FRASER: Okay, Mr Green.
 18 MR GREEN: I will take it reasonably swiftly, if I may,
 19 given that you have not looked at it in this detail.
 20 MR JUSTICE FRASER: I do not think you need to put
 21 everything to this witness that you put to Mr Godeseth.
 22 MR GREEN: I'm certainly not going to do that, my Lord.
 23 Can I identify, please, that at {F/312.1/1}, just to
 24 take a couple of aspects of what happened. If we look
 25 at page 2 of that log -- sorry, page 1, I do

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1 apologise -- do you see at the top.
 2 A. (Reads to self)
 3 I see that's ... yes.
 4 Is AIO area intervention -- oh, A/O? What are they?
 5 MR GREEN: "Area intervention officer knows about it."
 6 A. All right, as opposed to manager --
 7 Q. If we go over the page, please {F/312.1/2} and look at
 8 "Expand on any letter requested/clarify any point",
 9 Do you see the second line:
 10 "Spmr concerned that he has now made a fraudulent
 11 entry in that he has rolled over to the next trading
 12 period and put the loss into local suspense he has then
 13 gone on to state that the cash has been made good, which
 14 it 'hasnt. This was done on the advice of the Helpdesk."
 15 A. Yes.
 16 Q. Now, that's because he is being forced to make good part
 17 of the cash that can't go into the suspense account.
 18 Did you know any of this?
 19 A. It seems to be so, yes.
 20 Q. Did you know any of it? Or should I take your answer
 21 before, that you didn't really know this detail?
 22 A. I haven't gone into this detail.
 23 Q. I understand.
 24 If we go quickly to a couple of other points and
 25 then I will move on {F/324.1/1}. This is a telephone

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1 contact, a response by SPM:
 2 "Telephoned the office and Allan said that he was
 3 having problems again with transfers. He has contacted
 4 the Horizon helpdesk who have subsequently come back to
 5 him to say that there is no system problem and that he
 6 should contact NBSC."
 7 Do you see that?
 8 A. Yes.
 9 Q. If we look quickly at {F/332.1/1}, "Response by SPM":
 10 "Alan will continue to log a call each time he has
 11 a problem. I told him that this would help to build
 12 a case for having the alleged faulty kit exchanged."
 13 A. Yes.
 14 Q. Then just taking it forward before I ask you a
 15 compendious question about these, {F/333.1/1}. Now,
 16 this is an email chain. And can I ask you to look
 17 please at page 11, which is where it begins
 18 {F/333.1/11}, and that is the end of an email from
 19 Sandra MacKay as you can see.
 20 If we to the next page quickly, you will see this is
 21 11 January 2006. If we go back to the email below, and
 22 you see at the top:
 23 "You may recall that in September the above office
 24 had major problems with their Horizon system relating to
 25 transfers between stock units the Spmr has reported that

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1 he is again experiencing problems with transfers,
 2 (05.01.06) which resulted in a loss of around £43k which
 3 has subsequently rectified itself."
 4 On your understanding of the Horizon system, is that
 5 something that should or should not happen if it is
 6 working correctly?
 7 A. I think it should not really.
 8 Q. No. If we go forward, please, to page {F/333.1/9}, if
 9 you look at the bottom of that do you see:
 10 "Since then it appears to have happened again,
 11 although Fujitsu are saying no issue could be detected.
 12 I am concerned that there is a fundamental flaw with the
 13 branches configuration ..."
 14 Do you see that?
 15 A. Yes.
 16 Q. So I mean I'm not going to take you through the whole
 17 thing, Dr Worden, but if we -- you would accept,
 18 wouldn't you, that the premise of everything being
 19 corrected is dependent on all these processes working
 20 properly and satisfactorily. That's uncontroversial?
 21 A. I do not think it is quite uncontroversial because in
 22 the process of trying to correct something, there will
 23 be false steps, and I think you have shown me evidence
 24 there have been false steps.
 25 In spite of that I would expect people to persist,

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1 as they you see them persisting here, until things are
 2 sorted out. So false steps on the way, yes, they do
 3 happen, but I would expect when there are false steps on
 4 the way people will persevere until they have got to the
 5 bottom of it .
 6 Q. There are about 30 branches identified in the document
 7 we have for Callendar Square.
 8 A. Yes.
 9 Q. And it suggests that probably 10 of them didn't have
 10 shortfalls ?
 11 A. Mm.
 12 Q. So that is how you have derived your figure of 20
 13 branches?
 14 A. Yes.
 15 Q. Did you get a feel in your reading into this problem of
 16 how long this problem had been around for and how many
 17 branches it was actually affecting ?
 18 A. Well, there is a real problem about the definition of
 19 what "this problem" is because there is the Riposte bug
 20 and then there's certain event storms which causes
 21 problems in replication , which may be short-term
 22 problems for a few minutes, and then there are event
 23 storms which make them long-term problems, and then
 24 there's what happens in event storms and in particular
 25 the double transfer in . So the whole of

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1 Callendar Square is those things all happening together,
 2 whereas I think some of the 20 PEAKs or 30 PEAKs,
 3 whatever, are different from that, different
 4 combinations.
 5 Q. Let's just go forward one last message in this line of
 6 emails, this is from Anne Chambers at {F/333.1/3}.
 7 I assume you didn't look at this before you did your
 8 report or before today?
 9 A. Sorry, which one? It has not come up yet.
 10 Q. Anne Chambers, halfway down. From Anne Chambers to
 11 Mike Stewart, 23rd February 2006?
 12 A. This is Anne Chambers, right, okay. I have not seen
 13 this email, no.
 14 Q. You have not seen it?
 15 A. No.
 16 Q. Because it might be quite helpful in getting a feeling
 17 for the scale of what was actually going on. It says in
 18 the second paragraph:
 19 "Haven't looked at the recent evidence, but I know
 20 in the past this site had hit this Riposte lock problem
 21 2 or 3 times within a few weeks. This problem has been
 22 around for years and affects a number of sites most
 23 weeks, and finally Escher say they have done something
 24 about it. I am interested in whether they really have
 25 fixed it which it why I left the call open - to remind

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1 me to check over the whole estate once S90 is live -
 2 call me cynical but I do not just accept a 3rd party's
 3 word that they have fixed something!"

4 Did you have even any conception that this was
 5 an issue which was affecting a number of sites most
 6 weeks for years when you formed the views you did about
 7 the significance of this problem?

8 A. Well, this is exactly the point. The Riposte lock
 9 problem leads to different things, and the Riposte lock
 10 problem leading through to that double transfer in thing
 11 is not the same as the Riposte lock problem.

12 Q. Okay. But just re-putting the question, if I may.

13 A. Yes.

14 Q. In forming the views that you did in your reports you
 15 were unaware of this email?

16 A. It looks a bit familiar actually .

17 Q. You said --

18 A. As I said, my view has always been that there is a chain
 19 of events and the Riposte lock problem, which is at the
 20 source of the chain, happens much more frequently than
 21 the whole chain.

22 Q. You were not aware of the scale of that problem as
 23 reported there when you wrote your reports, were you?

24 A. I expected the scale of the source, the Riposte lock
 25 problem, would be more extensive than the consequence

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1 which required the event storm and required the double
 2 transfer in and so on and so forth, and that must be
 3 more rare than the original Riposte lock problem.

4 Q. Dr Worden, one last attempt. You were not aware of this
 5 evidence about the scale of the Riposte lock problem
 6 itself when you wrote your report?

7 A. I was aware of some investigations by Anne Chambers and
 8 the fact that she was looking at this broader scope of
 9 Riposte lock problem, I was aware of that, and I was
 10 aware -- it was my opinion, it still is my opinion, that
 11 the origin of the chain, the Riposte lock problem, is
 12 more frequent, probably much more frequent than the
 13 whole chain occurring.

14 Q. The KEL that was raised in 2002 and updated in 2010 is
 15 at {F/565/1}. You did actually look at KELs, didn't
 16 you?

17 A. Not in this format actually .

18 Q. Can you remember if you looked at this KEL in any
 19 format?

20 A. I believe I did, yes.

21 Q. If we look at page {F/565/2}, please. February 2003,
 22 about three-quarters of the way down?

23 A. Yes.

24 Q. "We are seeing a few of these each week, on Wednesdays
 25 during balancing. This can lead to problems if the PM is

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1 balancing on the counter generating the events, as it
 2 may not have a full view of transactions done on other
 3 counters.”
 4 A. Yes, I mean this illustrates that the cause, the Riposte
 5 problem, has different consequences. For instance, it
 6 stopped transfers for instance in balancing. And what
 7 one expects, depending on the duration of the problem,
 8 obviously an event storm that leads to Riposte failing
 9 to replicate for a long period on some terminal is
 10 different from the lighter cases where Riposte fails to
 11 replicate for some short period, and maybe in balancing
 12 you miss some transactions done in on a terminal in a
 13 that short period. So there are all sorts of scales of
 14 possibility there.
 15 Q. Yes, and it varies?
 16 A. It varies, yes.
 17 Q. In June 2004 we see:
 18 “This event can also give rise to transfer
 19 problems.”
 20 Yes?
 21 A. Yes. This is the double stock thing.
 22 Q. If we go over the page {F/565/3}, at the top:
 23 “This problem is still occurring every week ...”
 24 September 2005.
 25 “ ... in one case at the same site on 2 consecutive

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1 weeks.”
 2 A. Yes, and that might be just a subpostmaster noticing he
 3 has a problem and saying -- ringing up.
 4 Q. If we look halfway down or just before, do you see the
 5 words “reboot” in capitals halfway down that large
 6 paragraph?
 7 A. Yes.
 8 Q. And then you see:
 9 “If they are in the process of balancing, it is
 10 strongly advised that they reboot before continuing with
 11 balancing as they are at risk of producing an incorrect
 12 balance. Warn the PM that if transactions appear to be
 13 missing, they should not be re-entered - they will
 14 become visible after the counter has been rebooted.”
 15 A. Yes.
 16 Q. Then it says:
 17 If a reboot/Cleardesk does not resolve this problem,
 18 send the call over for further investigation - SSC can
 19 rebuild the messagestore on the affected counter.”
 20 A. Yes.
 21 Q. So that ties in with what we have seen about the way
 22 messagestore was rebuilt by SSC, yes? It is
 23 an example --
 24 A. Yes, it is an example of rebuilding a messagestore.
 25 That sounds like the sort of full replication job.

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1 Q. Now, at Mr Godeseth’s second -- just before we move,
 2 they are, at the bottom of that page, still giving
 3 advice on this in 2010, aren’t they?
 4 A. Yes.
 5 Q. This was going on for quite a long time?
 6 A. This is on the message correspondence server and it is
 7 a different thing from failure to replicate in the
 8 branch.
 9 Q. Yes, it is another problem but in the same line --
 10 A. It may be the same, it may be different. I’m not quite
 11 sure.
 12 Q. Mr Godeseth at paragraph 15 of his witness statement, do
 13 you remember, he relies on the list from Mr Lenton. We
 14 see that at {F/322.1/1}. Do you remember that list?
 15 A. I’m not there yet. (Pause)
 16 This is the thing Anne Chambers put together,
 17 I think.
 18 Q. Yes. It turns out from the properties we can see it was
 19 Anne Chambers in 2015?
 20 A. Yes.
 21 Q. And what’s said there is:
 22 “NB many other branches had multiple events,
 23 preventing replication, but these are the majority of
 24 those which came to PEAK, having either reported
 25 a problem or it caused a reconciliation report entry.”

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1 Do you see that?
 2 A. Yes.
 3 Q. So this is a list of the majority retrospectively
 4 compiled by Anne Chambers in 2015?
 5 A. Yes.
 6 Q. So it does not suggest, does it, nor I think does
 7 Post Office or Fujitsu claim, that there was
 8 a systematic problem management system in place to
 9 collate everything into one place and produce this sort
 10 of data automatically?
 11 A. What do you mean by a systematic problem management
 12 process?
 13 Q. Well, we have seen reference to a problem management
 14 system that was considered to be brought in, and
 15 Post Office has given evidence that they didn’t bring it
 16 in, that would have produced information of this sort
 17 automatically and collated it?
 18 A. Well, no, that’s a rather different document in my
 19 opinion. The problem management document is a high
 20 level strategic generic document about all sorts of
 21 problems whereas this is a specific type of problem.
 22 Q. So she is having to go back in 2015 to try and identify
 23 the majority of branches affected?
 24 A. Yes. Obviously I’m not quite sure of what her search
 25 criteria were to pick these things up.

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1 Q. But fingers crossed?
 2 A. I don't know about fingers crossed at all, she was
 3 a pretty competent woman in my opinion so she would not
 4 wing it.
 5 Q. So she says the competent woman is trying to find -- she
 6 thinks she has got the majority of them?
 7 A. I think she would do the best that can be done and she
 8 has obviously picked up the receipts and payments PEAKs
 9 that have a connection with this kind of Riposte
 10 problem.
 11 Q. Look at the blue box at 26:
 12 "This set reported problems but probably didn't have
 13 losses as a consequence."
 14 A. Yes.
 15 Q. And because she says they "probably didn't have losses",
 16 that's why you have limited your number to 20, is that
 17 right?
 18 A. Yes.
 19 You see lots of consequences here like frozen slow
 20 counter and so on which PMs might report.
 21 Q. Yes. Let's have a look at Mr Godeseth's second report
 22 at paragraph 16, it is {E2/7/6}. At paragraph 16 on
 23 page 6 you will see there that Mr Godeseth says:
 24 "While the issue at Callendar Square was reported by
 25 the Subpostmaster after he spotted a receipts and

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1 payments mismatch, it would have been picked up in any
 2 event by a batch process that is run every night which
 3 picked up the mismatch ..."
 4 A. Yes.
 5 Q. But as we have seen, this is not something that's going
 6 to be corrected overnight, is it?
 7 A. I do not think so, no.
 8 Q. You would agree that it arose, from what you have seen,
 9 in or about 2000?
 10 A. Yes, the first occurrence of the Riposte problem I think
 11 was around there.
 12 Q. And it certainly persisted until 2006?
 13 A. I think so. It seems it wasn't finally fixed by Escher
 14 in all that time.
 15 Q. And it looks as if there may have been the same or
 16 a related problem in 2010 but we don't know exactly?
 17 A. We don't know.
 18 Q. Do you regard this as a significant failing in the
 19 system?
 20 A. It is obviously significant but what one means by that
 21 word ... It has been significant in this case,
 22 obviously, and in my investigations.
 23 Q. Riposte was part of the Horizon system, wasn't it?
 24 A. It was, absolutely.
 25 Q. Central to it and fundamental?

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1 A. It was part of the supporting software. It was like
 2 a database layer actually at the time.
 3 Q. But it was very important?
 4 A. It was very important. Replication was absolutely key
 5 to how it did it --
 6 Q. Now we discussed the difference, identifying the
 7 difference between a bug that has affected one branch
 8 and one that has affected ten?
 9 A. Yes.
 10 Q. And the Dalmellington bug affected 112 -- had 112
 11 occurrences over 88 branches?
 12 A. Yes.
 13 Q. That is pretty significant as a bug?
 14 A. It is significant in terms of the lasting effect is not
 15 significant.
 16 Q. We have your point on transaction corrections. We are
 17 trying to focus on the system first.
 18 A. It was a bug and it affected 112 branches, we can agree
 19 that.
 20 Q. Let's leave aside, if we may, your point on transaction
 21 corrections one day correcting something?
 22 A. Well, transaction corrections or reversals by the
 23 postmaster in this case.
 24 Q. Let's focus on whether the Horizon system itself goes
 25 wrong, and taking a view about that, at the beginning of

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1 the Callendar Square questions I asked you: it is
 2 important, isn't it, to get a feel for whether something
 3 has affected one branch or perhaps ten?
 4 A. Yes.
 5 Q. And you accepted that is a significant difference?
 6 A. Absolutely.
 7 Q. And it would be equally important to work out whether it
 8 has affected ten or 88?
 9 A. Yes.
 10 Q. And this bug did in fact cause errors in branch accounts
 11 that were then required to be corrected?
 12 A. Yes.
 13 Q. And so what Horizon was showing before it was corrected
 14 was wrong?
 15 A. Error correction was needed, yes.
 16 Q. What Horizon was showing before it was corrected was
 17 wrong?
 18 A. Yes.
 19 Q. Why did you not mention the number of occurrences and
 20 the number of branches in either of your reports? Is
 21 there a reason for that?
 22 A. Yes, there is a reason, and the reason is because the
 23 Dalmellington error was -- looked like a user error and
 24 was corrected in the normal event of things, it did not
 25 lead to Fujitsu investigations and PEAKs, and therefore

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1 the normal mechanisms for detection -- therefore my
 2 views about how many branches are affected and how
 3 Fujitsu can detect the number of branches affected are
 4 not affected by that, because Fujitsu were not called up
 5 about Dalmellington for good reason, because it looked
 6 like a user error of which there were 20,000 a year
 7 which got corrected.
 8 Q. Let's take it in stages. In trying to assess whether
 9 there was in fact a bug in Horizon which had the
 10 potential to affect a number of branches it is important
 11 to look at Dalmellington, isn't it?
 12 A. It is a useful example to look at, yes.
 13 Q. In your appendix at {D3/2/118}, appendix D3 to your
 14 first expert report, you are dealing with 62 KELs
 15 referred to by Mr Coyne, aren't you?
 16 A. Yes.
 17 Q. And at 5.23 is the Dalmellington KEL?
 18 A. Which I didn't recognise as Dalmellington at the time.
 19 Q. You didn't recognise it and you hadn't been told that
 20 there had been a Dalmellington bug by anyone?
 21 A. Well, I had read Mr Coyne's report which had three
 22 different references to Dalmellington but they weren't
 23 actually connected, and the reference to this KEL didn't
 24 say -- it was one of the three references that didn't
 25 say it is Dalmellington, so that's why I didn't

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1 recognise it as Dalmellington.
 2 Q. But you didn't recognise this was the Dalmellington KEL
 3 either, did you?
 4 A. No, I didn't obviously. It's not there. I recognised
 5 it was a remming KEL and so that was the basis of my
 6 opinion.
 7 Q. Now, you explain why you didn't recognise it in your
 8 second witness statement at page {D3/6/43} at
 9 paragraph 163.
 10 You say:
 11 "The reason I did not recognise that KEL acha621p
 12 related to Dalmellington was that I was responding to Mr
 13 Coyne's reference to the KEL - and in the two paragraphs
 14 in which he referenced the KEL (paras 5.23 and 5.130 of
 15 his report) he did not relate either of the paragraphs
 16 to Dalmellington (addressed at his paras 5.16 - 5.19),
 17 or to each other. It was not evident from Mr Coyne's
 18 report that these three separate extracts all referred
 19 to the same incident."
 20 Yes?
 21 A. Yes.
 22 Q. And so what we see in your table is you say that:
 23 "Any error will be corrected so there is no
 24 permanent effect on branch accounts."
 25 If we go back to {D3/2/118}.

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1 A. Let me just read that. (Pause)
 2 MR JUSTICE FRASER: Do you want on the common screen
 3 {D3/2/118}, Mr Green, is that right?
 4 MR GREEN: My Lord, yes, please.
 5 And you are looking at 5.23.
 6 A. Yes.
 7 Q. And third paragraph you say:
 8 "As above, when physical cash is counted and monthly
 9 balancing is done, any error will be corrected."
 10 As a result of that reasoning you conclude:
 11 "So there is no permanent effect on branch
 12 accounts."
 13 A. In this case there are several safety nets. There is
 14 the postmaster who recognises that he has done a double
 15 rem in and he reverses one rem. That's one safety net.
 16 Then there is the postmaster who does a cash count and
 17 recognises his cash is wrong and does some reversal.
 18 And finally there is a TC. So there are three safety
 19 nets there.
 20 Q. It is common ground that there were transaction
 21 corrections for the Dalmellington branches or at least
 22 most of them?
 23 A. I can't remember the exact numbers.
 24 Q. We will come to that.
 25 A. The report says they were fixed by either reversal or

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1 TC.
 2 Q. We will come to that.
 3 You say on your table just below there:
 4 "The Peak implies that the problem may have been
 5 around for some time. Some Subpostmasters spotted it and
 6 reversed the error immediately those who did not spot it
 7 would see the discrepancy later, when they counted cash,
 8 and have to correct it in their monthly balancing."
 9 You obviously had to look at the PEAK to form that
 10 view, didn't you?
 11 A. Well, I had a fairly general view that this is how cash
 12 transfers and remming work.
 13 Q. Pause there, Dr Worden. You say "The PEAK implies", so
 14 you must have read the PEAK?
 15 A. I did read the PEAK, yes.
 16 Q. It is not referenced in your table which PEAK it is, but
 17 you do reference other PEAKs. Is that just
 18 an oversight?
 19 A. Just an oversight.
 20 Q. Let's look at the KEL at {F/1426/1} please. You see the
 21 problem described there?
 22 A. Cash remmed in; recorded; yes.
 23 Q. "... received at an outreach branch and scanned into
 24 Horizon. The manual process was followed and 2 Delivery
 25 Receipts printed."

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1 Yes?
 2 A. Yes.
 3 Q. In the middle:
 4 "They were then able to press Enter again and
 5 another Rem In slip was printed -- And the same amount
 6 of cash was recorded a second time."
 7 A. Yes.
 8 Q. "They may have repeated several times before using
 9 Cancel to escape, resulting in much more cash being
 10 recorded on the system than they actually have."
 11 A. Yes.
 12 Q. You see at the bottom:
 13 "Known problem should now be fixed so any further
 14 occurrences need to be investigated - send call to
 15 Peak."
 16 A. Yes.
 17 Q. "Outreach branches can avoid the problem by making sure
 18 that they do not press Enter again after they have
 19 printed both Delivery Receipts and the Rem In slip - if
 20 they find the Rem In screen is still displayed, they
 21 should press Cancel to get out of it, ignoring the
 22 mental that not everything has been printed."
 23 Pausing there. The system is telling them that
 24 nothing everything has been printed which is why they
 25 are progressing rather than --

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1 A. The system is misleading them.
 2 Q. Correct. And it says:
 3 "However they are unlikely to notice immediately
 4 that they are on the wrong screen, and will probably
 5 Have duplicated the Rem In before realising
 6 something is wrong."
 7 A. Yes.
 8 Q. It says:
 9 "We have seen some outreach branches apparently
 10 resolve the problem by remming out the excess amount but
 11 NBSC should advise on this. The cause of the problem is
 12 being investigated but it will not retrospectively
 13 correct the accounts at affected branches."
 14 A. Yes. I think that is the usual statement that, fixing
 15 the code, we will do it in future but not for the ones
 16 that have already suffered from it.
 17 Q. At this stage you had seen the KEL. This doesn't
 18 actually say that transaction corrections will be
 19 issued, does it?
 20 A. KEL doesn't say that. No.
 21 Q. No. So on what basis when you were looking and writing
 22 your report did you know that these had all been
 23 addressed by transaction corrections?
 24 A. Well, at some stage I read the document which says here
 25 are 112 and so many had been fixed and so on and that

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1 was explicit, but before that my expectation was that
 2 this is how remming happens. There are 20,000 remming
 3 TCs per annum, therefore, my expectation is that that
 4 would have happened.
 5 Q. So you inferred from a KEL that didn't say it that
 6 transaction corrections would be issued?
 7 A. I mean very often one has to infer from KELs things that
 8 are not said. They are written by people who know
 9 things that we don't know and they are not sort of
 10 written for us.
 11 Q. You have spread that across other KELs which don't
 12 mention transaction corrections and reached the same
 13 inference, haven't you?
 14 A. I have made that same inference in several cases, yes.
 15 Q. And Mr Coyne found this bug by chance, didn't he?
 16 A. I can't remember.
 17 Q. Let's look at {D2/1/58}, paragraphs 5.16 to 5.19 on
 18 page 58. Here you can see there the Dalmellington bug
 19 at the foot of the page?
 20 A. Yes.
 21 Q. £24,000 discrepancy. Over the page {D2/1/59} we can see
 22 at 5.19 he concludes that:
 23 "The fact that Atos made a change to the Horizon
 24 system to prevent re-occurrence is therefore consistent
 25 with this being a software bug."

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1 A. Atos made a change to the Horizon system is a bit
 2 peculiar, but it is consistent with the fact that there
 3 was a bug(?).
 4 Q. So what Mr Coyne was doing was trying to identify
 5 whether there had in fact been a bug or defect in the
 6 Horizon system that had the potential to impact branch
 7 accounts here, yes?
 8 A. Yes.
 9 Q. And he seemed to think that that was relevant and he was
 10 right about that for that question?
 11 A. Well, I was looking for bugs which had a lasting effect
 12 on branch accounts and therefore we had different
 13 criteria.
 14 Q. If we look at {F/1394/3}. You can see there that it
 15 says:
 16 "Please can you help. A very strange case."
 17 October 2015. You can see it says there:
 18 "... the remittance team in Chesterfield are aware
 19 of this fault and can issue a transaction correction for
 20 the 'extra' remittances ... They can see that the one
 21 barcode accepted the £8000 remittance four times (even
 22 though there was one item). They are unable to issue a
 23 transaction correction to her Outreach as it doesn't
 24 have a unique number. My understanding is that they have
 25 told her if she rem's out to her core branch the

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1 non-existent £24,000 loss this error has created, they
 2 will correct/remove it from her suspense account.”
 3 So they are well aware of this in 2015 and if we
 4 look please --
 5 A. This is the Chesterfield team.
 6 Q. Yes. If we look please at {F/1425.1/1}. I'm not going
 7 to take you through this Dr Worden, but had you looked
 8 at this email before you wrote your report?
 9 A. It doesn't look familiar to me I must admit.
 10 Q. Let's go forward to {F/1495.2/1} please. This is
 11 an email looking into effectively the Dalmellington
 12 error which you see halfway down:
 13 "Subject: The Dalmellington Error in Horizon."
 14 A. Yes.
 15 Q. It says:
 16 "Dalmellington error in Horizon [then a vertical
 17 slash mark, then all one word] "problemwithpol". It is
 18 referring to a blog by Tim McCormack campaigning against
 19 PO and Horizon.
 20 A. Yes.
 21 Q. It says the blog is independent from Sparrow but clearly
 22 related and so forth --
 23 A. Sorry where are we?
 24 Q. Bottom paragraph --
 25 A. Sorry, I haven't got that blog independent paragraph.

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1 Where are we?
 2 Q. It is the bottom of the page.
 3 A. Right. "Independent of Sparrow" whatever Sparrow is.
 4 Q. It says:
 5 "I'm most concerned that we/our suppliers appear to
 6 be very lax at handling £24k. And want to know we've
 7 rectified all the issues raised, if they happened as Tim
 8 explains."
 9 A. Yes.
 10 Q. Then --
 11 A. That's chief exec.
 12 Q. Yes and then what's happening there is, second from the
 13 top, an urgent review and then at the very top:
 14 "Can you stand down on this please?"
 15 A. So Sharon Gilkes says "Can you stand down?"
 16 Q. Yes.
 17 A. I don't know who -- sorry, the top email, who is it
 18 from?
 19 Q. It is from a chap called Rob --
 20 A. That's Rob Houghton, right. Both of them from him.
 21 Yes.
 22 Q. So it is clear that at least through 2015 and 2016 there
 23 was a considerable amount of investigation into this?
 24 A. Yes.
 25 Q. Were any of the documents about the investigation into

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1 Dalmellington drawn to your attention in your
 2 instructions?
 3 A. No.
 4 Q. Was Mr Coyne's first report the first time when you
 5 learnt of the Dalmellington bug?
 6 A. I think it must have been. Obviously I had seen the KEL
 7 and I had formed the opinion it wasn't a lasting bug,
 8 when I equated the two then --
 9 Q. Your first report was 7th December 2018?
 10 A. Yes.
 11 Q. The second witness statement of Mr Godeseth and the
 12 first witness statement of Mr Parker were
 13 6th November 2018 and you had had sight of those before
 14 you wrote your first report?
 15 A. Yes.
 16 Q. 16th November 2018 was their witness statement?
 17 A. Yes, that is right. It was quite close to the wire in
 18 terms of getting a report together.
 19 Q. When you get things close to the wire it can cause
 20 difficulties, can't it?
 21 A. Yes.
 22 Q. You get hundreds of thousands of KELs or PEAKs or that
 23 sort of thing?
 24 A. Well, those witness statements were quite close to --
 25 Q. I see. Do you remember whether you considered them

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1 before you did your first report?
 2 A. I did consider them, yes, I'm saying it was --
 3 Q. You specifically relied on them in relation to various
 4 issues, didn't you?
 5 A. I think I did.
 6 Q. Mr Godeseth gave in his second witness statement
 7 evidence on four bugs, Callender Square, receipts and
 8 payments mismatch, local suspense accounts and
 9 Dalmellington, didn't he?
 10 A. Yes.
 11 Q. Mr Godeseth's second statement at {E2/7/9},
 12 paragraph 34, he says:
 13 "Bugs:
 14 "In addition to the Callendar Square issue I have
 15 been asked by Post Office to explain how the following
 16 three bugs came to light and were resolved."
 17 A. Yes.
 18 Q. "The receipts and payments mismatch in September 2010.
 19 "The local suspense account issue in 2011;
 20 "and an issue which occurred at the Dalmellington
 21 branch in October 2015."
 22 A. Yes.
 23 Q. So he had been asked by Post Office to explain that in
 24 addition to Callendar Square. There had been three bugs
 25 one of which was Dalmellington?

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1 A. Yes.
 2 Q. And you expressly relied on Mr Godeseth's evidence in
 3 relation to those three bugs, didn't you?
 4 A. Mr Godeseth's evidence on Dalmellington really didn't
 5 add much to my previous view that it was a remming
 6 problem, these would get corrected by TCs and that's --
 7 remming problems in my mind don't generally lead to
 8 lasting effects on branch accounts.
 9 Q. Will you accept from me, Dr Worden, that you expressly
 10 relied on Mr Godeseth at paragraph 649 of your witness
 11 statement?
 12 MR JUSTICE FRASER: Expert report.
 13 MR GREEN: I'm so sorry.
 14 A. Can we go to 649 and see what it is?
 15 Q. Certainly. {D3/1/153}. 649.
 16 A. "... and reaches conclusions similar to my previous
 17 conclusions."
 18 Yes.
 19 Q. Yes and you then refer again to him in relation to
 20 receipts and payments mismatch?
 21 A. Yes.
 22 Q. Paragraph 650.
 23 A. Yes.
 24 Q. And then in relation to Callendar Square we saw you have
 25 done the same thing at paragraph 667, which I do not

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1 think we need to go to.
 2 A. Yes.
 3 Q. And suspense account bug paragraph 681 {D3/1/160}
 4 MR JUSTICE FRASER: You are going quite quickly.
 5 MR GREEN: Sorry, my Lord.
 6 MR JUSTICE FRASER: Just out of fairness to the witness.
 7 MR GREEN: The short point, Dr Worden, is you go through
 8 every bug in Mr Godeseth's witness statement apart from
 9 the Dalmellington bug which affects 88 branches, despite
 10 relying on his witness statement expressly for the other
 11 three, why is that?
 12 A. Because my opinion has been since long before that that
 13 this was not a bug with a lasting effect on branch
 14 accounts and therefore, in terms of the scope of my
 15 investigation, was not an important bug because it
 16 doesn't leave a subpostmaster with a lasting shortfall.
 17 Q. But it was an important bug because of the scale of the
 18 branches it affected which then required corrections?
 19 A. Well it affected this 100 and so branches that is
 20 correct.
 21 Q. And that was an important number to have a feel for to
 22 look at the scale of branch impacts that are possible
 23 from bugs in Horizon?
 24 A. No, it is not because I'm looking at the scale of impact
 25 from bugs that don't look like something that's normally

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1 corrected. If something is normally corrected then the
 2 investigation of it will not lead to the same result as
 3 something -- you see what I mean? Something that's --
 4 the other three, there's real discrepancy and had to be
 5 investigated. The Dalmellington one never came to
 6 Fujitsu for a good reason.
 7 Q. Let's have a look. {F/1415/1} we have just got time to
 8 look at this. This is the Fujitsu presentation and did
 9 you see that presentation?
 10 A. I have seen that one, yes.
 11 Q. On the first page it is for "PO's internal purposes
 12 only", confidential.
 13 On the second page {F/1415/2} two potentially
 14 separate issues at play, the combination of which may
 15 lead to the scenario above. Yes?
 16 A. Yes.
 17 Q. On the third page {F/1415/3} clear findings about 112
 18 occurrences?
 19 A. Yes.
 20 Q. And detail there. Do you see at the bottom:
 21 "4 items still to be confirmed."
 22 A. Yes.
 23 Q. Then on page {F/1415/7} we see "Detailed Preliminary
 24 Findings"?
 25 A. Yes, this is the by year findings.

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1 Q. By year. 65 incidents in 2010 to 2011. On page
 2 {F/1415/8} we can see 0 calls raised with Fujitsu.
 3 A. Yes.
 4 Q. 0 calls raised with Fujitsu, 2012. 2013, 0 calls raised
 5 with Fujitsu and that's where we pause and see two
 6 unknown outcomes: value £25,000 and £2,500. Did you
 7 notice that when you were doing your report, Dr Worden?
 8 A. When I was doing my report it seemed to me that the main
 9 point was that 108 out of 112 were corrected as part of
 10 the normal process. I was therefore not so concerned
 11 about the two which there has been a lot of subsequent
 12 discussion about and I believe has now turned out to be
 13 a different effect.
 14 Q. Well, can you just answer the question just quickly.
 15 When you were doing your report, did you notice that
 16 there were two unknown outcomes, one of £25,000 and one
 17 of £2,500?
 18 A. Well, I read this document and I must have noticed it
 19 but, as I say, my feeling of the importance of it in the
 20 context of the overall analysis of remming bugs was not
 21 important because things at the edge of a sample -- a
 22 sample of 108, four things at the edge, it is difficult
 23 to know what the detail to those four cases are, so
 24 I was concerned with the majority.
 25 Q. Dr Worden, if you had seen and noticed those figures,

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1 you should have included this bug in your report for two
 2 reasons: (1) the large number of branches affected (2)
 3 the size of the two unknown outcomes, do you accept
 4 that?
 5 A. No. The large number of branches affected is similar to
 6 the large number of branches affected by manual remming
 7 errors, much larger number. So I don't have to -- no,
 8 the fact that some software errors look like human
 9 errors and those human errors are corrected, very much
 10 alters the significance of different errors, and I was
 11 concerned with the overall significance of Dalmellington
 12 and my opinion was and remains that remming errors get
 13 corrected.
 14 MR GREEN: My Lord, is that a convenient moment?
 15 MR JUSTICE FRASER: I think it is. Thank you very much
 16 Dr Worden.
 17 I did give Mr de Garr Robinson this opportunity on
 18 his last day, do you want to start at 10.15 am tomorrow
 19 or do you think 10.30 is adequate?
 20 MR GREEN: I think 10.30 should be adequate.
 21 MR JUSTICE FRASER: Dr Worden, we are going to start again
 22 at 10.30 tomorrow. I'm now going to listen to -- who
 23 knows it might be a couple of minutes, it might be
 24 slightly longer about disclosure. There's no need for
 25 you to wait because quite frankly I don't know how long

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1 I would be asking you to stay, so why don't you just --
 2 A. I shall slack off.
 3 MR JUSTICE FRASER: I would not put it quite like that. By
 4 all means you can go and we are going to revert to the
 5 point that Mr Green started trying to make this morning.
 6 Right.
 7 Discussion
 8 MR JUSTICE FRASER: Right, Mr Green.
 9 MR GREEN: My Lord, there has been an additional thread
 10 added as you may have appreciated during the course of
 11 today, which is that at 1.02 pm we got the ARQ figures.
 12 The only missing year -- we were told up to 2014, they
 13 run back to 2004. We discovered that there was
 14 a missing year.
 15 MR JUSTICE FRASER: What year was that?
 16 MR GREEN: Up to 2013.
 17 MR JUSTICE FRASER: Is that what you were given today?
 18 MR GREEN: That's what we have got. Sorry, the year is 2013
 19 to 2014 is what I meant to say, I may have said the
 20 wrong thing. It turns out that -- we have had to press
 21 for that. It turns out there were more than the
 22 allowance of 720 ARQs in that year.
 23 MR JUSTICE FRASER: Used?
 24 MR GREEN: Used. More than that number requested. But as
 25 Dr Worden doesn't know about that I didn't put those

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1 figures to him. Then, the matter which I raised this
 2 morning is the letter, which I understand I think may
 3 have been sent to the court as well.
 4 MR JUSTICE FRASER: I will tell you what I saw about that.
 5 I saw an email from you which was pursuant to a request
 6 I had just made about some references and then I read
 7 the letter which came in as a result of your email and
 8 that's about I think the extraction of data into a more
 9 usable form which went in the WBD document and that is
 10 MSC data which was disclosed anyway, is that right?
 11 MR GREEN: My Lord that's absolutely correct. It was
 12 disclosed in separate spreadsheets and then as I hope
 13 I correctly and accurately explained to the court it was
 14 then disclosed to us in a new and different form.
 15 MR JUSTICE FRASER: I understand.
 16 MR GREEN: Putting content from different documents into one
 17 document and I cross-examined on the difference between
 18 the two.
 19 MR JUSTICE FRASER: I understand. That's what you wanted to
 20 mention this morning?
 21 MR GREEN: I wanted to make sure there was no
 22 misunderstanding. From our perspective that is under
 23 CPR 31.9, those are new documents in the same way that
 24 the copy with the manuscript edition that someone wants
 25 to rely on is a new document because they have come from

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1 three different disclosed documents and they have been
 2 put together and the way in which they have been put
 3 together differs and we rely on the difference.
 4 MR JUSTICE FRASER: All right. But if and insofar as that
 5 is a point, that's a point for submission, argument and
 6 for me, it doesn't affect the cross-examination.
 7 MR GREEN: It was just to explain why --
 8 MR DE GARR ROBINSON: It doesn't, my Lord, but I would
 9 welcome the opportunity to explain. My learned friend
 10 during the course of his cross-examination has on
 11 a number of occasions said that documents have been put
 12 in the trial bundles.
 13 My Lord your Lordship will appreciate that's been
 14 happening more or less on a continuous basis by both
 15 sides throughout the entirety of this case.
 16 Those MSCs, they were inserted as a result of my
 17 request.
 18 MR JUSTICE FRASER: Which I understand from the letter to
 19 put it in a usable form, is that right?
 20 MR DE GARR ROBINSON: Exactly. My Lord what happened was in
 21 Mr Coyne's second report, I think, you will forgive me
 22 if I can't remember particular paragraphs, but
 23 paragraphs 3.315 and 5.242 spring to mind, it might be
 24 5.424.
 25 MR JUSTICE FRASER: You are just showing off.

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1 MR DE GARR ROBINSON: It is a memory test.
 2 MR JUSTICE FRASER: But at two places in the report?
 3 MR DE GARR ROBINSON: Mr Coyne referred to MSCs that were of
 4 interest to him or to PEAKs that were of interest to him
 5 that related to MSCs.

6 My Lord, I asked for the data relating to those MSCs
 7 to be extracted from the spreadsheets because I'm not
 8 very good with spreadsheets, frankly. I find the
 9 smallness of the text very difficult. My instructing
 10 solicitors therefore downloaded that data which
 11 everybody already had onto clean documents so that they
 12 could be easier to deploy. I rather optimistically
 13 thought I would have the opportunity and time to
 14 cross-examine Mr Coyne about the MSCs and the issues
 15 that he was discussing and so I asked for those
 16 documents, which as I say just clarified data that had
 17 already been disclosed, and indeed was already in the
 18 trial bundles. I asked for those to be put into the
 19 trial bundle.

20 As it turns out my optimism proved unfounded, I ran
 21 out of time, so I didn't have the opportunity to
 22 cross-examine him on his report.

23 So my Lord to the extent that there are any dark
 24 intimations being conjured up by this process, I'm fully
 25 responsible and I was trying to be helpful and I believe

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1 had I had an opportunity to cross-examine Mr Coyne, it
 2 would have been helpful.

3 MR JUSTICE FRASER: So the short points are: the data in
 4 those MSC documents was already available in disclosed
 5 documents but in spreadsheet form; they were put
 6 together in a more usable form for cross-examination
 7 purposes; and there are no dark intimations.

8 MR DE GARR ROBINSON: Indeed.

9 MR JUSTICE FRASER: I have that. Thank you very much. That
 10 was included, effectively, in the letter but of course
 11 it is very helpful to have it explained.

12 MR DE GARR ROBINSON: There are conspiracy theories often
 13 suggested and I was quite concerned to scotch that
 14 particular one.

15 MR JUSTICE FRASER: That's entirely understood. Thank you
 16 very much.

17 Mr Green, anything more to say about that?

18 MR GREEN: My Lord you will appreciate from the
 19 cross-examination our concern was there was a key
 20 document which missed out the bad bits and they are put
 21 together in different ways.

22 MR JUSTICE FRASER: No, I understand. There is a point I'm
 23 going to raise with both of you about disclosure but it
 24 is not this point, but so far as the cross-examination
 25 of this witness is concerned, the exchanges this week

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1 have taken us where they have taken us and it is
 2 irrelevant -- I beg your pardon -- it is not going to
 3 affect what happens tomorrow, let's put it that way?

4 MR GREEN: Exactly.

5 MR JUSTICE FRASER: Because the timetable of this trial has
 6 already been affected by one or two other matters and
 7 that's my main concern.

8 My second concern -- I shouldn't say concern but
 9 given the point has been raised I'm going to address it
 10 now rather than tomorrow. In Mr Coyne's
 11 cross-examination he was asked about OCPs and OCRs and
 12 in re-examination it was said, I think, that there were
 13 two and a half thousand that were very recently
 14 disclosed and -- I have got the note somewhere -- that
 15 was also one of those eventful days in late May, is that
 16 correct?

17 MR GREEN: No. That was 18th April, my Lord. So mid-flow.

18 MR JUSTICE FRASER: Right. Now did that come with
 19 a covering letter?

20 MR GREEN: I think it may have done. My Lord would you like
 21 us to send you the reference?

22 MR JUSTICE FRASER: No, what I would like to do is just
 23 explore now, firstly with Mr de Garr Robinson,
 24 a quantity of documents of that number coming at that
 25 stage in this trial requires an explanation.

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1 MR DE GARR ROBINSON: Yes. Perhaps I can give it now?

2 MR JUSTICE FRASER: Well, you can but by all means don't
 3 feel obliged because I'm going to ask for a witness
 4 statement, but by all means tell me the explanation.

5 MR DE GARR ROBINSON: My Lord, the position is this: the
 6 OCPs and OCRs are maintained on the Fujitsu system and
 7 they were disclosed when they were disclosed back in
 8 January. My Lord, so far as Post Office were concerned
 9 that was that. Then much later Fujitsu discovered
 10 an old database that had been copied more than ten years
 11 previously on a system somewhere and told Post Office
 12 that they had found this collection of documents.

13 Post Office, within a matter of days, realising they
 14 were disclosable, I'm not sure there was any order for
 15 disclosure but realising it was appropriate for those
 16 documents to be disclosed voluntarily in the way that
 17 the previous OCPs and OCRs had been disclosed, Post
 18 Office immediately wrote to Freeths in order to explain
 19 that they had learned from Fujitsu that this unexpected
 20 cache of OCRs -- it should be remembered we are talking
 21 about OCRs not OCPs, these aren't document relating to
 22 changes which might have been made directly to branch
 23 accounts -- but that information was provided as quickly
 24 as could be done and, my Lord, as I say, the rest is
 25 history.

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1 MR JUSTICE FRASER: Right. And that's what led to the
2 documents being provided on the 18th April?
3 MR DE GARR ROBINSON: Yes.
4 MR JUSTICE FRASER: Let me put myself neutrally, it does not
5 necessarily surprise me that they have come from Fujitsu
6 rather than documents that the Post Office already had,
7 but it seems to me a witness statement of explanation is
8 required for my purposes. I have looked in the H bundle
9 and I have not found a letter which explains that
10 situation to me the way you have explained it.
11 MR DE GARR ROBINSON: There is correspondence about this.
12 MR JUSTICE FRASER: I have seen quite a bit of
13 correspondence about it but I rather ran out of steam
14 when I had looked at about 10 or 20 letters.
15 MR DE GARR ROBINSON: That is entirely forgivable if I may
16 say so.
17 MR JUSTICE FRASER: I'm not going to impose a draconian
18 deadline on you and it is not going to affect tomorrow
19 at all, but I would like please a witness statement of
20 explanation about that tranche of disclosure.
21 The MSC cross-examination creation document scenario
22 doesn't bother me in the least. I used to do the same
23 myself and sometimes data that's already in documents is
24 more usefully packaged in different forms. I don't
25 intend to say anything more about that. Mr Green can

1 explore that if and when he wants, when he makes his
2 closing submissions if he feels he needs or wants to.
3 But the disclosure of those documents, albeit coming
4 from Fujitsu, I would like a witness statement to
5 explain that.
6 MR DE GARR ROBINSON: My Lord, that will be done. Can I say
7 two things. Ms Keating has very helpfully drawn my
8 attention to two H documents which may be helpful for
9 your Lordship's purposes.
10 MR JUSTICE FRASER: Yes.
11 MR DE GARR ROBINSON: {H/263/1} and {H/273/1}. And my Lord
12 deadline for the witness statement?
13 MR JUSTICE FRASER: It is not going to be before noon next
14 Wednesday. But what I would like it -- I'm not going to
15 dictate all the information that needs to be included --
16 but I would like to know the dates when the
17 Post Office's solicitors or the Post Office was told and
18 in accordance with the rules of the CPR, if the
19 information is coming from Mr X or Ms X at Fujitsu, it
20 should say "I was contacted by Mr X or Ms X". It should
21 not say --
22 MR DE GARR ROBINSON: Sources of information.
23 MR JUSTICE FRASER: Well in modern witness statements now
24 often one just finds "I understood from company X" and
25 that's not good enough. 12 o'clock next Wednesday is

1 fine. We will put that in its own separate box for the
2 moment.
3 MR DE GARR ROBINSON: Thank you.
4 MR JUSTICE FRASER: There is one other point since we are
5 having a sort of general round up and this isn't for
6 tomorrow and it is probably not even for the closings,
7 save the end of day 2 of the closings. There are two
8 case management conferences in the court diary for this
9 case going forward still from the timetable as it was
10 set down before March. I will just remind you what they
11 are. One is 23rd July and one is 18th September.
12 They were directed as part of what was the intended
13 2019 progress of this action which has obviously not
14 unfolded exactly as one would have expected and at the
15 end of day 2 of the closings I think we are just going
16 to have to have a brief stock-take about the shape of
17 the remainder of this calendar year, and I was going to
18 mention again that tomorrow but on the basis we are
19 dealing with other matters, I thought I would mention it
20 to you now. Neither of you need to say anything about
21 it, but it is just something we have to think about.
22 So 10.30 am tomorrow. Thank you very much.
23 (4.41 pm)
24 (The court adjourned until 10.30 am on Friday,
25 14th June 2019)

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